ModView Message Editor 1.0

EKAN ME-100M





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Chapter 1 ModView Message Editor Installation

EKAN ME-100M use ModView script as display control language, ModView message editor could help you generate these scripts, and upload/download these script into EKAN ME-100M. Following chapter will teach you to use message editor to edit messages. And how to use third party client like Visual Basic, InduSoft, OPC...to control EKAN ME-100M message display.

1-1 ModView message software installation

Your computer is required to fit the minimum requirement in order to install ModView message software.

Operation system version: Windows 2000 or higher

CPU: Pentium II 350 MHz or higher

RAM: 128MB or higher

Display: Standard display

Disk space needed: 5 MB or Higher

Click on **Setup** icon in your EKAN CD root directory, press **[Next]** to continue:





Please select create desktop icon (if needed), Press [Next] and the [Install] to install ModView program.



After install, You could use [Start/Program/eSoftsystem/ModView] to start ModView program:





1-2 Start ModView message editor

After successfully install ModView message editor, you could use [Start/Program/eSoftsystem/ModView] to start ModView program.

Click on the message editor icon, select create a new project and give project name.

- 1. Select create a new project
- 2. Give the project name "Test"
- 3. Change the project location (if needed)
- 4. Enter the ModView main manual

Create/Load ModView Proj	ject 🔀	
Create/Load Project	ок	
C Load Existing ModView Project	M Create New Project	×
	Project Name: OK	
MModView Message Editor - [Test*]	Project Location: C:\Program Files\eSoftsystem\ModView Browse	
Image: Same state project in the same s	Modeus Serting Vaniable List Message List TCP Texter Text	
ME-100M	ーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーー	



After project created, Press **[Save]** button, the project file will be store at project directory and with the file name XXXX.mvp. XXXX is file name. And the upload message files will be generated at same time.



Input the ModView IP address in the TCP/IP text box, when the project files upload, **ModView Tester** will be use this IP setting for system configuration, **Make sure the IP Address is CORRECT here**:

System	Modbus Setting	Variable List	Message List	TCP Tester
	, <u> </u>			·
Project Name	Test			
Communication Typ				
© TCP/IP	Use TCP/IP	192.168.0.100		
	Port	502		
			J	
Device Setting				
Device Name	EKAN ME-	100M		



1-3 MODBUS address setting

ModView could have 40 regular message groups and 20 emergency message groups, each group could be triggered individually and have their own message scripts. Each message group could have one line or multi lines of message script.

All messages using 60 continuous addresses, default start from 00300. First 20 messages is Emergency messages (00300-00319), other 40 messages is regular messages (00320-00359).

- □ **Float Register**: 40100-40124 (64 float variables)
- □ Boolean Coil: 00100-00131 (32 Boolean variables)
- □ **Emergency message**: 00300-00319 (20 message blocks)
- □ **Regular message**: 00320-00359 (40 message blocks)

In some systems, must use 00301-00320 and 00321-00360 to connect systems. You may change these MODBUS setting to fit your software environment setting. You must enter all address required, to let **[APPLY]** take effect.

System Modbu	is Setting	Variable List	Message List	TCP Tester
Emergency Message Start Address	; (20 Continuous 0xxxx	Coil Address) —		
Emergency Message Start Add	ess Current Address	300	New Address:	
Regular Message Start Address (4	0 Continuous 0xxxx Co	oil Address)		
Regular Message Start Address	Current Address:	320	New Address	
Float Variable Start Address (64 Ci	ontinuous 4xxxx Registi	er Address)		
Float Variable Start Address	Current Address	100	New Address:	
3oolean Variable Start Address (32	Continuous Oxxxx Boo	olean Address) —		
Message Modbus Start Address	Current Address	: 100	New Address:	
	Restore	Default	Apply	
			11000	

Chapter 2 Variable configuration

ModView support 2 different types of variable: Boolean and Float. Boolean mapped to MODBUS address 0xxxx, user could use MODBUS function 5 to update the Boolean variable status.

Float variable mapped to MODBUS address 4xxxx, user could use function 16 to update Float variable status.

All MODBUS address setting will be saved in upload file: "modbus.adr"

File name	Function
modbus.adr	MODBUS address setting file
default.pls	Play List file
stdmsg.ilm	Standard message configuration file
altmsg.ilm	Emergency message configuration
ilmvar.def	Boolean variable and float variable address and format definition file

EKAN ME-100M supports 64 float variables and 32 Boolean variables. Default start address for float variables is 40100, and for Boolean variables is 00100.

EKAN ME-100M need following configuration files in order to make message play correctly. ModView will automatically generate these files when project is saved or uploaded.

In the following section, we will explain details of those files, and the syntax of message script. You could find message configuration sample under /Sample/ModView_Sample folder.



2-1 Boolean variable configuration

Boolean type variable only have 2 different states: ON and OFF (0 or 1), you could set different message on ON state and OFF state.

- 1. Switch to [Variable List] page
- 2. Select the coil variable you want edit.
- 3. Press [Edit Variable] button

ModView Message Editor - [Test]			<u> </u>
Eile Link Option Help			
Image: Save Image: Save			
System	Modbus Setting Variable	List Message List	TCP Tester
ModView			
System	Variable Name:	CoilVar1	
Variable ListCoilVar2	Variable address	100	
ModView Test CoilVar4	Variable Type:	BOOLEAN	
ColVar6	Default value:	0	
Coilvar	Width:		
CoilVar9		I	
CoilVar1	0 Precision:		
Colivar1	2		[]]
CoilVar1	3 ON message:	JON	
CoilVar1	4 "OFF" message	OFF	
CoilVar1	5	Join	
CoilVar1	7		
Colivari	, 8		
CoilVar1	9		
CoilVar2	0		
CoilVar2	1		
CoilVar2	2 Edit Vari	able Apply	
Line Collyarz	·		
ME-100M	TCP		2005/8/2 下午 12:06

Select default value for the Boolean variable, default is "0"

Input the Boolean "ON" message, and Boolean "OFF" message. The input message length is limited into 48 chars (8x16). If the characters is too long, then the EKAN will cut the extra length.

Press **[OK]** to set the variable, then **[Apply]** button to apply changes.

🗟 Boolean Variable E	diting	×
Variable Name:	CoilVar1	ок
Variable address:	100	Cancel
Default value:	0 🗸	
"ON"	ON	
"OFF" message	OFF	



After you **[Apply]** the changes, the coil variable setting will be changed. Please repeat previous steps to add more variables.

"ON" message:	ON
"OFF" message	OFF
Edit Variable	Apply



2-2 Float variable configuration

Float variable have 3 parameters need to set, first one is the length of the float variable, 2^{nd} is the precision of variable, and 3^{rd} is the default value of the float variable.

For example, a float variable "140.233" total length is 7, and the precision is 3, and the default value might be "10.101". You could use MODBUS protocol function 16 (10 hex) to update the float variable later.

- 1. Switch to [Variable List] page
- 2. Select the float variable you want edit
- 3. Press [Edit Variable] button

ModView Message Editor	- [Test]				
Eile Link Option Help					
New Open Save Up	oad Download				
System information	Details				
ModView	System	Modbus Setting	Variable List	Message List	TCP Tester
— System — Modbus Setting — Variable List — Message List — ModView Test	Register (Float) RegVar1 RegVar2 RegVar3 RegVar4 RegVar5 RegVar5 RegVar6		Variable Name: Variable address: Variable Type: Default value:	RegVar1 100 FLOAT 0.0	
	RegVar7 RegVar8 RegVar9 RegVar10 RegVar10 RegVar12 RegVar12 RegVar13 RegVar14 RegVar14 RegVar15 RegVar16 RegVar17 RegVar18 RegVar19 RegVar20 RegVar21 RegVar21 RegVar23	T	Width: Precision: "ON" message: "OFF" message Edit Variable	7 3 Apply	
ME-100M			TCP		2005/8/2 下午 12:31



Set value for the float variable, default value is $0^{\prime\prime}$. The value set here will be used while EKAN ME-100M power up.

The width of the variable, 7 means the total character length including floating point is 7 characters. And the 3 means there will be 3 characters on the right side of floating point.

Press **[OK]** to set the variable, then press **[Apply]** button to apply changes.

M Float Variable Ed	iting	×
Variable Name:	RegVar1	ОК
Variable address:	100	Cancel
Default value:	0.0	
Width:	7	
Precision:	3	

After you **[Apply]** the changes, the coil variable setting will be changed. Please previous steps to add more variable.

"ON" message:	ON
"OFF" message	OFF
Edit Variab	e Apply



Chapter 3 Message editing

ModView uses ModView script for message display. ModView message editor could help you to generate these scripts. And you could modify these scripts that generated by ModView message editor manually. We will show how to use message editor to help you generate these scripts in this chapter.

ModView have 40 regular message groups and 20 emergency message groups, each group could be triggered individually and have own message script blocks. Each message group could have one line or multi lines of message script.

All message using 60 continuous addresses, default start from 00300. First 20 messages is Emergency messages (00300-00319), other 40 messages is regular messages (00320-00359).

In some systems, you should use 00301 to trigger first message instead 00300.

3-1 Message with text

The text based messages are plain text message without any variable inside. I could have special effect like scroll in, scroll-up, blink. Following is a regular meesage sample with using scroll-in effects:

- 1. Switch to [Message List] page
- 2. Select the regular message number that you want edit.
- 3. Press [Message Wizard] button

System Modbus Setting Variable List Message List TCP Tester Regular Regular Message Name: STDMSG1 Regular Regular3 Message Serial: 1 Regular5 Regular6 Regular9 Regular1 Regular1 Regular1 Regular1 Regular2 Regular5 Regular3 Regular6 Regular4 Regular7 Regular5 Regular10 Regular11 Regular12 Regular13 Regular15 Regular16 Regular19 Regular20 Regular21 Regular23 Message Wizard	Details					
E Regular Regular Message Name: STDMSG1 Message Serial: Regular3 Message Serial: Regular4 Regular5 Regular5 Regular9 Regular10 Regular10 Regular12 Regular13 Regular15 Regular16 Regular18 Regular20 Regular23 Message Wizard	System	Modbus Setting	Variable List	Messa	age List	TCP Tester
■ Regular Message ▲ ■ Regular1 Message Name: ■ Regular2 ■ ■ Regular3 ■ ■ Regular4 ■ ■ Regular5 ■ ■ Regular6 ■ ■ Regular7 ■ ■ Regular6 ■ ■ Regular7 ■ ■ Regular6 ■ ■ Regular7 ■ ■ Regular1 ■ ■ Regular12 ■ ■ Regular13 ■ ■ Regular14 ■ ■ Regular15 ■ ■ Regular16 ■ ■ Regular20 ■ ■ Regular23 ▼						
Regular1 Message Serial: Regular2 Message Serial: Regular3 Regular4 Regular5 Regular5 Regular6 Regular6 Regular7 Regular7 Regular1 Regular1 Regular2 Image: Serial: Regular5 Image: Serial: Regular5 Regular5 Regular6 Regular6 Regular7 Regular10 Regular11 Image: Serial: Regular12 Image: Serial: Regular13 Regular14 Regular15 Image: Serial: Regular16 Regular15 Regular20 Regular21 Regular23 Image: Mized	ERegular Message	Mes	sage Name: STOM	ISG1		
Regular2 Message Serial: Regular3 CLEAR Regular6 CLEAR Regular7 Regular7 Regular9 Regular9 Regular10 Regular10 Regular12 Regular13 Regular15 Regular16 Regular16 Regular17 Regular17 Regular12 Regular18 Regular21 Regular20 Regular21 Regular21 Regular23	Regular1		prov	1001		
Regular3 CLEAR Regular5 CLEAR Regular6 Regular7 Regular7 Regular8 Regular8 Regular9 Regular10 Regular11 Regular12 Regular13 Regular13 Regular14 Regular16 Regular17 Regular17 Regular12 Regular18 Regular12 Regular20 Regular21 Regular21 Regular23	Regular2	Mes	sage Serial: 1			
Regular4 Regular5 Regular5 Regular6 Regular6 Regular7 Regular8 Regular9 Regular10 Regular13 Regular15 Image: CLEAR Regular2 Image: CLEAR Regular3 Image: CLEAR Regular4 Image: CLEAR Regular5 Image: CLEAR Regular6 Image: CLEAR Regular18 Image: CLEAR Regular15 Image: CLEAR Regular16 Regular15 Regular17 Regular16 Regular20 Regular21 Regular23 Image: Mizard	Regular3		· · · · ·			
Regular5 Regular6 Regular7 Regular9 Regular10 Regular11 Regular13 Regular15 Regular15 Regular16 Regular17 Regular17 Regular17 Regular20 Regular20 Regular23 ▼ Message Wizard Apply	Regular4	CL	EAR			A
Regular6 Regular7 Regular8 Regular9 Regular10 Regular11 Regular12 Regular13 Regular14 Regular15 Regular16 Regular17 Regular18 Regular20 Regular21 Regular23 Message Wizard	Regular5					
Regular7 Regular8 Regular9 Regular10 Regular11 Regular12 Regular13 Regular15 Regular16 Regular17 Regular18 Regular19 Regular12 Regular21 Regular21 Regular23	Regular6					
Regular8 Regular9 Regular10 Regular11 Regular13 Regular13 Regular15 Regular15 Regular16 Regular17 Regular19 Regular20 Regular21 Regular21 Regular23	Regular7					
Regular9 Regular10 Regular12 Regular13 Regular13 Regular15 Regular16 Regular16 Regular17 Regular17 Regular20 Regular20 Regular21 Regular23	Regular8					
Regular10 Regular11 Regular12 Regular13 Regular15 Regular16 Regular17 Regular18 Regular19 Regular20 Regular21 Regular23	Regular9					
Regular11 Regular12 Regular13 Regular13 Regular14 Regular15 Regular16 Regular17 Regular19 Regular20 Regular21 Regular23 Message Wizard Apply	Regular10					
— Regular12 — Regular13 — Regular13 — Regular14 — Regular15 — Regular16 — Regular17 — Regular18 — Regular20 — Regular21 — Regular23 — Message Wizard	Regular11					
Regular13 Regular14 Regular15 Regular15 Regular17 Regular10 Regular20 Regular21 Regular23 Message Wizard Apply	Regular12					
Regular14 Regular15 Regular15 Regular16 Regular17 Regular17 Regular20 Regular21 Regular23 Message Wizard Apply	Regular13					
Regular15 Regular16 Regular17 Regular17 Regular20 Regular21 Regular23 Message Wizard Apply	Regular14					
Regular16 Regular17 Regular19 Regular20 Regular21 Regular23 Message Wizard Apply	Regular15	i 🔤 🗖				
Regular17 Regular18 Regular20 Regular21 Regular22 Regular23	Regular16					
Regular18 Regular20 Regular21 Regular22 Regular23 V Message Wizard Apply	Regular17	'				
Regular19 — Regular20 — Regular21 — Regular22 — Regular23 — Message Wizard Apply	Regular18					
Regular20 Regular21 Regular22 Regular23	Regular19					
Regular21 Regular22 Regular23	Regular20					
Regular22 Regular23 Message Wizard Apply	Regular21					
Regular23	Regular22		laccade Witard	0 pply	1	
	Regular23		iessage wizaru	whhia		
		_				

- 4. Select [Text] as message format
- 5. Input the message text "Hello World!!!" in the content field

6. Select **[Effect Setting]** and select **[GO-UP]** and **[GO-DOWN]** as entering and leaving effects

- 7. Select proper message color in the message color setting
- 8. Set the message font to "8x15"
- 9. Press [OK] button

M Message Wizard	×
Text C Bitmap	
Bitmap Path : Browse	OK Cancel
Text	
Content : Hello World!!!	
Effects Setting Speed Entering Effects GO-UP Leaving Effects GO-DOWN Special Effects STILL Delay (Sec.) 1	
Foreground Color Background Color	
1st variable CoilVar1 🔽 RED 💌 BLACK 💌	
2nd variable CoilVar1 🔽 RED 🔽 BLACK 🔽	
3rd variable CoilVar1 🔽 RED 💌 BLACK 💌	
4th variable CollVar1 V RED V BLACK V	



Then, when you back to main menu, you will see following script in the text box:

CLEAR CLEAR TEXT 0 0 RED BLACK "Hello World!!!" IN GO-UP 1 50 ACT STILL 1000 OUT GO-DOWN 1 50

System	Modbus Setting	Variable List	Message List	TCP Tester
Regular Message Regular1 Regular2 Regular3 Regular3 Regular4 Regular5 Regular6 Regular7	Mes Mes CL CL	sage Name: STDMSG1 sage Serial: 1 EAR EAR	Hello World!!!"	<u> </u>
Regular8 Regular8 Regular9 Regular10 Regular11 Regular12 Regular13 Regular14		GO-UP 1 50 T STILL 1000 JT GO-DOWN 1 50		
Regular15 Regular16 Regular17 Regular18 Regular19 Regular20 Regular21	4			ŀ
Regular22 Regular23	•	lessage Wizard	Apply	

10. Press [Apply] button to save this message.

After you save the message, you could save all projects files by click **[Save]** button at control bar.

Press [Save] button at control bar





Then, You could upload the message by click [Upload] button

S.M	🛎 ModView Message Editor - [test]						
Eile	<u>L</u> ink	<u>O</u> ption	<u>H</u> elp				
₹u 111 u)		Ø	4		6		
Net	w	Open	Save	Upload	Download		



3-2 Message with variable (1/0 Data, Date/Time)

The most important function is the message could have variable inside. For example, a PLC's temperature information could send to ModView to display via MODBUS protocol. Following is a message with float variable inside at MODBSU address 40100.

When you insert variable, **you MUST use \% \times v (ex: \% 7v)** as variable symbol to insert variable. The \times is the character space for variable.

1. Switch to [Message List] page

2. Select the regular message you want edit. We may use regular message 2 now.

3. Press [Message Wizard] button

System	Modbus Setting	Variable List	Message List	TCP Tester
Regular Message Regular1 Regular2 Regular3 Regular4 Regular5 Regular5 Regular6 Regular6 Regular7 Regular8 Regular9 Regular10 Regular11 Regular12 Regular13 Regular13 Regular14 Regular15 Regular16 Regular17 Regular19 Regular19	▲ Mes CL	ssage Name: STDM5G2 ssage Serial: 2 EAR		× P
Regular22 Regular23	▼	1essage Wizard	Apply	



- 4. Select [Text] as message format
- 5. Input the message text "Float %7v" in the content field

M Message Wizard	×
🖸 Text 🕜 Bitmap	
Bitmap- Path :Browse	OK Cancel
Content : Float %7v	
Effects Setting Speed Entering Effects GO-LEFT (Medium) Leaving Effects GO-LEFT (Medium) Special Effects STILL) Delay (Sec.) 1	
Variable setting Enreground Color Background Color	
1st variable RegVar1 ▼ GREEN ▼ BLACK ▼	
2nd variable CoilVar1 🔽 RED 🔽 BLACK 🔽	
3rd variable CoilVar1 RED BLACK 4th variable CoilVar1 RED BLACK	

6. Select variable name on the 1st variable field, here we use "**RegVar1**" for the Float variable we used in previous section. And select proper color for the variable text.

You could use "Float %7v Float 2 %7v Float 3 %7v Float 4 %7v to load multiple variable"



DATE/TIME is a special type of variable, you could use %8v for Time and %10v for Date.

	-Variable setting	,					
				Foregrour	nd Color	Background Color	
	1st variable	DATE	•	RED	•	BLACK 💌	
	2nd variable	RegVar59 RegVar60		RED	-	BLACK	
	3rd variable	RegVar61 RegVar62		RED	~	BLACK	
	4th variable	RegVar63 RegVar64		RED	Ψ.	BLACK	
		TIME	•				

7. Select **[Effect Setting]** and select **[GO-UP]** and **[GO-DOWN]** as entering and leaving effects

8. Select proper message color in the message color setting, we use Green in the sample.9. Set the message font to "**8x15**"

10. Press **[OK]** button

PVAR 48 0 GREEN BLACK RegVar1	
GO-OP 1 50 F STILL 1000 F CO-UR 1 50	
1 00-0F 1 30	
	-

11. Press **[Apply]** button to save this message.



3-3 Message with graphic

You could use 1 bit BMP as message, and upload the BMP file by message editor.

- 1. Switch to [Message List] page
- 2. Select the regular message you want edit.
- 3. Press [Message Wizard] button

MMessage Wizard		×
Path :	Browse	OK Cancel
Content :	Message Color Setting Forground Color RED V	
Entering Effects GO-LEFT V Medium V Leaving Effects GO-LEFT V Medium V Special Effects STILL V Delay (Sec.) 1 V	Background Color BLACK Font Bx15	
Variable setting		
Foreground Color 1st variable ColVar1 RED Image: ColVar1 RED Image: ColVar1 Image: ColVar1 RED Image: ColVar1 Image: ColVar1 <t< td=""><td>Background Color BLACK V BLACK V BLACK V</td><td></td></t<>	Background Color BLACK V BLACK V BLACK V	

- 4. Select [BMP] as message format
- 5. Press [Browse] to add message

開啓					<u>?</u> ×
查詢(]):	🔁 ण		•	+ 🗈 💣 🖩	•
表最近的文件 () 点面 () 我的文件 () 我的文件 () 我的文件 () () () () () () () () () ()	in ocx in j.lonp i 2.bmp i 3.bmp				
網路上的芳鄰	檔名(N): 檔案類型(T):	1.bmp Bmp File(*.bmp)		•	開啓(0) 取消
		□ 以唯讀方式開啓(R)			//



After insert the message, you could see inserted BMP's name, and select the effect want to use.

- 6. Select proper message color in the message color setting
- 7. Press **[OK]** button, and the **[Apply]** button to apply message setting.



ModView will upload all BMP files in the project directory. MAKE SURE YOU PUT ALL BMP FILES IN THE PROJECT DIRECTORY BEFORE UPLOAD.

STOP Please make sure you put bmp in the project directory

Before you upload the BMP file, you MUST copy BMP files into same directory **into current project file directory** (by default it's located at C:\Program Files\eSoftsystem\ModView). Please copy used BMP file into the ModView project directory for message upload. Or will have BMP load error message ("F07 bmp load","Ib 1.bmp" error).



After you finish message editing, you could upload the Message project. Before you upload the project, make sure you have ModView IP address in hand and all the BMP files copied into the program directory

4-1 Upload message files

Enabling Your Embedded Solution

Press **[Save]** Button to make sure project saved. Then press **[Upload]** button to upload message configuration files.



Check the IP address is correct before you upload. The EKAN ME-100M will use port 7000 as default port for message upload.

Upload/Download IP Address						
IP Address 192.168.100.97	Connect					
Port 7000	Cancel					



4-2 Download message files

You could press **[Download]** button to download the message configuration setting. Before you download, you must give a specific project name for later save.

Create new project for downloaded files	×
Project Name:	OK
DEMODOWN	
	Cancel
Project Location:	
C:\Documents and Settings\Tony\桌面\ModVi Browse	

Press [Save] button to save downloaded message project:



The DEMODOWN.mvp will be saved on the program installation directory.

Chapter 5 Test message display

ModView message editor provide a simple tool used for message display test. You could use this tool to test message display via MODBUS TCP protocol.

First you have setup IP address on the system configuration page:

- 1. Input the IP address
- 2. After IP address was set, switch to [ModView Tester] Page:

ModVie	ew Messag	je Edito	r - [Test]						_ 🗆	×	
Eile Link (Option <u>H</u> elp											
1000 A	6	\$ (2									
New	Open Sa	ve Up	load Dow	nload								
System inform	mation		Details		v		<hr/>	v			_	
E Mod	dView		Sys	tem	Modbus	Setting	Variable List	Message Lis	it 🛛	TCP Tester		
	System Modbus Se	tting			Tech			-				
	Variable Lis	st	Project Na	me	Tesc							
	Message Li ModView Te	ist	Commun	ication Type								
	MOGVIOW 10	551	6.10	0/10	Lice TCD/I	D						
				- / 1-	030 10171		192.168.100.97					
					Port		502					
			-Device 9	etting								
			Device	lecting								
			Device	Name		EKAN ME-	100M					
			Г	Details —								
				System	Configuration		Modbus Setting	Message List		Variable List		ModView Tester
				Emerç	gency Messag	je						
				- Emerg	gency Messag t Address	je — 1	2 3	4 🗖 5 🧖	6 🗖 7	□8 □9	1 0	Update
ME-100M				Emerç Star 300	gency Messag t Address	ge ─── 1 □ 1	□ 2 □ 3 □ 1 □ 12 □ 13 □	4 🗖 5 🗖 14 🗖 15 🗖	6 🗖 7 16 🗖 17	□8 □9 7 □18 □19	☐ 10 ☐ 20	Update
ME-100M				Emerg Star 300	gency Messag t Address)	je 1 1	□ 2 □ 3 □ 1 □ 12 □ 13 □	4 🗖 5 🗖 14 🗖 15 🗖	6 🗖 7 16 🗖 17	□ 8 □ 9 7 □ 18 □ 19	☐ 10 ☐ 20	Update
ME-100M				Emerg Star 300 Regul	gency Messag t Address) ar Message –	je 1 1		4 🔽 5 🗖 14 🗖 15 🗖	6 🗖 7 16 🗖 17	□ 8 □ 9 7 □ 18 □ 19	☐ 10 ☐ 20	Update
ME-100M				Emerg Star 300 Regul Star	gency Messag t Address) ar Message – t Address	je 1 1 1		4 🗆 5 🗖 14 🗖 15 🗖 4 🗖 5 🗖	6 7 16 17 6 7	□ 8 □ 9 7 □ 18 □ 19 □ 8 □ 9	☐ 10 ☐ 20 ☐ 10	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address) ar Message – t Address	je 1 1 1 1		4 5 7 14 15 7 4 5 7 14 15 7	6	□ 8 □ 9 7 □ 18 □ 19 □ 8 □ 9 7 □ 18 □ 19	☐ 10 ☐ 20 ☐ 10 ☐ 20	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address) ar Message – t Address	ge 1 1 1 1 1 1 2	2 3 1 1 12 3 13 1 2 7 3 1 1 12 7 13 1 1 12 7 13 1 1 12 7 13 1 1 22 7 3 7	4 5 1 14 15 1 4 5 1 14 15 1 24 25 1	6	8 9 18 19 8 9 18 19 18 19 18 19 28 29	10 20 10 20 20 20 30	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address) ar Message – t Address	pe	2 3 1 2 3 1 2 3 1 1 12 3 1 1 12 3 1 1 12 13 1 1 12 13 1 1 22 2 3 1 1 32 3 1 1 32 3 3	4 5 5 14 15 7 4 5 7 14 15 7 14 15 7 24 25 7 34 35 7	6 7 16 17 6 7 16 17 16 17 26 27 36 33	8 9 7 18 19 7 8 9 7 18 19 7 18 19 7 28 29 7 28 29 7 28 29 7 38 39	10 20 10 20 20 30 40	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address) ar Message – t Address	pe	2 3 1 2 3 1 2 3 1 1 12 3 1 1 12 1	4 5 7 14 5 7 4 5 7 14 15 7 14 15 7 24 25 7 34 35 7	6 7 16 17 6 7 16 17 16 17 26 27 36 37	8 9 7 18 19 8 9 7 18 19 7 18 19 7 28 29 7 28 29 7 38 39	10 20 10 20 20 30 40	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address lar Message - t Address	je 1 1 1 1 1 1 1 2 3 3	2 3 1 1 12 3 1 2 3 1 1 12 1 1 1 1 1 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 5 1 14 5 1 4 5 1 14 15 1 24 25 3 34 35 1	6 7 16 17 6 7 16 17 26 27 36 37	8 9 7 18 19 7 8 9 7 18 19 7 18 19 7 28 29 7 38 39	☐ 10 ☐ 20 ☐ 10 ☐ 20 ☐ 30 ☐ 40	Update
ME-100M				Emerg Star 300 Regul Star 320	gency Messag t Address ar Message – t Address te Register – te Register – to Tor	pe 1 1 1 1 1 1 1 1 2 3 3	2 3 1 1 12 13 1 2 3 1 1 12 13 1 1 12 13 1 1 12 13 1 1 22 23 1 1 32 33 1 Register Value	4 5 5 14 5 5 14 5 5 14 5 5 24 25 3 34 35 7 39 0	6 7 7 16 11 6 7 16 17 26 21 36 33	8 9 7 18 19 7 18 19 7 18 19 7 28 29 7 28 29 7 38 39	10 20 10 20 30 40	Update
ME-100M				Emerg Star [300 Star [320 Updal Ad	t Address ar Message		2 3 1 1 12 3 1 2 3 1 1 12 13 1 1 12 13 1 1 12 13 1 1 22 2 3 1 1 32 33 1 Register Value	4 5 7 14 5 7 4 5 7 14 15 7 24 25 7 34 35 7 Je 0	6 7 7 16 17 6 7 16 17 26 27 36 37 36 37	8 9 7 18 19 7 8 9 7 18 19 7 18 19 7 28 29 7 38 39	10 20 20 20 30 40	Update Update Update
ME-100M				Emerg Star [300] Regul Star [320] Updat Ad	gency Messag t Address ar Message	ge 1 1 1 1 1 1 1 1 2 3 3 0	2 3 1 1 12 3 1 2 3 1 1 12 3 1 1 12 13 1 1 12 13 1 1 12 13 1 1 22 2 3 1 1 32 33 1 Register Valu	4 5 5 14 5 5 14 5 5 14 15 7 24 25 7 34 35 7 Je 0	6 7 7 16 17 6 7 16 17 26 27 36 37 36 37	8 9 7 18 19 7 8 9 7 18 19 7 28 29 7 38 39	10 20 10 20 30 40	Update Update
ME-100M				Emerg Star [300 Regul Star [320 Updat Ad	gency Messag t Address ar Message t Address te Register idress 100 te Coil		2 3 7 2 3 1 12 1 1 1 2 3 1 1 2 3 1 1 2 2 3 1 3 2 3 7 Register Value Coil Value	4 5 7 14 5 7 4 5 7 14 15 7 24 25 7 34 35 7 Je 0	6 7 16 17 6 7 16 17 26 27 36 37 	8 9 7 18 19 7 8 9 7 18 19 7 18 19 7 28 29 7 38 39	10 20 10 20 30 40	Update Update Update
ME-100M				Emerg Star [300 Regul Star [320 Updat Ad	t Address ar Message			4 5 5 14 5 5 14 5 5 14 15 7 24 25 7 34 35 7 Je 0 5 Ena	6 7 16 1 7 6 7 16 1 7 26 2 36 3 36 37 5 5 5 5 5 5 5 5 5 5 5 5 5	8 9 7 18 19 7 8 9 7 18 19 7 18 19 7 28 29 7 38 39	☐ 10 ☐ 20 ☐ 20 ☐ 30 ☐ 40	Update Update Update
ME-100M				Emerg Star [300 Regul Star [320 Updat Ad	gency Messag t Address ar Message t Address te Register	ge	2 3 7 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 2 3 1 3 2 3 7 Register Value Coil Value	4 5 5 14 5 5 14 5 5 14 5 5 24 25 5 34 35 7 Je 0 Ena	6 7 16 17 6 7 16 17 26 27 36 37 36 37 ble	8 9 7 18 19 8 9 7 18 19 7 18 19 7 28 29 7 38 39	☐ 10 ☐ 20 ☐ 10 ☐ 20 ☐ 30 ☐ 40	Update Update Update

The message address default is 300, means MODBUS address 00300,



And the Regular message will automatically start from 00320 to 00359.

And the register default address is 40100 (Represent by 100 in the screen) and the coil address is 00100.

For example, you could set "100.21" on float variable 1, which use MODBUS address 40100:

- Update Register											
Address	100	•	Register Value	100.21	Update						

Press **[Update]** button to make it effects. If your network connection has error, the update will be fail with warning dialog box.

Chapter 6 MODBUS protocol Introduction

MODBUS protocol is a widely used open industry control message format. It's could used for read/write single bit data (coil) or multi-byte data (register).

EKAN ME-100M implements MODBUS function 1,3,5,15,16.

6-1 MODBUS frame format (Write Single Coil)

□ Write single coil

Following is setting a single digital coil use function 5, Write single coil (0xxxx) for DO:

[Prefix]

Byte 0: Transaction identifier - copied by server - usually 0

Byte 1: Transaction identifier - copied by server - usually 0

Byte 2: Protocol identifier=0

Byte 3: Protocol identifier=0

Byte 4: Length field (upper byte)=0 (since all messages are smaller than 256)

Byte 5: Length field (lower byte)=number of bytes following

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6
1	2	0	0	0	6



[Request]

Byte 0:	Net ID (Station number)
Byte 1:	FC=05
Byte 2-3:	Reference number, we use address 100 here (Hex 64)
Byte 4:	=FF to turn ON coil, =00 to turn OFF coil
Byte 5:	=00

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
1	5	0	64	255	0

The complete request byte array looks like following:

Prefix				ID	Function	Ad	dress	Value	Pad		
1	2	0	0	0	6(Hex)	1	5 (Hex)	0	64	FF	0

[Response]

- Byte 0: Net ID (Station number)
- Byte 1: FC=05
- Byte 2-3: Reference number
- Byte 4: =FF to turn ON coil, =00 to turn OFF coil (echoed)
- Byte 5: =00

□ Write multiple registers

Setting analog register use function 16 (10 Hex) to write multiple registers (4xxxx) for AO:

6-2 MODBUS frame format (Write Multiple Registers)

[Prefix]

Byte 0: Transaction identifier - copied by server - usually 0

Byte 1: Transaction identifier - copied by server - usually 0

Byte 2: Protocol identifier=0

Byte 3: Protocol identifier=0

Byte 4: Length field (upper byte)=0 (all messages in MODBUS are smaller than 256)

Byte 5: Length field (lower byte)=number of bytes following, in the sample we use 11 bytes (Hex B) for setting single float (2 registers)

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
0	0	0	0	0	В

[Request]

Byte 0: Net ID (Station number)

- Byte 1: FC=10 (hex)
- Byte 2-3: Reference address number
- Byte 4-5: Word count (in this case is 2 words for float)
 - Byte 6: Byte count (B=2 x word count, in this case is B = 4 bytes))



Byte 7-(B+6): Register values (in this case, we used 4 bytes for float. Byte7 to Byte 10)

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8	Byte 9	Byte 10
1	10	0	64	0	2	4	00	00	00	00

The complete request byte array looks like following:

Pref	Prefix					ID	Function	Addr	Address		Word		Float			
0	0	0	0	0	B (Hex)	1	10 (Hex)	0	64	0	2	4	0	0	0	0

[Response]

- Byte 0: Net ID (Station number)
- Byte 1: FC=10 (hex)
- Byte 2-3: Reference number
- Byte 4-5: Word count

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
1	10	0	64	0	2



The complete response byte array will be:

Pref	ix					ID	Function	Address		Word	
0	0	0	0	0	6	1	10 (hex)	0	64 (Hex)	0	2

On the demo project, the following address is used:

	Start Address	End Address	Total Number	Туре	Using MODBUS function Number
Emergency message	00300	00319	20	Boolean	5
Regular Message	00320	00359	40	Boolean	5
Float variable	40100	40126	64	Float	16
Boolean Variable	00100	00131	32	Boolean	5

Chapter 7 Connection with Visual Basic Client (MODBUS TCP)

There is a Visual Basic sample using MODBUS TCP as controlling protocol under CD-ROM's sample folder. You could use Visual Basic 6 to open the project files. All samples comes with source code and project file.

7-1 Trigger Regular message

The regular message will be automatically play when message file finished upload. If you didn't trigger any specific regular or emergency message, the system will automatically display all message on the message play list.

If you want to make a new play list, you could trigger the message you need to make a new play list.

In the sample, regular message address is start from 320 (First 20 messages, from 300 to 319 is reserved for emergency messages). You could check those check box that named after R (for example, R01 means regular message 1) to trigger specific regular message.

7-2 Update variables

There are 2 types of variable in the ModView display:

- 1. Float type variable usually using for analog data display
- 2. Boolean type variable, usually using for digital data display.



Messages in the ModView are usually combining with text and variable. Text usually for static description and the variables are dynamic data that will be updated from the MODBUS device.

□ Update float variable

Float type variable using 2 registers in the ModView (DWORD, 32 bit), usually represent the analog type data. Because float use 2 registers, The address will be all odd or even numbers. For example, if address start from 100, the next address will be 102, and third address will be 104...so on.

You could input the address of the variable, and give a float value, then press **[Update]** button to update the variable in the message. In the sample, the analog variable start from 40100, using MODBUS function call 16 (Hex 10) to modify the float variable.

MoView Visual Basic Sample		×
IP Address 192.168.100.96 Port 502	Connect	
Emergency Message	Regular Message	
1 2 3 4 5		
□ 11 □ 12 □ 13 □ 14 □ 15		
□ 16 □ 17 □ 18 □ 19 □ 20	□ 31 □ 32 □ 33 □ 34 □ 35 □ 36 □ 37 □ 38 □ 39 □ 40	
Update Register Address 100 Register Value 0	Update Coll Address 100 Update Coll Value Enable	
		▲



- 1. Input the variable address (100 in the sample)
- 2. Input the variable value (1.0, for example)
- 3. Press [Update] command button

– Update Register —		
Address	1.0	Update
Register Value	0	

After you update the register value, you will see the new value shows in the message.

□ Update Boolean variable

The coil value is Boolean type variable, usually represent the digital I/O value. You could input the address of the variable, and give a Boolean value. Then press **[Update]** button to update the Boolean variable in the message.

- 1. Input the variable address (100 in the sample)
- 2. Click the chick box to select true or false
- 3. Press [Update] command button

-Update Coil—		
Address	100	Update
Coil Value	Enable	

After you update the coil value, you will see the new value shows in the message.



7-3 Trigger Emergency message

Emergency messages are all high priority messages; it will override the any original message play list. Once the emergency message was triggered, the emergency messages will continuous play until it stopped.

The message format as follow:

- 1. Input the variable address (300 in the sample)
- 2. Click the chick box to select true or false

-Emergency Me Start Address	ssage 300]
🗖 1 🗖 2	3 4	5
□6 □7	8 9	<u> </u>
□ 11 □ 12	□ 13 □ 14	<u> </u>
🗖 16 🥅 17	□ 18 □ 19	20

Once the emergency message is triggered, it will play the message until it switch off. If multiple Messages were triggered, you must switch all emergency messages off in order to switch back original message play list.



Chapter 8 Connect with OPC server

The OPC means "OLE for processing control", an open standard provides open connectivity between different systems. Most OPC server could use MODBUS protocol to control device and update device data. OPC application could control ModView via OPC Server (like free ICPDAS NAPOPC server, here we use OPCsystems OPC server for screen shot).



8-1 Tag configuration

OPC client use tags to mapping device data instead of address. So you must establish the address and tag relationship in the OPC server. OPC are open standard for the device manufacture and the 3rd party software vender. So the interface of the OPC server might looks slight different with each other, but the configuration steps should be very similar.

The OPC tag naming is hierarchy structure. For example, the "IO.Analog.Tag0" may direct to analog IO device's first tag. OPC server will transfer the tag into MODBUS address, and then execute the I/O command.

8-2 Set regular message coil

The message control function of ModView is controlled by 40 continuous coil. Here we use register 00320 to 00359 to set the register. Following is the complete setting step for setting function register.

Because OPC is used 1 based calculation, so it will minus 1 for all MODBUS address, You must use 321 as start address instead 320.

MoView.mbs - Modbus								
Eile Add Edit View License Help Comm. Log								
Hall X BE								
⊡-III ModView100	Name	Туре	Location	Processing	Value	Description		
🗀 AnalogVariable	-⊘-RegMsg001	Coil Output	321					
🗀 DigitalVariable	RegMsg002	Coil Output	322					
- EmergencyMessage	-@RegMsg003	Coil Output	323					
	-@-RegMsg004	Coil Output	324					
	-@-RegMsg005	Coil Output	325		_			
	-@RegMsg006	Coil Output	326			Tog Dropor	tion	
	-@RegMsg007	Coil Output	327			ray Proper	ues	스
	-⊘ RegMsg008	Coil Output	328				r	
	-@RegMsg009	Coil Output	329			Name Reg	gMsg001	OK
	-⊘RegMsg010	Coil Output	330					
	-⊘RegMsg011	Coil Output	331			Description		Cancel
	-@-RegMsg012	Coil Output	332					
	-@RegMsg013	Coil Output	333			Memory Type	Output Coil 📃 💌	
	CRegMsg014	Coil Output	334					
	-⊘ RegMsg015	Coil Output	335			Leasting 201		
	-⊘ RegMsg016	Coil Output	336			Location [521		
	-⊘RegMsg017	Coil Output	337					
	-@-RegMsg018	Coil Output	338					
	-⊘RegMsg019	Coil Output	339			Data Tyme BD	 Number of Bates: 	1
	-⊘ RegMsg020	Coil Output	340			Data Type 1	in diffect of Dytes.	·
	-⊘RegMsg021	Coil Output	341			-Scaling		
	-@RegMsg022	Coil Output	342			Enable		
	-⊘ RegMsg023	Coil Output	343			1 110010	1	
	•					Settings		
Ready				Regula	Messa		1	
Roady				progene	110000			
						Simulation signal	Ramp	-

Then create tags for regular message in the folder.

- 1. Create new tags for coil 00321
- 2. Give tag name
- 3. Set the memory type, Output Coil
- 4. Set the address location
- 5. Set the data type to Bit
- 6. Press OK



8-3 Set float variable register

ModView LED could have 64 register type variables. But you could just set the variable you need in the OPC server.

🐹 MoView.mbs - Modbus		
Eile Add Edit ⊻iew License Help (Comm. Log	
ModView100 AnalogVariable DigitAvriable DigitAvriable RegularMessage RegularMessage	Name Tag1 Tag1 Tag2 Tag3 Tag4	Type Location Processing Value D Reg Output 40101 40103 40103 40103 40103 40103 40103 40107 40107 40109
		Tag Properties
		Name Iag0 OK
l Ready		Description Cancel
· · · · · · · · · · · · · · · · · · ·		Memory Type Output Register
		Location 101
		Data Type FLOAT Number of Bytes: 2
		Scaling Enable Settings
		Simulation signal Ramp

- 1. Create new tags for register 101 (40100 for MODBUS definition)
- 2. Give tag name
- 3. Set the memory type, Register
- 4. Set the address location, 101
- 5. Set the data type to **Float**
- 6. Press [OK] button



8-4 Set Boolean variable coil

The coil variable is Boolean type variable, which means it only could have "True" or "False" value. This type of variable usually map to ON/OFF switch or digital I/O device. The coil variable is start from 00100 in default configuration.

The Boolean variable of ModView is controlled by 32 continuous coils. Following is the complete setting step for setting coil variable.

📓 MoView.mbs - Modbus					_ 🗆	×	
<u>Eile A</u> dd <u>E</u> dit ⊻iew License <u>H</u> elp C	omm. Log						
🖃 📶 ModView100	Name	Type	Location	Processing	Value	D	
🛄 AnalogVariable	-⊘ Taq0	Coil Output	101			_	
	-⊘ Tag1	Coil Output	102			_	
EmergencyMessage	-⊘-Tag2	Coil Output	103			_	
RegularMessage	-Ø-Tag3	Coil Output	104			_	
	-Ø-Tag4	Coil Output	105			_	
	-⊘-Tag5	Coil Output	106			_	
	-⊘ Tag6	Coil Output	107			_	
	-Ø-Tag7	Coil Output	108				
		Tog Dror	ontio	~			V
		Tag Prop	регне	s			<u>^</u>
			In a			_	
		Name	lagu				AO N
	•	Description					Cancel
, Ready		1.7 m	·			_	
·····,		Memory Typ)e	Output C	.01l	•	
		Location	101		1		
					· · · ·		
		Data Type	BIT	•	Number o	f Bytes:	1
		-Scaling-					
		Enable					
		1 11000					
		Settings					
		Simulation si	gnal R	amp			-

- 1. Create new tags for coil 00101
- 2. Give tag name
- 3. Set the memory type, Output Coil
- 4. Set the address location
- 5. Set the data type to **Bit**
- 6. Press [OK] button



8-5 Set emergency message coil

ModView have 20 emergency address, we use 2 emergency messages here. The tag definition is

Then create tags for emergency message in the folder.

🚟 MoView.mbs - Modbus					_	
<u>Eile A</u> dd <u>E</u> dit ⊻iew License <u>H</u> elp Co	omm. Log					
🖃 📶 ModView100	Name	Туре	Location	Processing	Value	
🚞 AnalogVariable	-② Tag001	Coil Output	301			
DigitalVariable	-Ø-Tag002	Coil Output	302			
EmergencyMessage	-@ Tag003	Coil Output	303			
📖 🧰 RegularMessage		Coil Output	304			
	-0-1 aguus	Coll Output	305			
	-2-Taguus	Coil Output	300			
	-0: Tag007	Coil Output	302			
	-@-Tag009	Coil Output	309			
	- Tagl					
	-⊘ _{Tag} Iag	Propertie	es			X
	-O Tagi				— r	
	-⊘-⊤agi Nama	Tag00	1			OK
	-⊘-Taqi ∎ Descr	iption			_ 7	Cancel
, Ready	Mem	ory Type	Output	Coil	- -	
	Locat	ion 301]	1	_	
	Data	Type BIT	•	Number of	f Bytes:	1
		ling Enable Settings				
	Simu	lation signal 🛛	Ramp			-

- 1. Create new tags for coil 00301
- 2. Give tag name
- 3. Set the memory type, Output Coil
- 4. Set the address location
- 5. Set the data type to **Bit**
- 6. Press **[OK]** button



8-6 Create OPC Client

The OPC client communicates with server by OPC protocol. There are many 3rd party software vender provides OPC component for programmer to create OPC clients. Major brand HMI also provides OPC component for communicating with OPC server.

For OPC client with fast scan rate (like 20ms), you could modify the RTU timeout setting in the configuration page. EKAN ME-100M default factory refresh rate (RTU timeout) setting is 50ms. You should use 10ms on EKAN ME-100M on refresh rate 20ms. Here we use the default client comes with OPC server:



- 1. Connect OPC server
- 2, Select tags that need to use, and set the value if needed.

Tag	Value	
ModView100.EmergencyMessage.T.	. Off	
ModView100.DigitalVariable.Tag0	Off	
Mod∀iew100.Analog∀ariable.Tag0	1.1	
	Add Item 🛛 🗙	
	Assess Bath	
	OK OK	
	Item Name Cancel	
	Browse items: Filter: *	
	→ ModView100 Tag1 Ambov/somble Tag1 DigitVinible Tag2 DigitVinible Tag2 EmergencyMessage Tag4 RegularMessage	
	Data Type C Long C Bool C Double C Short C String	



Chapter 9 Connect with InduSoft (HMI/SCADA)

Indusoft is monitor/control software for industry automation. InduSoft could easily integrate application and the help you quickly build up a human machine interface application. ICPDAS WinCon-8000 also provides run-time environment for Indusoft software.



Like most HMI software, Indusoft natively support MODBUS TCP/RTU protocol. You could define tags and mapping to MODBUS slave like EKAN ME-100M. Following is a short introduction about how to use indusoft to connect EKAN ME-100M. You could find the sample in the





9-1 Create Indusoft project and create tags

First we create a empty project and create required tags for control EKAN ME-100M. We create DO for message and DO control. We create a Emergency Message DO variable array, size is 20 Boolean variables.



After you create DO, you could use for later user interface mapping. You could follow same steps to add more tags for trigger regular messages.

9-2 Mapping variables to button

Indusoft provides variety of user interface components to interactive with user. We use a button here to trigger messages. First we use an empty template to put buttons on, and then set the action property of button.

- Switch to screen view, then add button in the Indusoft workspace. And use the mouse icon to change the dynamic property to [On Down]. Mappping tag to EmgDO[0].
- 2. When press, inverse current state by using expression **Not EmgDO[0]**





9-3 Mapping variables with MODBUS TCP

The third part is to mapping button to the MODBUS TCP address, we use following setting for Emergency DO setting. First we switch to comm page. Then select the MOTCP (MODBUS RTU protocol via MODBUS TCP)

Workspace	Communication Drivers	
3: MODBUS to AO 4: AO to MODBUS 4: AO to MODBUS 5: Regular Message DO OPC TCP/IP DDE	Available drivers: DLL Description Image: Constraint of the second seco	
	Selected drivers: DLL Description MOTCP MODBUS Protocol RTU via TCP/IP (NT-2000-9x-CE/x86/	
📓 Data 🛗 Grap 📑 Tasl s 🖉 Comm	OK Cancel	

Next, we create mapping between Tag and MODBUS address.

Description:		
Emergency DO		Increase priority
Read Trigger:	Enable Read when Idle: Read Compl	leted: Read Status:
Write Trigger:	Enable Write on Tag Change: Write Cor	mpleted: Write Status:
Station: 192.168.100.97:502:1	Header: CX:0	Min: Min: Max:
	Tag Name	Address
1	EmgDO[0]	301
2	EmgDO[1]	302
3	EmgDO[2]	303
4	EmgDO[3]	304
5	EmgDO[4]	305
, 6	EmqDO[5]	306



Station setting: 192.168.100.95:502:1 Header use (MODBUS function 5): 0x:0 Enable write on tag change: 1

After, setting, You could run the sample application.



You could find the complete sample under **sample/InduSoft** folder in the CD-ROM.



Chapter 10 Connect with IsaGRAF (SoftPLC)

ISaGRAF is provides popular standard Industry Automation control programming method. Includes SD, FBD, SI, IL...programming language. You could use ISaGRAF to generate controlling firmware, and then download to the 7188EG or similar controlling firmware.



I7188 EG could be used as MODBUS master device to control MODBUS slave device on the RS-485 network. Client PC could act as monitor console linked via Ethernet.

Detailed information about ISaFRAF and I7188EG module, you could refer to ICPDAS web site for more information.



10-1 Set 7188EG as MODBUS master device

You could set 7188 EG as MODBUS by using the mbus component. You must install the "Mbus" library before you adding the MODBUS support. You could refer 7188 EG manual or ISaGRAF manual for more information.



After you set the I7188EG as MODBUS master device, You could using MODBUS related function block to control MODBUS slave like EKAN ME-100M.



10-2 Using function block

We use ISaGRAF to control the coil variable and trigger messages on the EKAN ME-100M. We have to create 2 different types of variable to mapping with MODBUS function block.

 $\hfill\square$ Boolean variable for the trigger message, and control function

block's state

□ Integer variables for MODBUS address and ID setting.

📏 ISaGRAF - N	MODVIEW			
<u>Eile E</u> dit <u>T</u> ools	Options <u>H</u> e			
	🙆 🔾 🖸	🚱 🗏 😤 🖪	🤞 📉 🖀 👘	
Booleans Integers/Re	als Timers Me	ssages FB instan	ces Defined words	
Name	Attrib.	Addr. Comm	ent	
B001	[internal]	0000		
B002	[internal]	0000		
B003	[internal]	ISaGRAF -	MODVIEW1 -	Global integers/reals
8004	(internal) Eile	e <u>E</u> dit <u>T</u> ools	<u>O</u> ptions <u>H</u> elp	
runn	[internal]		🖴 🔾 🕓 🖌	🖷 😽 🗈 🤞 📉 🖴
	Bo	oleans Integers/F	Reals Timers Messag	ges FB instances Defined words
	Na	me	Attrib. Ad	ldr. Comment
)	[internal,integer] 00	00
	N	0_W	[internal,integer][00	00
	м	od_Adr	[internal,integer] 00	00
		—		
				·

Following is address setting examples:

Integer/Real Variable				
Name: Mod_Adr		Netwo	rk Address:	
Comment:				
Unit:		Conversion:	(none)	-
Attributes () Internal () Input () Output () Const <u>a</u> nt	Format © Integer © <u>R</u> eal Initial value: [Rgtain	(standard) 301		Store Cancel Next Previous Extended



10-3 MODBUS function block on ISaGRAF

There are 4 MODBUS function blocks support by Mbus library:

Mbus_b_r : Read 8 bits (Boolean) from MODBUS device.

Mbus_b_w: Writes 1 to 4 bits to MODBUS device

Mbus_n_r : Read 8 words (short integers) from MODBUS device

Mbus_n_w: Writes 1 to 4 words to MODBUS device

Following is a sample using Mbus_b_w to write 4 bits on address 00301. You could compiler this program, and then download to I7188EG firmware to see the effects.



This sample is under sample/ISaGRAF folder, you could refer to sample and 7188EG information on ICPDAS website.

About eSoftsystem Corp.

eSoftsystem Technology Corp. is the most innovative embedded solution provider. It has built up a team of world experts in embedded software and hardware systems to provide customer high-performance and high-quality embedded solution product and services.