

分类/Classification	🗆 tDS	⊠ tGW	□ PETL/tET/t	PET 🗖 DS/PDS/PF	PDS 🛛 tM-	□ tM-752N	
	□ I/O Card		U VXC Card	□ VxComm	☑ Other (LabVIEW)		
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## 问: 如何让 LabVIEW 搭配使用 tGW-700 Modbus TCP/RTU 网关?

## 答:请依照下列步骤来执行:

**步骤 1:**执行 eSearch Utility 来搜寻 tGW-700 系列模块。

步骤 2: 配置正确有效的网络设定至 tGW-700 系列模块。



🦪 eSearch U	ltility [ v1.0.8	, Mar.22, 2013	]			
<u>File Server Iools</u>						
Name	Alias	IP Address	Sub-net Mask	Gateway	MAC Address	DHCP
tG₩-715	Tiny	10.0.8.22	255.255.255.0	10.0.8.254	00:0d:e0:80:0a:78	ON
Sear	ch Servers	Configurati	ion (UDP)	Web	Exit	
Status						11

**步骤 3:** 按 eSearch Utility 中的"Web"按钮,将显示登入画面。请在"Login password"字段输入密码 (第一次登入的用户请输入原厂默认的密码 admin),然后单击"Submit"按钮来进入网页服务器。

ICP	Tiny Modbus Gateway (tGW-71x)
The system is log	Home   Port1   Network   Filter   Monitor   Password   Logout gged out. onfiguration, please type password in the following field.
Login password	Submit
Note: This web co If the web configur	nfiguration requires JavaScript enabled in your browser (Firefox, IE). ation does not work, please check the JavaScript settings first.
When using IE, ple Menu items: Tools	ease disable its cache as follows. / Internet Options / General / Temporary Internet Files / Settings / Every visit to the page



步骤 4: 单击 "Port1" 标签链接进入设定页面。

步骤 5: 在 Port Settings 下,请依据 Modbus 设备 (如, M-7022) 来选择适当的 Baud Rate、Data Format 及 Modbus Protocol...等设定(如, 9600、8N1、Modbus RTU)。

Tiny Modbus G	ateway (tGW-71x)	
Hone Port1 Detwork	Setting   Filter   Monitor   Password   Logout	
Settings:		
Port Settings	Current	Updetod
Baud Rate (bps)	9600	9600 🔻 bits/S
Data Size (bits)	8	8 🔹 bits/character
Parity	None	None 🔻
Stop Bits (bits)	1	1 •
Slave Timeout (ms)	300	300 (Default: 300)
Char Timeout (bytes)	4	4 (4 ~ 15, Default: 4)
Silent Time (ms)	0	0 (0, 10, 20 65530, Default: 0)
Read Cache (ms)	980	980 (10, 20 65530, Disable: 0)
Local TCP Port	502	502 (Default: 502)
TCP Timeout (seconds)	180	180(1~65535, Default: 180, Disable: 0)
Modbus Protocol	Modbus RTU	Modbus RTU 🔹
Pair-Connection Settings (Master/Slave Mode)	Current	Ираацец
Server Mode	Server	Server • (Server=Slave, Client=Master)
Modbus Protocol	TCP	TCP V
Remote Server IP	Disabled	10 . 0 . 8 . 244
Remote TCP Port	Disabled	502
RTU Slave ID (1~247)	0	0 (0: Bypass, No check)
TCP Slave ID (1~247)	jo 🌔	D (0: Same as RTU)

**步骤 6:** 下载 NI MODBUS Library 压缩文件,并且解压缩此档案至暂存的文件夹中。 NI MODBUS Library 可至 National Instruments (NI) 公司网站下载: <u>http://www.ni.com/example/29756/en/</u>





- 步骤 7: 执行 LabVIEW。
- **步骤 8:** 在程序区 (Block Diagram) 右键单击来开启函数面板 (Functions Palette)。 (或是从 "<u>V</u>iew" 功能选单中点选 "<u>F</u>unction Palette" 项目,即可开启。) 步骤 9: 在函数面板 (Functions Palette)中,点选 "Select a VI..." 项目。

🖪 Un	itled 1 Front Panel	
File	🖪 Untitled 1 Block Diagram	
	File Edit Yiew Project Operate Iools Window Help   Image: Second	▼ 2 ?
	1 在空白处点击右键	
	Control & Simulation	Search
	Fuzzy FID Fuzzy Logic	
	Express Favorites User Libraries	
	Select a VI	×
<		

步骤 10: 在 "Select the VI to Open"配置框中,点选 "NI Modbus.llb",再按 "OK" 按钮。





步骤 11: 点选"MB Ethernet Master Query.vi"后,再按"OK"按钮。

Select the VI to Open			
NI Modbus.llb	<b>~</b>	E:	~
Image: MB Ethemet Is Address Valid.vi   Image: MB Ethemet Master Query (poly).vi   Image: MB Ethemet Master Query Read Coils (poly).vi   Image: MB Ethemet Master Query Read Discrete Inputs (poly).vi   Image: MB Ethemet Master Query Read Exception Status (poly).vi   Image: MB Ethemet Master Query Read Exception Status (poly).vi   Image: MB Ethemet Master Query Read Input Registers (poly).vi   Image: MB Ethemet Master Query Read Input Registers (poly).vi   Image: MB Ethemet Master Query Write Multiple Coils (poly).vi   Image: MB Ethemet Master Query Write Multiple Registers (poly).vi   Image: MB Ethemet Master Query Write Single Coil (poly).vi   Image: MB Ethemet Master Query Write Single Coil (poly).vi   Image: MB Ethemet Master Query.vi   Image: MB Ethemet Receive vi   Image: MB Ethemet RefCount.vi   Image: MB Ethemet Slave Communication.vi   Image: MB Ethemet Slave Communication.vi   Image: MB Ethemet Slave Demon - Single Port - Multiple Connections 2 vi   MB Ethemet Master Query.vi   All LabVIEW Files		2 OK Cancel Help	

步骤 12: 将 "MB Ethernet Master Query.vi"的图标 icon 放至程序区 (Block Diagram)中,此时您已顺利的叫出函式,便可开始编译程序。您也可开启 Help 窗口来查看函式说明。

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E Unt	Iteld 1 Front Panel *   Image: State of the st	Context Help MB Ethernet Master Query.vi Modbus Data Unit In TCP Connection Refnum in Modbus Command Use MODBUS Data Unit? Use MODBUS Data Unit? MBAP Header Timeout	× · · · · · · · · · · · · · · · · · · ·
	<del>د پېر</del> ه ک		



步骤 13:从 PC 端发送 Modbus TCP 命令程序范例:

🗈 Untitled 1 Block Diagram *	
File Edit View Project Operate Tools Window Help	
<u>}</u>	^
IP Address Modbus Command Port UIG MBAP Header COL	III
	~
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**步骤 14:**执行 Modbus TCP 范例程序如下:

- 1. 输入 tGW-700 的 IP Address 及 TCP Port 。
- 2. 3. 依据您远程 Modbus 设备 (如, M-7022) 来输入 Net ID 及 Modbus Command。
- 4. 单击 "Run" 按钮来开始测式。
- 5. 确认 "error out" 对话框中显示的 "status" 讯息是正常的。
- 6. 确认 "Response Data" 字段中的响应消息是正确的。

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File Edit View Project Operate	: <u>T</u> ools <u>W</u> indow <u>H</u> elp plication Font <b>v P_v</b> -mv ﷺv &v . Search Q ?	
IP Address Port 10.0.8.35 502 MBAP Header	Modbus Command error out	
Transaction ID #0 Unit ID #1 2 NetID	Function Code Read Holding Registers Starting Address D Quantity Data Discrete D Discrete	
Response Data		
<		✓