

IQ840

DIN Rail Serial data / Modbus RTU/ASCII to Ethernet Gateway

Manual – English 1.00



Introduction

The IQ840 is a DIN Rail mount Serial data to Ethernet gateway. The IQ840 supports Modbus RTU/ASCII to Modbus TCP/IP or UDP as well as it supports Modbus over TCP/IP or UDP. The IQ840 can also be used as a serial data to TCP/IP or UDP gateway.

The IQ840 has both a RS232 or RS485 serial interface which is jumper selectable. It also has a serial data transmit and receive LED for easy diagnostics. The Ethernet connection is via the RJ45 port and has a link and data LED.

The IQ840 can be configured either via serial AT commands or via a web configuration page.

The IQ840 features a 8-30VDC switch mode power supply with built in 33V over voltage and reverse voltage protection and is housed in a space saving DIN rail mount enclosure which is very easy to install.

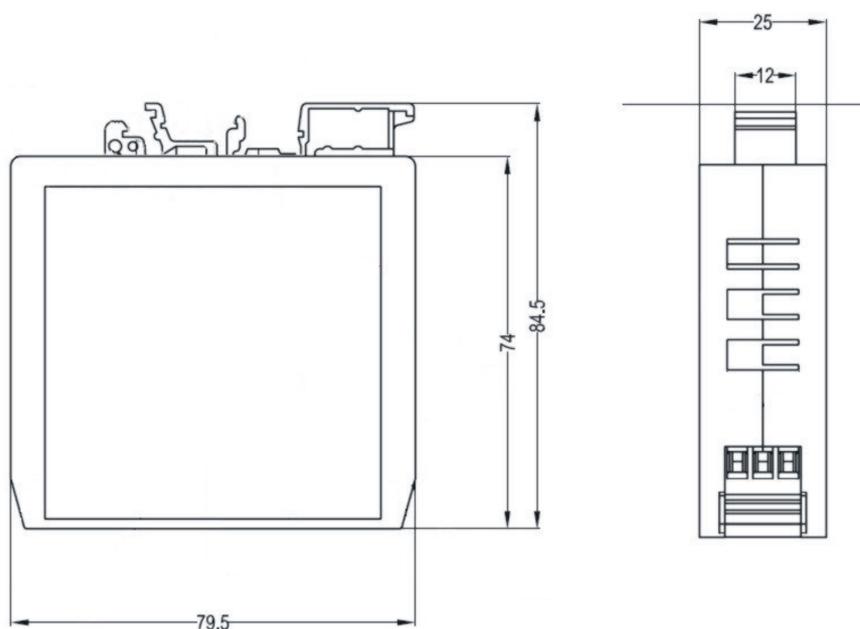
1 Features

- RS232 or RS485 serial interface
- 10/100Mbps Ethernet interface
- Supports Modbus RTU/ASCII to Modbus TCP/IP or UDP
- Supports Modbus over TCP/IP or UDP
- Flexible data packet condition for the serial interface
- Supports TCP server, TCP client and UDP operating modes
- Supports NetBIOS for easy access of web configuration page
- Supports two configuration methods: serial AT command and web page
- Support “Keep-Alive” to guarantee TCP connection
- 8-30VDC switch mode power supply with built in 33V over voltage and reverse voltage protection
- Extremely easy to install
- Space saving DIN rail mount enclosure
- 1 Year Warranty

2 Specifications

Serial interface	
Interface	RS232 or RS485 (Jumper selectable)
RS485 termination resistor	120Ohms (Jumper selectable)
Baud Rate	From 1.2Kbps to 1.152Mbps with 16 common values
Data bit	7 or 8
Stop bit	1 or 2
Parity	None, Even, Odd
Flow control	None, CTS/RTS
Status LEDES	Transmit and Receive
Protocols	Serial data Modbus RTU Modbus ASCII
Ethernet interface	
Connector	RJ45
Status LEDES	Link and Data
Speed	10/100Mbps
Electrical	
Supply Voltage	8 to 30VDC switch mode power supply with built in 33V over voltage and reverse voltage protection
Supply Current	Typically 100mA @ 12Vdc
Environmental:	
Operating temperature	-40°C to 80°C (-40°F to 176°F)
Storage temperature	-40°C to 80°C (-40°F to 176°F)
Operating and storage humidity	<85% RH non-condensing
Enclosure:	
Enclosure Dimensions	Din Rail 79.5x74x25mm (LxHxD) (3.13"x2.91"x0.98")
Enclosure Material	Nylon
Enclosure Color	Green

3 Dimensions



4 Installation

4.1 Connection Diagram

Connect the IQ840 as follows:

Side connectors on DIN rail enclosure:

- Pin 1: 8-30VDC (Power)
- Pin 2: Ground (Power)
- Pin 3: RS232 TXD (Output from the IQ840)
- Pin 4: RS232 RXD (Input to the IQ840)
- Pin 5: RS232 RTS / RS485 D+ (B)
- Pin 6: RS232 CTS / RS485 D- (A)

D9 Connector:

- Pin 2: RS232 TXD (Output from the IQ840)
- Pin 3: RS232 RXD (Input to the IQ840)
- Pin 7: RS232 RTS
- Pin 8: RS232 CTS
- Pin 5: Ground (Power)

4.2 Status LEDs

5 LEDs provide status indication.

Red LED

On indicates the IQ840 has power

Orange LED (Serial data)

On when transmitting serial data

Green LED (Serial data)

On when receiving serial data

Yellow LED (RJ45 Connector)

Ethernet Link indicator

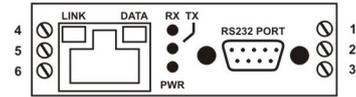
Green LED (RJ45 Connector)

Ethernet data indicator

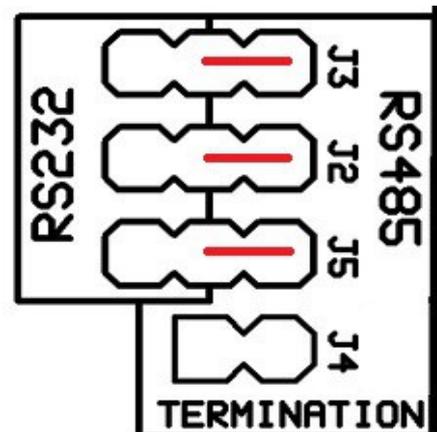
4.3 RS485 Communication

Jumpers J2, J3 & J5 must be on the RS485 side as in the adjacent diagram.

The IQ840 includes an on-board termination resistor which can be selected by linking J4 on the PCB inside the unit. The termination resistor is 120 Ohms.



- Pin 1: POWER (8-30VDC)
- Pin 2: GROUND
- Pin 3: RS232 TXD
- Pin 4: RS232 RXD
- Pin 5: RS232 RTS RS485 D+ (B)
- Pin 6: RS232 CTS RS485 D- (A)



5 Factory reset

The IQ840 can be restored to factory defaults either by inserting the DEFAULT J1 jumper on the PCB for 3 seconds, via serial AT commands or via the configuration web page.

6 Operating modes

The IQ840 supports TCP server, TCP client, UDP and Modbus modes. The following demonstrate these operating modes.

6.1 TCP Server Mode

In TCP server mode, the IQ840 listens on a local port and waiting for the connection from a TCP client. They can start communication with each other after link established.

6.2 TCP Client Mode

In TCP client mode, the IQ840 connects to a preset TCP server. If failure to connect, it can be configured to re-connect continuously. They can start communication with each other after the link has been established.

6.3 UDP Mode

In UDP mode, the IQ840 acts as an UDP peer to send data to another preset UDP peer. The IQ840 can also receive data from other UDP peers.

6.4 Modbus Mode

In Modbus mode, the IQ840 acts as a bridge between Modbus RTU/ASCII protocols to Modbus over TCP/UDP protocols. The IQ840 also supports Modbus over TCP/UDP communication. **THE MODBUS FUNCTION IS ONLY AVAILABLE UNDER "DATA PASS-THROUGH MODE". This can be changed under the Basic Settings|Socket setting.**

Modbus RTU/ASCII to Modbus TCP/UDP

The Modbus mode must be enabled and the desired modbus protocol must be selected under the basic settings in the web configuration page.

Modbus RTU/ASCII over TCP/UDP

The Modbus mode must be disabled under the basic settings in the web configuration page. In this mode the IQ840 acts as a serial to TCP/UDP gateway.

7 Configuration

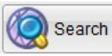
7.1 PC Program configuration

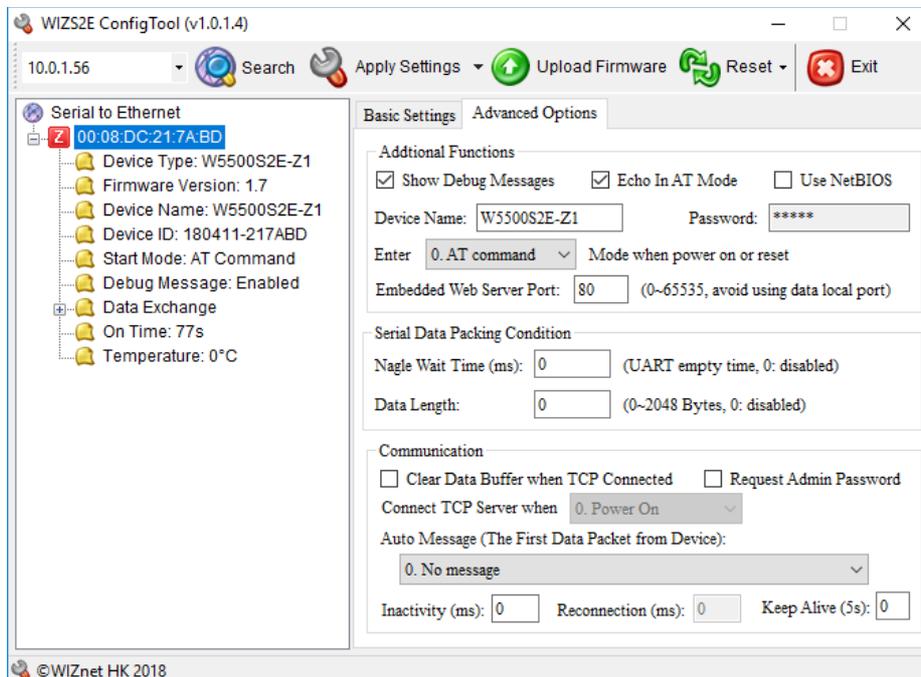
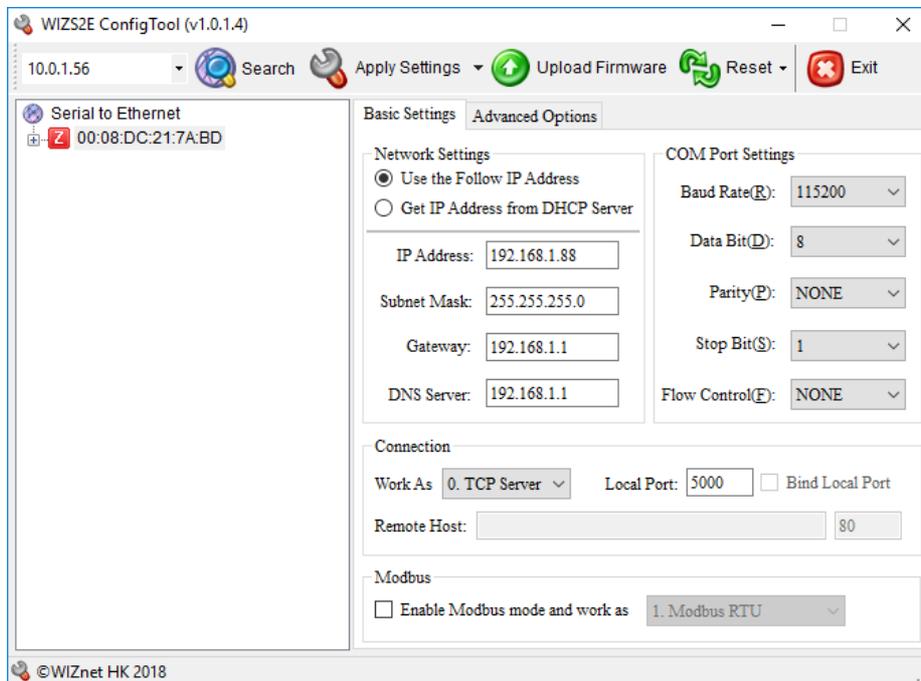
The IQ840 can be configured by connecting the IQ840 to your PC via an ethernet cable.

Download and install the wizs2e config tool.

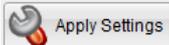
www.infiniteq.co.za/software/Wizs2eConfigTool.zip

7.1.1 Reading the IQ840 information

When starting the ConfigTool or clicking the  button, WIZS2E ConfigTool will search all IQ840 units that have connected in the same LAN. Figure below shows the search result with one module in the network. By selecting the MAC address in the list, you can read and configure all the parameters of this module.



7.1.2 Modify the device settings

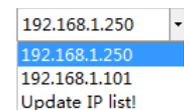
If there is any updated parameter, please click  button to save your configuration and restart.

7.1.3 Reset the module



First click the “Reset” button and then to click the “Reset Now!” button to reset the module without saving any setting

7.1.4 Switching PC network interface



If the PC has more than one network interface, user can select the network interface which connecting to the module. By selecting “Update IP list!” the interface list will be refreshed.

7.2 Web configuration

7.2.1 Login page

At the address field of the browser, type the IP address of the IQ840. The default IP address of **192.168.1.88**. The default password is **“admin”**.

7.2.2 Device view

Device View	Product Information
Basic Settings	Device Type: W5500S2E-S1
Advanced Options	Device Name: W5500S2E-S1
Firmware	Serial Number: 20170927-111213
Management	Firmware Version: 2.2
About Us	Temperature: 39°C
	Run Time: 927 seconds
	Serial Rx: 0
	Serial Tx: 0
	Network Information
	DHCP: OFF
	IP Address: 192.168.1.88
	Subnet: 255.255.255.0
	Gateway: 192.168.1.1
	DNS Server: 114.114.114.114
	Socket Information
	Mode: TCP Server
	Local Port: 5000
	Remote Host: 192.168.1.99
	Remote Port: 5000
	UART Information
	Baud Rate: 115200
	Data Bit: 8
	Parity: NONE
	Stop Bit: 1
	Flow Control: NONE

7.2.3 Basic Settings

The figure below shows the IQ840 basic settings page. It separates into four sections. On each screen, you may need to click “Save Settings” before you move onto the next screen. After you’ve done that, you may click “Reset” to reset the module for the settings to be applied. Please know that the session time for the IQ840 webserver is 5 minutes. After 5 minutes of inactivity, re-login is required.

Device View	Network Setting	
Basic Settings	MAC Address:	<input type="text" value="00:08:DC:21:7A:BD"/>
Advanced Options	Use DHCP	<input checked="" type="checkbox"/>
Firmware	IP Address:	<input type="text" value="192.168.1.88"/>
Management	Subnet Mask:	<input type="text" value="255.255.255.0"/>
About Us	Gateway:	<input type="text" value="192.168.1.1"/>
	DNS Server:	<input type="text" value="192.168.1.1"/>
	Socket Setting	
	Start Mode:	<input type="text" value="AT Command Mode"/>
	Socket Type:	<input type="text" value="TCP Server"/>
	Remote Host:	<input type="text"/>
	Remote Port:	<input type="text" value="5000"/>
	Local Port:	<input type="text" value="5000"/>
	Bind Local Port	<input type="checkbox"/>
	Modbus option	
	Enable Modbus Mode	<input type="checkbox"/>
	Select Modbus Mode:	<input type="text" value="Modbus RTU"/>
	UART Setting	
	Baud Rate:	<input type="text" value="115200"/>
	Data Bit:	<input type="text" value="8"/>
	Parity:	<input type="text" value="NONE"/>
	Stop Bit:	<input type="text" value="1"/>
	Flow Control:	<input type="text" value="NONE"/>
	<input type="button" value="Save Settings"/> <input type="button" value="Reset"/>	

Network Setting

Setting	Description	Default
MAC Address	MAC address of the module	Not configurable
Use DHCP	DHCP mode option	Disable (uncheck)
IP address	IP address of the module	192.168.1.88
Subnet Mask	Subnet Mask	255.255.255.0
Gateway	Gateway	192.168.1.1
DNS Server	DNS server IP address	114.114.114.114

Socket Setting

Setting	Description	Default
Start mode	"AT Command Mode" or "Data pass-through mode"	"AT Command Mode"
Socket Type	"TCP Server", "TCP Client" or "UDP mode"	"TCP Server"
Remote Host	Remote host IP address or domain name	192.168.1.99
Remote Port	Remote host port number	5000
Local Port	Local port number (0~65535; avoid used port)	5000
Bind Local Port	Only valid in TCP client mode	Disable (uncheck)

Modbus option

Setting	Description	Default
Enable Modbus Mode	Enable Modbus Mode function	Disable
Select Modbus Mode	"Modbus RTU" or "Modbus ASCII"	"Modbus RTU"

UART Setting

Setting	Description	Default
Baud Rate	1200bps ~ 1,152,000bps	115,200
Data Bit	7 or 8 bits	8
Parity	NONE, ODD or EVEN	NONE
Stop Bit	1 or 2 bits	1
Flow Control	NONE or "CTS/RTS mode"	NONE

Save Settings: Click to save all these settings

Reset: Click to Restart (Need to click "Save Settings" to apply the setting)

7.2.4 Advance Options

Figure below shows the advance settings page of IQ840

Device View	Parameter Setting	
Basic Settings	Device Name:	<input type="text" value="W5500S2E-Z1"/>
Advanced Options	Enable NETBIOS	<input type="checkbox"/>
Firmware	HTTP Port:	<input type="text" value="80"/>
Management	Data Packing Size(byte):	<input type="text" value="0"/>
About Us	Data Packing Time(ms):	<input type="text" value="0"/>
	Reconnection Time(ms):	<input type="text" value="0"/>
	Inactivity Time(ms):	<input type="text" value="0"/>
	Keep Alive Time(5s):	<input type="text" value="0"/>
	Verify the Connection:	<input type="text" value="No"/>
	Send Hello Message:	<input type="text" value="None"/>
	Connection Condition:	<input type="text" value="Connect Socket after Power On"/>
	Clear Buffer if Connected	<input type="checkbox"/>
	Enable Debug Message	<input checked="" type="checkbox"/>
	Enable AT Echo	<input checked="" type="checkbox"/>
	<input type="button" value="Save Settings"/> <input type="button" value="Reset"/>	

Device Name: The module name, the user could make its own definition, it could be any characters. Maximum 15 bytes

Enable NETBIOS: Check this box to activate this feature, default: disable; if activated, the user could type the device name (case insensitive) in the browser to login to the webserver of this module.

HTTP Port: IQ840 web server port number, default: 80; value range is 0 to 65535. If the port wasn't set to 80, then need to input the port at the end of the IP address. For example: 192.168.1.88:8000.

Note: If the IQ840 works in TCP server mode, HTTP port must not be set to the same as the local port of the module.

Data Packing Size (byte): Data packaging length, default: 0 (disable), maximum Dimension: 2048 bytes.

Data Packing Time (ms): Waiting interval of data packet, default: 0 (disable), maximum size is 2048 bytes.

Reconnection Time (ms): Reconnection interval, only effective in TCP client mode, default: 0 (instant reconnection), value range: 0 to 60000, unit: ms

Inactivity Time (ms): Set the Inactivity timeout, only effective in TCP modes, value range: 0 ~ 60000, unit: ms, default: 0 (disable)

Keep Alive Time (5s): Set the Keep alive timer, only effective in TCP modes, value range: 0 ~ 65536, unit: 5s; default: 0 (disable)

Verify the Connection: When the user created a communication in TCP and this command was enabled, the module requires a password confirmation from the Ethernet side. If the password is wrong, it requires re-entering password until it receives a correct password. Default: No (disable)

Send Hello Message: Define message sent when TCP connection succeeds. Selections includes: "None", "Send Device Name", "Send MAC Address" or "Send IP Address". Default: "None" (disable)

Connection Condition: In TCP client mode, this function can set as "Connect socket after power up" (default) or "Connect socket after UART received data"

Clear Buffer if Connect: Data may be left in the serial buffer in case of disconnection. Enable this command clears the buffer when establishing TCP connection. Default: uncheck (disable)

Debug Message Enable: This will enable debug message sending to the serial interface. Thus, this option may help users more easily through serial terminal software manually. Default: checked (enable)

AT Echo Enable: Echo means the IQ840 could directly return the input values to the serial interface. Thus, this option may help some users working more easily through serial terminal software. However, this may cause trouble if the serial is connected to an embedded system. Turning off this function may help. Default: checked (enable)

7.2.5 Management

Clicking “Management” to get into device management page as figure below, this page contains 2 sections: Password Settings and Management

Device View	Password Setting	
Basic Settings	Old Password:	<input type="text"/>
Advanced Options	New Password:	<input type="text"/>
Firmware	Confirm Password:	<input type="text"/> <input type="button" value="Set"/>
Management	Management	
About Us	Factory Default:	<input type="button" value="Default"/>
	Reset Device:	<input type="button" value="Reset"/>
	Logout:	<input type="button" value="Logout"/>

Password Setting

Old Password: the old password, default: admin

New Password: Enter new password. Maximum for 15 bytes. It must be numbers, alphabets or the combination of both. It does not accept blank as input value.

Confirm Password: Re-enter the new password

Set: Submit button for renewing password

Management

Factory Default: factory reset button, pressing this button will activate factory reset procedure. It shows a prompt window for re-confirmation is procedure, please click “OK” for factory reset procedure and back to login page.

Reset Device: Reset the module

Logout: Logout back to the login page

7.3 AT Command configuration

7.3.1 Entering AT command Mode

The IQ840 has two modes, “AT command mode” and “Data pass-through mode”.

In “AT command mode”, the IQ840 is waiting for the AT Commands from the serial port. Different settings can be set by the serial terminal software. Note: The existing connections will be closed when entering “AT command mode”. The “AT command mode” is working correctly if the user gets a response of “OK\r\n” when sending “AT\r\n”.

In “Data pass-through mode”, the IQ840 will not detect any AT commands sending to the serial port. All messages received by the serial port will be regarded as data except the special “+++” code, which when received will switch the IQ840 into AT command mode.

Note:”+++”code rules. The user needs to send “+” symbol continuously 3 times through the serial port with 1 second time gap both before and after the “+++”.

7.3.2 AT command list

AT setting command is used for configure or read the parameter of the IQ840. AT commands has attribute R: Read, W: Set, R/W: Read and set.

Type	Command	Function	Attribute	Max length	Parameters
Control command	AT	Terminal check	R	-	-
	ECHO	Enable or disable echoing	R/W	1	0: Echo off 1: Echo on (default)
	DEBUGMSGEN	Debug message	R/W	1	0: Disable 1: Enable (default)
	NAME	Module name	R/W	15	Must be numbers, alphabets or the combination of both
	PASS	Module password	R/W	15	Must be numbers, alphabets or the combination of both (Default: admin)
	DEFAULT	Reset to factory default	W	15	Module password
	RESET	Save and restart module	W	15	Reset if parameter equals to password
	EXIT	Exit AT command	W	-	-
	SAVE	Save settings	W	-	-

Type	Command	Function	Attribute	Max length	Parameters
Module settings command	START_MODE	Start mode	R/W	1	0: AT command mode (default) 1: Data pass-through mode
	C1_OP	Operating mode	R/W	1	0: TCP server mode (default) 1: TCP client mode 2: UDP mode 16: Modbus RTU-TCP Server 17: Modbus RTU-TCP Client 18: Modbus RTU-UDP 32: Modbus ASCII-TCP Server 33: Modbus ASCII-TCP Client 34: Modbus ASCII-UDP 48: Modbus RTU over TCP Server 49: Modbus RTU over TCP Client 50: Modbus RTU over UDP 64: Modbus ASCII over TCP Server 65: Modbus ASCII over TCP Client 66: Modbus ASCII over UDP (The Modbus functions are supported by firmware version is 2.3 or above)
	IP_MODE	IP configuration method	R/W	1	0: Static IP mode (default) 1: DHCP mode
	IP	IP address	R/W	15	Default: 192.168.1.88
	MARK	Subnet mask	R/W	15	Default: 255.255.255.0
	GATEWAY	Gateway	R/W	15	Default: 192.168.1.1
	DNS	DNS server address	R/W	15	Default: 114.114.114.114
	C1_PORT	Local port number	R/W	5	1 ~ 65,535; Default: 5000
	C1_BIND	Local port binding	R/W	1	Valid only in TCP Client mode: 0: Disable (default) 1: Enable
	DNSEN	DNS for remote host	R/W	1	0: Disable (default) 1: Enable
	C1_CLI_IP1	Remote host IP address	R/W	15	Default: 192.168.1.99
	C1_CLI_PP1	Remote host port number	R/W	5	1 ~ 65,535; Default: 5000
	DOMAIN	Remote host name	R/W	32	Default: www.iwiznet.cn
	RECONTIME	Reconnection interval	R/W	5	Valid only in TCP client mode Value range: 0~60000; Unit: ms Default: 0 (reconnect immediately)
NETBIOS	NetBIOS	R/W	1	0: Disable (default) 1: Enable	

Type	Command	Function	Attribute	Max length	Parameters
Management command	C1_SEND_NUM	Serial sent byte	R	-	Range: 0 ~ 4,294,967,295
	C1_RCV_NUM	Serial received byte	R	-	Range: 0 ~ 4,294,967,295
	NETSEND	Network sent byte	R	-	Range: 0 ~ 4,294,967,295
	NETRCV	Network received byte	R	-	Range: 0 ~ 4,294,967,295
	PRE	List preset values	R	-	-
	LIST	List all commands	R	-	-
	RUNTIME	Module uptime	R	-	-
	VER	Firmware version	R	-	-
	MAC	MAC address	R	-	-
	SN	Serial number	R	-	-
	TYPE	Module P/N	R	-	-
WEB_PORT	Web configuration port number	R/W	5	1 ~ 65,535; Default: 80	

7.3.3 TCP Server mode script example

```

AT\r\n
AT+DEBUGMSGEN=0\r\n
AT+ECHO=0\r\n
AT+START_MODE=1\r\n
AT+C1_OP=0\r\n
AT+IP_MODE=0\r\n
AT+IP=192.168.1.88\r\n
AT+C1_PORT=5000\r\n
AT+RESET=admin\r\n
//Terminal check
//Disable debug message
//Echo on
//Configure start mode into "Data pass-through mode"
//Configure into TCP server mode
//Set into static IP mode
//Set local IP address
//Set the local port number
//Save the setting, restarting enter data pass-through mode

```

8 Testing the IQ840 in Microsoft Windows

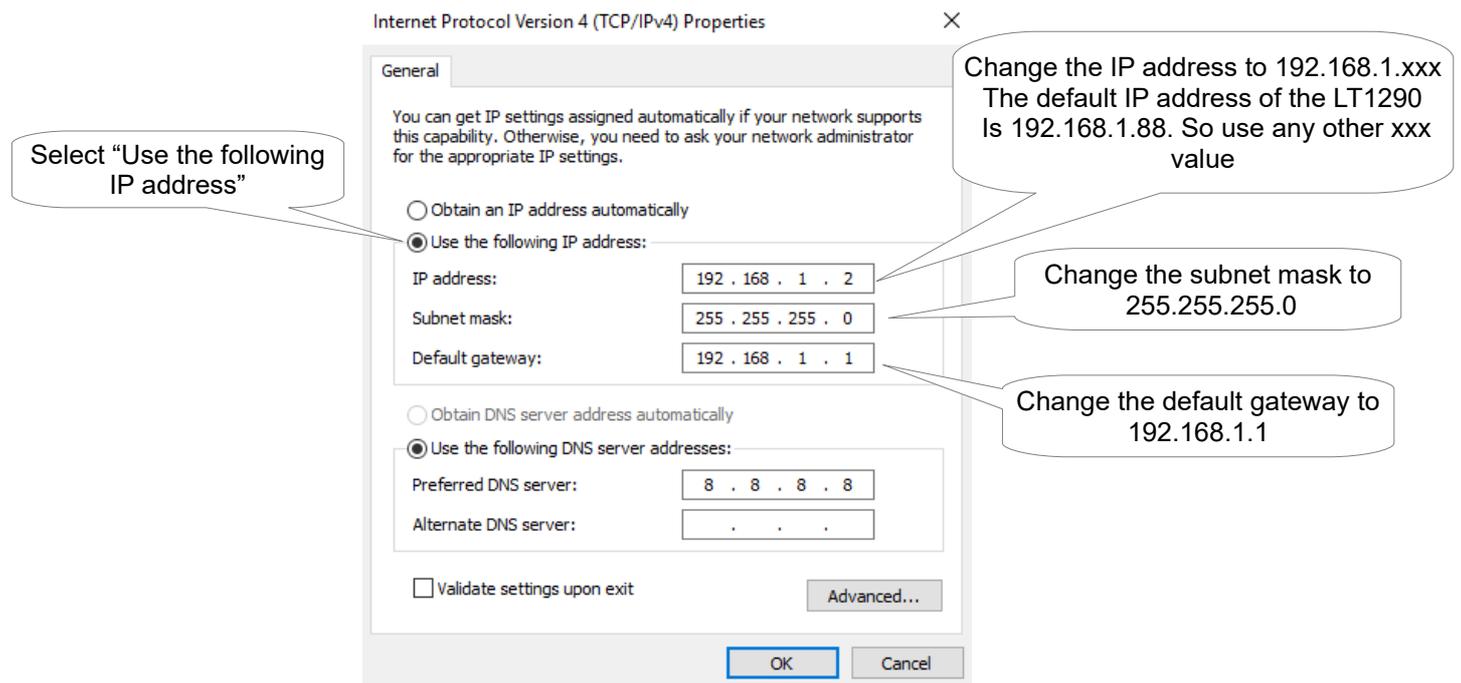
The following will explain how to setup and test the IQ840 in Microsoft Windows by using either a direct ethernet connection or via a router.

Connect the IQ840 to the PC or routers ethernet port using a standard ethernet cable. Apply power to the IQ840.

If the DHCP is used, it must be sure that both the IQ840 and the test PC have IP addresses in the same subnet address range. For example. The IQ840 is in DHCP mode and it is allocated to “192.168.1.xxx” but your PC is set for “192.168.11.xxx” and subnet mask “255.255.255.0”. Then, they can’t communicate with each other because they are in different IP address scope. You must be sure that your PC is in “192.168.1.xxx” address range.

PLEASE NOTE THAT YOU WILL LOSE CONNECTION WITH YOUR COMPANY NETWORK BY RECONFIGURING YOUR PC ETHERNET NETWORK ADAPTER. THIS ONLY APPLIES IF YOU CONNECT TO YOUR COMPANY NETWORK VIA YOUR PC’S ETHERNET PORT.

To change your IP address of the PC you need to right click on “Windows start”, select “Network Connections”, select “Ethernet” then on the right hand side select “Change adapter options”. Right click on the Ethernet adapter then select “properties”. Select the Internet Protocol Version 4 (TCP/IPv4) option and click “properties”. A window similar to the below will be displayed.



Click “OK” and “Close”. Then open your internet browser and enter 192.168.1.88. This will open the web configuration utility of the IQ840.

For this example we will connect a modbus instrument to the PC using the Modbus Poll PC software in TCP/IP mode.

Configure the IQ840 via the web configuration utility as below.

Device View	Network Setting
Basic Settings	MAC Address: <input type="text" value="00:08:DC:21:81:83"/>
Advanced Options	Use DHCP: <input type="checkbox"/>
Firmware	IP Address: <input type="text" value="192.168.1.88"/>
Management	Subnet Mask: <input type="text" value="255.255.255.0"/>
About Us	Gateway: <input type="text" value="192.168.1.1"/>
	DNS Server: <input type="text" value="114.114.114.114"/>
	Socket Setting
	Start Mode: <input type="text" value="Data Mode"/> Change to data mode
	Socket Type: <input type="text" value="TCP Server"/>
	Remote Host: <input type="text" value="192.168.1.99"/>
	Remote Port: <input type="text" value="5000"/>
	Local Port: <input type="text" value="5000"/>
	Bind Local Port: <input type="checkbox"/>
	Modbus option
	Enable Modbus Mode: <input checked="" type="checkbox"/>
	Select Modbus Mode: <input type="text" value="Modbus RTU"/> Select
	UART Setting
	Baud Rate: <input type="text" value="9600"/>
	Data Bit: <input type="text" value="8"/>
	Parity: <input type="text" value="NONE"/> Select Modbus RTU
	Stop Bit: <input type="text" value="1"/>
	Flow Control: <input type="text" value="NONE"/>
	<input type="button" value="Save Settings"/> <input type="button" value="Reset"/>
	Click "Save Settings" and reset
	Select UART parameters

Connect the modbus instrument serial port to the IQ840 (Either via RS232 or RS485).

Run the **Modbus Poll PC** software, and configure as below.

Connection->Connect:

Connection Setup
✕

Connection

Serial Settings

Remote Modbus Server
 IP Address or Node Name: Change the IP address to 192.168.1.88
 Server Port: Change the port to 5000
 Connect Timeout: [ms]
 Mode: RTU ASCII
 Response Timeout: [ms]
 Delay Between Polls: [ms]

Setup->Read/Write definition:

Read/Write Definition ✕

Slave ID:

Function:

Address: Protocol address. E.g. 40011 -> 10

Quantity:

Scan Rate: [ms]

Disable

Read/Write Disabled

Disable on error

View

Rows

10 20 50 100 Fit to Quantity

Hide Alias Columns PLC Addresses (Base 1)

Address in Cell Enron/Daniel Mode

SUCCESS!!!

Communication Traffic ✕

Stop on Error
 Time stamp

```

Tx:000044-00 1D 00 00 00 06 01 03 00 00 00 02
Rx:000045-00 1D 00 00 00 07 01 03 04 00 02 00 00
Tx:000046-00 1E 00 00 00 06 01 03 00 00 00 02
Rx:000047-00 1E 00 00 00 07 01 03 04 00 02 00 00
Tx:000048-00 1F 00 00 00 06 01 03 00 00 00 02
Rx:000049-00 1F 00 00 00 07 01 03 04 00 02 00 00
Tx:000050-00 20 00 00 00 06 01 03 00 00 00 02
Rx:000051-00 20 00 00 00 07 01 03 04 00 02 00 00
Tx:000052-00 21 00 00 00 06 01 03 00 00 00 02
Rx:000053-00 21 00 00 00 07 01 03 04 00 02 00 00
    
```

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The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ininiteq for any damages resulting from such improper use or sale.

10 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence that the unit has been mishandled or misused. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

Note: Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads.

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