# RS232/RS485/RS422 to TCP/IP Converter

### ITEM NO.: RS007



RS007 is a universal data converter which support serial RS232, RS422 and RS485 to the TCP / IP intelligent communication converter, it offers RS485/RS422 and RS232 to TCP / IP network, as well as TCP / IP network to the RS485 and RS232 transparent data transmission, it converter RS485 and intelligent communication the data received on the RS232 serial port, transparent transmission of data to the network server, data server data issued by the network at the same time conveying to intelligent communication converter, RS485 and RS232 serial port. The RS007 10M/100M Ethernet interface up and down a standard RS485/422 and an RS232 serial port communication parameters can set your browser, the baud rate from 1200bps ~ 115200bps. Applicable to a variety of network environments.

### RS007 RS232/RS422/RS485 to Ethernet (TCP/IP) Converter

### Features:

- RS232: Standard DB9 connectors.
- RS422, RS485: Terminal Block
- Ethernet: RJ45 network interface, use the interface through the network line of intelligent communication converter access TCP / IP network.
- Support Data Baud rate: 1200 ~ 115200 bps
- Support three operation mode :TCP Server, TCP Client, UDP Mode
- Support Virtual COM Port
- Support full duplex transmission
- Auto detection network 10/100 Mbps
- Support auto MDI / MDIX
- Built in LED indication

## Installation View:



## Cable:

Link cable recommend use high quality CAT.5e CAT.6 CAT.6a CAT.7 UTP / STP and RS232/RS485/RS422 cable. Poor quality cable or network connection or improper construction will cause unstable connection.

# **Panel View:**



# **LED** Indication

POWER (Green)		Power	ON / OFF
RX (Blue)	Data	Transmission	FLASH
TX (Blue)	Data	Transmission	FLASH
RJ45 (Green/Yell	ow)	10/100Mbps Link Data Transmission	ON / OFF FLASH

### **RS007** Connector

use network cable to connect RS007 and PC
use RS232 cable to connect RS007 and PC
use two wire to connect RS007 and RS485 Device
use four wire to connect RS007 and RS422 Device
use external power adapter DC5V 1Amp (2.5mm)

## Caution

- 1. RS232、RS485、RS422 interface selection, only one interface could be used at one time..
- 2. Make sure to use correct RS232 cable.
- 3. Check RS485、RS422 polarity connection.

★ RS485 connection



★ RS422 connection





## **RS007** Device Application Software Illustration :

RS007 could use software "AXR2E Configuration Utility" in CDROM to setup all functions Setup COM Port  $\$  DHCP Server $\$  TFTP Server as below diagram

Virtual Serial PortAdd	
	Connect
Device Monitor	Close
05 DHCP Server	Setting
TFTP Server	
COM Port Terminal Status Con	vected to remote Ports List
Virtual COM Ports Port ID Port	t Name
COM Terminal 1 Port [COM10 -] Test	Open
COM Terminal 1 Port COM10 1 Test Port F Auto Test F Auto Test F	Echo 0pen 0000 1111

RS007 could use provide software to add Virtual Serial Port setting:



## WebGUI

RS007 could use IE or other browsers and key in IP address to enter setup page as below Diagram, default IP address is **192.168.0.3**, Username/Passwrod **admin** 

	R	S-232 to Ethernet
Login	Usemame Password	admin •••••

### Basic page:

Basic Advance	e Security
Serial Settings	
Data Baud Rate	115200 •
Data Bits	8 *
Data Parity	None •
Stop Bits	1: *
Flow Control	None *
Rs485	Sleep +
Network Settings	
DHCP Client	Enable 🔻
Static IP Address	192.168.0.4
Static Subnet Mask	255.255.255.0
Static Default Gateway	192.168.0.1
Static DNS Server	168.95.1.1
Connection Type	TCP .
Transmit Timer	190
	Please enter an integer between 10~65535 ms
Server/Client Mode	Server •
Server Listening Port	5000
class Castle dies Next Name IV	102 160 0.2
Caesil Destruitation Most inamity be	Please enter host name or TP address(e.g. asix.com.tw or 10.4.1.100
Client Destination Port	5000

#### **Serial Settings:**

Data Baud Rate: 1200~115200bps Data Bits: 5, 6, 7, 8 Data Parity: None, Even, Odd Stop Bits: 1 or 2 Flow Control: None, Hardware, Xon/Xoff RS485: Sleep, Single Twisted Pair HD, Double Twisted Pair FD (Slave), Double Twisted Pair FD (Master)

#### **Network Settings:**

DHCP Client:

DHCP client mode could be enabled/disabled statues. If DHCP is enabled, there should be a DHCP server on the network. If DHCP is disabled, [IP address], [Subnet mask], and [Default Gateway] should be manually assigned.

#### Static IP Address:

The IP address of converter device, 4 digits separated by '.' Don't let it conflict with the other devices on the network.

If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

Static Subnet Mask:

Subnet mask of the converter device has connected to. "255.255.255.0" is usually used for small network, "255.255.0.0" for larger network, 4 digits separated by '.'

If your IP address is provided by an ISP or the internal network administrator, please inquire of them that information and type it correctly.

If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

Static Default Gateway:

Gateway or Router IP address. 'Gateway' is a device which connects local network to external network. If you need to communicate with other networks or your device owns a real IP address on the internet, please inquire of them that information and type it correctly. If there's no gateway on the network, just leave it as "0.0.0.0".

If DHCP client mode is enabled and there's a DHCP server on the network, this field will be assigned by DHCP server automatically.

Static DNS Server: IP address of DNS server to translates memorized domain names to the numerical IP addresses.

Connection Type: TCP or UDP

Transmit timer:

Server/Client Mode: TCP Server: TCP protocol, passive open, to be connected from the TCP clients. TCP Client: TCP protocol, active open, connect to the TCP server. UDP Mode: UDP protocol, connectionless

Server Listening Port: The server listening port would be connected in TCP Client and UDP Client mode for a certain serial port.

Client Destination Host Name/IP: The IP address or host name of the client.

Client Destination Port:

The client destination port would be connected in TCP Server and UDP Server mode for a certain serial port.

### Advance page:

Concernance Article	approximation and the second se
TETP Sarver IP	192.168.0.1
File Name	ax.bin
	Apply Cancel FirmwareUpgrade
E-mail Settings	
E-mail Server Address/IP	Please enter host name or IP address(e.g. asix.com.tw or 10.4.1.100
From E-mail Address	
To E-mail Address 1	
To E-mail Address 2	
To E-mail Address 3	
To E-mail Address 3 Auto Warning Report 1	Settings
To E-mail Address 3 Auto Warning Report Cold Start	Disable •
To E-mail Address 3 Auto Warning Report Cold Start Authentication Fallure	Disable • Disable •
To E-mail Address 3 Auto Warning Report Cold Start Authentication Failure Local IP Address Changed	Settings Disable • Disable • Disable •

#### Firmware Upgrade Settings:

TFTP Server IP: IP address of TFTP server to update firmware.

File Name: File name of firmware in TFTP server.

E-mail Server Address: IP address or host name of SMTP server to send E-mail.

From E-mail address: E-mail address of sender.

To E-mail address 1~3: E-mail address of receivers.

Auto Warning Report Settings:

Auto report when Cold Start, Authentication Failure, Local IP Address Changed, Password Changed if function enabled.

### **Security Page:**

etting Apply Cancel Apply Cancel Apply Cancel	
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Apply Cancel etting Apply Cancel Apply Cancel	
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Apply Cancel	
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0.0.0.0	
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when you change the accessible IP successible, you must rel take it effect, please confirm settings before reboot device.	Doot device
Apply Cancel	
	g 0.0.0.0 0.0.0.0 0.0.0.0 Disable * Attention: When you change the accessible IP successful, you must re take it effect, please confirm settings before reboot device. Apply Cancel

#### Change Username Setting:

Enter new username and apply to change.

#### **Change Password Setting:**

Enter old password, new password and confirm password to change password.

#### Accessible IP Setting:

IP #1~4: IP address of accessible devices. Control: Enable or disable access permission of above IP.

### Run a software able to perform a serial port terminal (RS-232 terminal), UDP/IP terminal and TCP/IP Client Server terminal.

The free software **"hercules\_3-2-6.exe"** that can be downloaded from web site <u>http://bit.ly/10d8KJ</u> is a very useful and powerful interface.

To provide a step-by-step example, see the following pages that show how the "hercules\_3-2-6.exe" works. This software is provided by HW Group and is in its integral version.

**1.** First of all, because you act from PC side you must select the window **TCP Client.** Then you insert Module IP and Port numbers.

pp Setup   Senal Circlent TCP S eceived/Sent data	erver   UDP   Test Mode   About	TCP	But
		192.168.	1.241
	Set IP and Port as setted on the RS005	Pin	ig 👌 📌 Connect
		TEA auth	orization /
		1: 010	20304 3: 090A080C
Select TCP Client		2: 050	60708 4: 0D0E0F10
		Authorizal	ion code
			ć
		PortStore	test
		T NVT	disable
			Received test data
		☐ Redired	a to UDP
Send	I. HE	X Send	Hillarow
		× Send	www.HW-group.com
	12,106		Hercules SETUP utilit
	IT HE	X Send	Version 3.2.6

**2.** make a "Ping" to the device that must responds as shown

Hercules SETUP utility by HW-group.com	(U	
UDP Setup   Setial   ICP Client   TCP Server   UDP   Test Mode   About   Received/Sent data		
Sending ICMP ECHO REQUEST to module	Module IP	Port
2) The module replies	192.168.1.241	1001
	Ping	🔺 Connect
1) Make a "Ping	TEA authorization	

**3.** Establish a permanent connection to the device, clicking on "Connect". The device replies and the button "Connect" becomes "X Disconnect"



**4.** You have at your disposal 3 window where to edit your strings to the peripheral device through the RS007. The single string is sent only pressing the button "Send".

UDP Setup	S	erial TCI	P Client   TCP Server   UDP   Test Mode   About		
Received/Se	int i	data		TCP	
Sending	I	CMP ECH	O REQUEST to module	Madula IP	Port
Received	1 1	ICMP EC	HO REPLY	Module IP	100
Connect	in	y to 19	2.168.1.241	1192.168.1.241	11001
Connecte	d	to 192	.168.1.241	22	1. 1
SIST				Ping	X Disconne
F/W Ver	1	1.0			
Power	:	On		TEA authorizati	on
Port	:	A1B1		TEA key	
EDID	:	TV		1: 01020304	3: 090A0B0C
SIST				3 05060709	A 000000000
F/W Ver	:	1.0		2 10000700	a loboror to
Power		On			
Port	:	A1B1		Authorization co	ode
EDID	:	TV	Below, you can arrange N°3 strings to be sent to your peripheral through the RS005	1	6
F/W Ver	:	1.0	ACCII observations and the unified as they are	0.00	
Power	:	On	(see below P. 0)	Portstore test	
Port	:	A1B1	-Hex characters must be preceded by \$	NVT disable	ŧ
EDID	:	TV	(see below \$ 0D)	Recei	ved jest data
			-Whether HEX is marked, Hex characters can be written as they are (see below 53 54 0D, namely S, T, CR (carriage return)	F Redirect to U	DP
Send	-				
P0\$00			I HEX	Send	Wgrou
ST\$0D			L_ HEX	Send	vvv.HW-group.com
535400	-			Sand	ercules SETUP COM

**5.** ASCII and Hex characters can be mixed. ASCII are written as they are, Hex are preceded by \$.

In the example shown, P0\$0D means that the characters sent on RS232 line will be:

-ASCII "P" (Hex 50), ASCII "0" (Hex 31), ASCII "CR" (Hex 0D)

**6.** Whether the HEX box is marked (see third line) the Hex characters can be written as they are. In the example shown, 53 54 0D means S T CR.

### Troubleshooting:

Under 64bit Windows operation system: To have RS007 with Virtual Serial Port you have to run "AXR2E Configuration Utility" by right click to **run as administrator** to get system permission, if still not wok please use below installation step:

Under C:\Program Files (x86)\AX110xx RS232-to-Ethernet Configuration Utility\ Copy "NETVSPD.inf & NETVSPD.sys" to below folder separately:

NETVSPD.inf copy to C:\Windows\inf\ NETVSPD.sys copy to C:\Windows\System32\drivers\

## Specification:

ITEM NO	RS007
TCP/IP Ethernet	RJ-45 Connector × 1
RS232 Interface	DB9 Male x 1
RS485/RS422	Terminal Block 4 Pin × 1
Interface	
Operation Mode	TCP Server、TCP Client、UDP Mode
Network	10 / 100 Mbps
Distance	Ethernet Cable 100M (Max)
Data Baud Rate	1200 ~ 115200 bps
Modem Control	CTS, RTS, DSR, DTR, RI and DCD
Function	
LED Indication	Power: Green, RX TX: Blue Red, RJ45: Green, Orange
Power Adapter	DC5V 1Amp
Power Consumption	3W (Max)
Temperature	Operation: 0 to 70°C, Storage: -20 to 85°C, Humidity: up to 95%
Dimension mm	67 × 110 × 27
Weight g	180

RoHS (6 FC &