Model ATC-3000 TCP/IP to RS232/422/485 Converter

User's Manual





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Important Announcement

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1 Introduction

Many industrial and Commercial devices equipped with slow serial communication ports RS-232, RS-485, and RS-422 are limited in their transmission distance of 15 m. Examples of these devices are PLC controllers, card readers, display signs, security controls, CNC controller, etc. The ATC-3000 is designed to transmit data between serial device and TCP/IP device through Ethernet, and hence enhance the accessibility of the serial device through the ubiquitous TCP/IP based Ethernet.

ATC-3000 offers full-duplex, bi-directional data transmission transparent between serial port and Ethernet network. Flexible configuration options enable this unit to be setup over Web browser, or other Windows utilities. Packed in a rugged metal housing for wall or DIN-Rail mount with 9~24VDC wide power input range, ATC-3000 is ideal for almost any industrial and manufacturing automation.

Packaging

Please check ones package contains the following items:

- § ATC-3000 x 1
- **§** Power Adapter 9~24VDC x 1
- **§** Product CD containing configuration utility x 1
- § ATC-3000 TCP/IP to RS-232/422/485 converter quick start guide x 1



2 Hardware Setup



2.1 LED Indicators

2.1.1 LINK LED

Message	Description
Off	Ethernet Disconnected
On	Ethernet Connected
Table 1. LINK LED Message	

2.1.2 ACT LED

Message	Description
Off	No data is transmitting between Ethernet and serial port
Blinking	Data is transmitting between Ethernet and serial port
Table 2. ACT LED Message	



2.1.3 SPEED LED

Message	Description
On	Ethernet is working in 100Mbps
Off	Ethernet is working in 10Mbps
Table 3. SPEED LED Message	

2.1.4 **PWR LED**

Message	Description
On	Power on
Off	Power off
Table4. PWR LED Message	

2.2 Installation Procedures

<u>Step 1:</u> Connect ATC-3000 to power source using 9~24V DC Jack.

Step 2: Connect ATC-3000 to you PC or other device by Ethernet cable. You can use a standard straight-through Ethernet cable connect it to a hub/switch, or connect it to PC's Ethernet port via a cross-over Ethernet cable. However, in this case one need to make sure the PC is in the same sub-net as ATC-3000. **Step 3:** Connect ATC-3000's serial port to a serial device.

Step 4: Placement options. One can mount ATC-3000 to a wall/panel (Mounting screws included) or Din-Rail rack.



3 Software Setup

ATC-3000 is shipped with default settings shown in the following table:

Property	Default Value
IP Address	192.168.0.250
Gateway	192.168.0.1
Subnet Mask	255.255.255.0
User Name	admin
Password	admin
COM 1	9600,None, 8, 1, No flow control, Pack Control disabled, Buffer disabled
Link 1	Type: TCP Client, Listen port 27010, remote host=0.0.0.0

3.1 Configuration by Telnet

You can use Telnet utility to change configuration settings of ATC-3000 by following steps:

3.1.1 Login to the System

Open Ms-DOS command prompt window

Telnet to ATC-3000 using command "**Telnet IP address**". (For example: Input **Telnet 192.168.0.250** in Ms-DOS command prompt window). After telnet to ATC-3000, system prompts for a password, the default password is left it blank. (Figure 3.1)

🗪 Telnet 192.168.0.250	
name:admin	
password	

Figure 3.1 Login to the system

Note: One can press the default button of ATC-3000 to reset the password to the default value.

After verifying the password, the following terminal screen appears.(Figure 3.2)



GN Telnet 192.168.0.250
< <main menu="">></main>
<1> Basic settings
<2> Connection Ø settings
<3> Network settings
<4> Hostlist Ø settings
<5> Serial Ø settings
<6> Load factory default
<7> User manage
<v> View settings</v>
<s> Save and Reboot</s>
<q> quit</q>
key in your selection:

Figure3. 2 Main menu

Note: Changes to networking parameters will take effect only when one save and reboot ATC-3000.

Select "1" from "Input choice and enter (1~7 or v s q):" to enter show basic settings page as following.(Figure 3.3)



Figure 3. 3 Basic settings

This page gives you the general information of ATC-3000.

3.1.2 Connection 0 setting

Select "2" from "Input choice and enter (1~7 or v s q):" to enter show Connection 0 setting page as following.



(Figure3.4)

🗪 Telnet 192.168.0.250
< <main menu-="">Connection Ø settings>></main>
<1> TCP [*]
<2> UDP
Ack to main menu <q> quit</q>
key in your selection:



In this page you can change the network mode of ATC-3000.And then you can configuration the parameters of the mode which you choice. Figure 3.5 and figure 3.6 show the configuration page.

🖼 Telnet 192.168.0.250	
< <main menu-="">Connection 0 ->tcp>></main>	
<1> Accept incoming [Y]	
<2> Active connect [None]	
<3> Start character []	
<4> Local port [27010]	
<5> Remote port [0]	
<6> Remote host [0.0.0.0]	
<7> Dns query period [1800]	
<8> Connect Response: [None]	
<9> Use Hostlist: [N]	
<a> Disconnect Mode	
On DSR Drop: [N]	
Hard Disconnect: [N]	
Check EOT(Ctr-D): [N]	
Inactivity Timeout: [4:15]	
<m> Back to main menu</m>	
<q> quit</q>	
key in your selection:_	

Figure 3. 5 Tcp configuration page



🕰 Telnet 192.168.0.250	
<pre></pre> <pre><pre></pre><pre></pre><pre><pre></pre></pre></pre>	
key in your selection:	

Figure 3.6 Udp configuration page

3.1.3 Network Settings

Select "3" from "Input choice and enter (1~7 or v s q):" to enter show Network setting page as following.

(Figure 3.7)

```
🗪 Telnet 192.168.0.250
key in your selection:3
<<Main Menu->Network settings>>
(1> Use static IP address [*]
(2) Obtain IP automatically
 -Ethernet Configuration--
<3> speed/duplex auto negotiate [*]
(4) 100 Mbps,Full Duplex
<5> 100 Mbps,Half Duplex
(6) 10 Mbps,Full Duplex
(7) 10 Mbps,Half Duplex
<8> Modify Mac Address [00.f0.0a.05.42.b4]
 -HTTP Server--
(9) HTTP Server Port [80]
(m> Back to main menu
<q> quit
key in your selection:
```

Figure 3.7 Network settings page

3.1.3.1 Static IP setting

Select "1" from "Input choice and enter (1~9 or m q):" to enter show Static IP setting page as following. (Figure 3.8)



🖎 Telnet 192.168.0.250	
<1>	Ip address [192.168.0.250]
<2>	Subnet mask [255.255.255.0]
<3>	Default gateway [192.168.0.1]
<4>	Prefered DNS Server [192.168.0.1]
<5>	Alternate DNS Server [192.168.0.1]
<m></m>	Back to main menu
<q></q>	quit
ke y	in your selection:_

Figure 3.8 Static IP setting page

In this page you can change the static IP address, subnet mask, default gateway and some other parameters.

3.1.3.2 Auto IP setting

Select "2" from "Input choice and enter (1~9 or m q):" to enter show Static IP setting page as following. (Figure 3.9)

< <main menu-="">Network settings>></main>
<1> BOOTP enable
<2> DHCP enable
<3> AutoIP enable
<4> DHCP host name []
<m> Back to main menu</m>
<q> quit</q>
key in your selection:_

Figure 3.9 Auto IP setting page

3.1.3.3 Ethernet configuration

Select the No. between 3 and 8 from "Input choice and enter (1~9 or m q):" to enter show Ethernet configuration page.

3.1.4 Hostlist 0 Settings

Select "4" from "Input choice and enter (1~7 or v s q):" to enter show Hostlist 0 setting page as following. (Figure 3.10)



3.1.5 Serial 0 Settings

Select "5" from "Input choice and enter (1~7 or v s q):" to enter show Serial 0 setting page as following. (Figure 3.11)

🗪 Telnet 192.168.0.250						
key in your selection:4						
< <main menu-="">Hostlist 0 setting>></main>						
<1> Retry Counter [0]						
<2> Retry Timeout [0]						
<3> Host1 [0.0.0.0:0]						
<4> Host2 [0.0.0.0:0]						
<5> Host3 [0.0.0.0:0]						
<6> Host4 [0.0.0.0:0]						
<7> Host5 [0.0.0.0:0]						
<8> Host6 [0.0.0.0:0]						
<9> Host7 [0.0.0.0:0]						
<a> Host8 [0.0.0.0:0]						
<h>> Host9 [0.0.0.0:0]</h>						
(c) Host10 [0.0.0.0]						
d > Host11 [0.0.0.0:0]						
$\langle e \rangle$ Hostill [0.0.0.0.0]						
(f) hackup link [disable]						
(f) Dackup IIIK Luisablej						
(q/ quit						
key in your selection:						

🛤 Telnet 192.168.0.250							
< <main menu-="">Serial port 0 settings>></main>							
<1> Enable Serial Port [Y]							
<2> Protocol [R\$232]							
<3> Baud rate [9600]							
<4> Data bits [8]							
<5> Stop bits [1]							
<6> Parity [none]							
<7> Flow control [none]							
<8> FIFO [8]							
<9> Enable Packing [N]							
<a> Flush input buffer							
With Active Connect: [N]							
With Passive Connect: [N]							
At Time of Disconnect: [N]							
 Flush output buffer							
With Active Connect: [N]							
With Passive Connect: [N]							
At Time of Disconnect: [N]							
<m> Back to main menu</m>							
<q>> quit</q>							
key in your selection:_							

Figure 3. 10 Hostlist 0 setting



In these pages you can configuration the parameters about the serial port and hostlist.

3.2 Configuration Using Web Browser

1. Make sure one PC is located on the same network sub-net as ATC-3000

Open a web browser, then type in the IP address of ATC-3000 to be configured. Default user name is **admin** and default password is **admin**.

2. ATC-3000's network, link mode and COM ports settings can be configured in different web pages. Click to confirm the parameter which you have changed.

3. Click "**Apply/Restart**" to save settings and reboot ATC-3000.

To do so, please follow the steps below.



3.2.1 Log in to the System

1. From web browser, type in the IP address of ATC-3000 in the URL. Example: <u>http://192.168.0.250</u> The following authentication screen appears.(Figure 3.12) Please type in user name and password then click on OK. The user name is admin and password is left it blank by default.

连接到 192.168.	0.250	<u>?</u> ×
		S. M.
位于 M2M CXT3210 名和密码。	3 的服务器 192.168.0	0.250 要求用户
警告:此服务器要 密码(没有安全连	求以不安全的方式发; 接的基本认证)。	送您的用户名和
用户名(11):	🛃 admin	-
密码(E):	1	
	□ 记住我的密码 @	p
	确定	取消

Figure 3. 12 login the system via Web

2. The following home page appears.(Figure 3.13)

AC.	NANGEB CHNOLOGY	ATC-3000-SL485:1219 Firmware Version:V1.1.4.RJ
Home	Summary Information	
Basic Settings	Model Name:	ATC-3000
Network Server	MAC Address:	00.f0.0a.05.ac.e5
Serial Channel	IP Address:	192.168.0.250
Password Settings Power manage	Subnet Mask:	255.255.255.0
Log Out	Gateway:	192.168.0.1
	Primary DNS Server:	208.67.220.220
	Second DNS Server:	208.67.222.222
	Firmware Version:	V1.1.4.R1



3.2.2 Network setting

Click on the "Network" link and the following screen appears. In this page you can configuration the IP information. Figure 3.14.

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Network Settings

IP Configuration OAutomatically obtain IP address: BOOTP: Disable
Enable DHCP: Oisable OEnable AutoIP: Disable
Enable DHCP Host Name: ⊙Use the following IP configuration: IP Address: 192.168.0.250 Subnet: 255.255.255.0 Default Gateway: 192.168.0.1 Preferred DNS server: 208.67.220.220 Alternate DNS server: 208.67.222.222 Ethernet Configuration Auto Negotiate Speed: 010Mbps 0100Mbps Duplex: OHalf
Full MAC Address: 00.f0.0a.05.ad.42 Network Type Ethernet Submit

Figure 3. 14 Network setting page



3.2.3 Hostlist setting

Click on the "serial tunnel 0" link and then click on the "hostlist" link you will see the figure 3.15 below.

Hostlist Settings

Channel 1

TCP	TCP Hostlist Settings						
Retr Max	Retry Counter: 3 Retry Timeout: 5 Max TCP Links: 2						
Host	t Information						
No.	Host Address	Port	No.	Host Address	Port		
1		0	2		0		
3		0	4		0		
5		0	6		0		
7		0	8		0		
9		0	10		0		
11		0	12		0		

Submit

Figure 3.15 Hostlist setting page

3.2.4 Hostlist setting

Click on the **"Channel 0"** link and then click on the **"serial settings"** link you will see the figure 3.16 below.



Serial Settings			
Channel 1			
☑ Enable Serial Port Port Settings			
Protocol: RS232 V Flow Control: None Data Bits: 8 V Stop bits: 1 V	✓ FIFO:✓ Baud Rate:✓ Parity:	8 💌 9600 💌 None 👻	
Pack Control			
Max packet length: Idle Time: Latch:	1024 20 (ms) 10 (ms)	Merge lengt Net Idle Tim	h: 1 ne: 5(ms)
Enable Match Packing:		Match 2 Byte Sequence:	es ⊙Yes ⊛No
Send Frame Only:	⊙Yes ⊚No	Match Byte:	0x ³¹ 0x ³² (Hex)

Figure 3.16 Serial setting page

Click on the **"Channel 0"** link and then click on the **"connection"** link you will see the figure 3.17 below.



Connection Settings

Channel 1

Connection Protocol: TCP 💌						
Connect Mode						
Worked As: Server Active Connect: Auto Start	Start Character: 0X 61					
Endpoint Configuration:						
Local Port: 27001	Remote Port: 0					
Remote Host:]					
Use Hostlist: 🗆	DNS Query Period: 1800					
Disconnect Mode						
□Hard disconnect						
Inactivity Timeout: 255 (Secs)						
KeepAlive:	10 (Secs)					
Submit						

Figure 3. 17 connection setting page

In these pages you can configuration some parameters about the serial port and network mode.

3.2.5 Change Password

If you want to change the login Password you should click on the **"Password setting"** link. And then the page like Figure 3.18 you will see.



Password Settings

Change Password				
Username:	admin			
Old Password:				
New Password:				
Retype Password:				
Submit				

Figure 3. 18 Password Setting Page



4 Diagnostics

You can use Standard TCP/IP Utility Ping Command to diagnostics the connection.

From Windows start menu, select Run and type in "ping <TCP Server IP address>".

If the connection is established, the Reply messages are displayed, otherwise it will indicate Request timed out (Figure 4.1).

ev C : \1	📾 C:\TIMOTS\system32\ping.exe						
Pinging 192.168.0.250 with 32 bytes of data:							
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=2ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time<1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=2ms	TTL=255
Reply	from	192.168.0.250:	bytes=Ø	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=Ø	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=Ø	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32>	time=1ms	TTL=255
Reply	from	192.168.0.250:	bytes=0	(sent	32)	time=1ms	TTL=255

Figure 4.1 Standard TCP/IP utility ping command



Appendix A: How to make a virtual serial port

Insert the software CD and you will find a file named vcom.rar , then open this file to setup the vcom software.



If you install the software correctly ,and then double-click the shortcut of this software vircom. The main interface will

appear like Figure A.1.

<u>≤</u> ≣C	Conextop_vcom							
Syst	System Virtual COM Help							
No	Port Name	Mode	Remote Ip	Remote Port	Local Ip	Local Port	State	Information
	1	1	1	1	I	1		

Figure A. 1

Click on the Virtual COM tab and choose Add you will see the interface show in Figure A.2.

You can change some parameter in this interface to establish a virtual serial port.

- Ø Work Mode: you can select TCP server, TCP client or UDP mode. But here we choose TCP client as a example.
- Ø COM Port: you can select a serial port number which you want to mapping. This port NUM. must not in use. We select COM2 here.
- Ø Local Host and Local Port: keep default set.
- Ø Remote Host: input the IP address of the device which you want to mapping. The IP address of the device we use in the test is 192.168.0.251.
- Ø Remote Port: input the port number of the device which you want to mapping. The port number of the device we use in the test is 27010.
- Ø Other parameter: keep them in default set.

If the work above is finished, click on OK. Then the interface like Figure A.3 will appear in front of you.

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Virtual Com Proper	ty		×
Basic			
Work Mode	TCP Client	COM Port	COM2
Local Host	0.0.0.0	Remote Host	192.168.0.251
Local Port	0	Remote Port	27011
Detect DTF	I		
Custom Protoco	l		
🔲 Use Custor	n Protocol		
Device	Name		
Keepaliv	ve Timeouts(secs)	Idle Timeouts(s	ecs) 100
OK			Cancel

Figure A. 2

	<u>User Manual</u>	
ATC-3000 TCP/I	P to RS232/422/485	Converter



Conextop_vcom										
System Virtual COM Help										
No	Port Name	Mode	Remote Ip	Remote Port	Local Ip	Local Port	State	Information	Ī	
0	COM2	tcpclient	192. 168. 0. 251	27011	0.0.0	0	Stopped			

Figure A. 3