

# Model ATC-1000M Serial-to-Ethernet Embedded module User's Manual



## 1.0 Description

Adds Ethernet connectivity for RS-232/422/485 devices  
10/100Mbps Ethernet; 230,400bps serial data rate  
Supports TCP/Server, TCP/Client and UDP mode  
Provides six TTL-level programmable digital I/Os  
Web/Telnet/Serial consoles for device configuration  
Windows utility included for device management

## 2.0 Features:

### Form Factor

Type: 30-pin dual-inline drop-in module  
Pitch: 1.27mm  
Dimensions: 37x27x12mm

### Network Interface

Type: 10/100BaseT, auto-detect  
Protocols: TCP, UDP, HTTP, Telnet, IP, ICMP, ARP  
IP addressing: DHCP, Static IP

### Operation Modes

TCP/Server, TCP/Client and UDP mode

### Serial Interface (TTL-level)

Signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND  
Baud: 300 to 230,400 bps  
Parity: None, Even, Odd  
Data bits: 7,8  
Stop bit: 1,2  
Flow control: None, RTS/CTS, XON/OFF

## Programmable Digital I/O

PIO0~PIO6: TTL level compatible

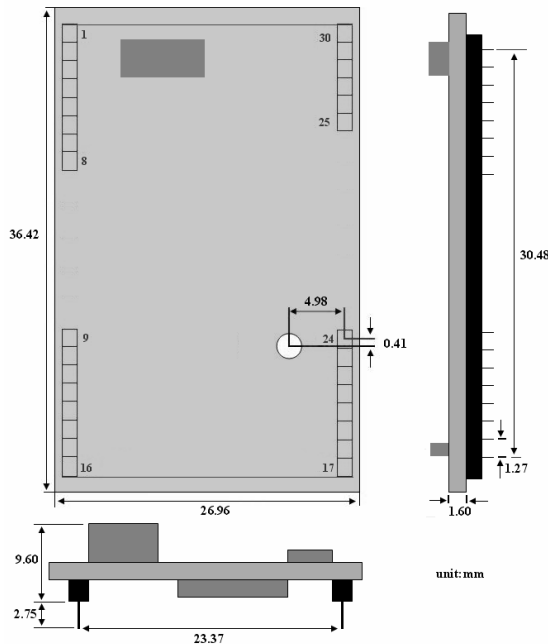
## Configuration Methods

Web console, Telnet Console and Serial Console  
Windows utility (included in CD)

## General

Power input: 3.3VDC  
Power consumption: 350mA@+3.3VDC  
Operation temp.: 0~70C, 5~95% RH  
Storage temp.: -20~85C, 5~95% RH  
Regulation: CE/FCC compliant  
Warranty: 2 years

## 2.1 Dimensions: (mm)



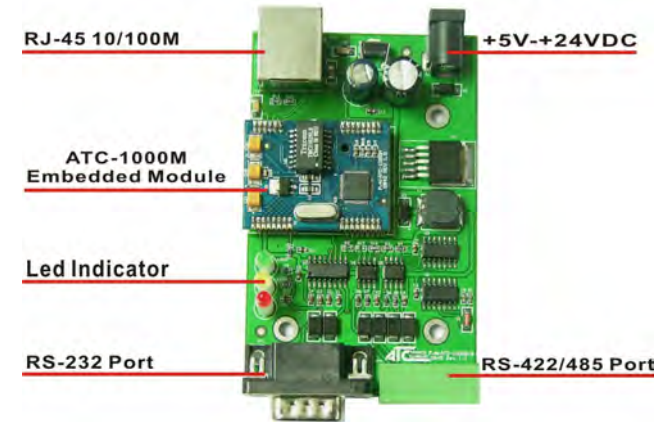
## 2.2 ATC-1000M Pin assignment

GND	1
VCC3.3V	2
ADC_REFH	3
ADC_REFL	4
ADCO	5
ADC1	6
RESETB	7
LED_LINK	8
HSRXD/P2_0	9
HSTXD/P2_1	10
RTS/P2_2	11
DTR/P2_3	12
CTS/P2_4	13
DSR/P2_5	14
DCD/P2_6	15
RI/P2_7	16

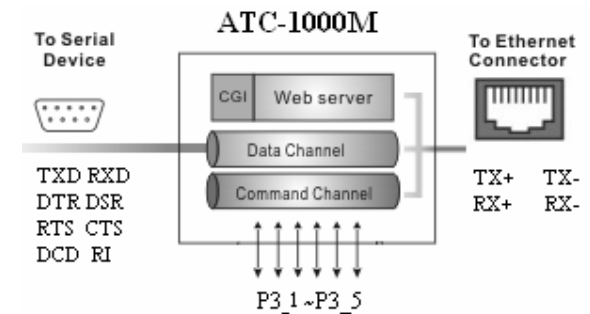


30	NC
29	GND
28	TX-
27	TX+
26	RX+
25	RX-
24	P3_5
23	P3_4
22	P3_3
21	P3_2
20	P3_1
19	P3_0
18	P1_2
17	VCC3.3V

## 2.3 ATC-1000M Block Diagram



## 2.4 ATC-1000M Connect Block Diagram



## 2.5 ATC-1000M Pinout function description

Pin No	Label	Description
1,29	GND	Ground
2,17	VCC3.3V	3.3V supply voltage.
3	ADC_REFH*	The upper reference voltage. The maximum input voltage range is determined by the voltage applied to ADC_REFH and the voltage applied to ADC_REFL.
4	ADC_REFL*	The lower reference voltage.
5	ADC0*	ADC channel 0 analog input.
6	ADC1*	ADC channel 1 analog input.
7	RESETB	Reset, low active. This pin should be kept at "low" state for at least 10 microseconds. Connect this pin to a 1M ohms pull up resistor. There is an internal capacitor between this pin and GND, so the external capacitor is not necessary for a RC reset circuit.
8	LED_LINK	LINK_LED
9	HSRXD	TTL/CMOS driver input.
10	HSTXD	TTL/CMOS receiver output.
11	RTS	Request To Send Control Output / Handshake signal.
12	DTR	Data Terminal Ready Control Output / Handshake signal.
13	CTS	Clear to Send Control input / Handshake signal.
14	DSR	Data Set Ready Control Input / Handshake signal.

Pin No	Label	Description
15	DCD	Data Carrier Detect Control input.
16	RI	Ring Indicator Control Input.
18	P1_2*	GPIO P1_2
19	P3_0	Restore the setting to factory default. This pin should be low at first, and then power on. Release it after three seconds.
20	P3_1*	Port3 is an 8-bit bidirectional I/O port. Port3 also provides various special features listed below: GPIO P3_1 or STXD0, serial output port 0 GPIO P3_2 GPIO P3_3 or INT1, External interrupt 1 GPIO P3_4 or T0, Timer 0 external input GPIO P3_5 or T1, Timer 1 external input
21	P3_2*	
22	P3_3*	
23	P3_4*	
24	P3_5*	
25	RX-	Ethernet receiver negative.
26	RX+	Ethernet receiver positive.
27	TX+	Ethernet transmitter positive.
28	TX-	Ethernet transmitter negative.
30	NC	No Connection.

\*.The pink color pin is not support on standard firmware

### 3.0 Configuration and Operation

Use this section to set up your computer to assign it a static IP address in the 192.168.2.2 to 192.168.2.254 range with a subnet mask of 255.255.255.0. This is necessary to ensure that your computer can communicate with your ATC-1000M. Your computer must have an Ethernet card and TCP/IP installed.

TCP/IP should already be installed on computer using Windows 98/2000/XP and later operating systems.

**Step 1** : Open your web browser and type <http://192.168.2.1> in the browser's *address box*. This address is the factory set IP Address of your ATC-1000M. Press "**Enter**".

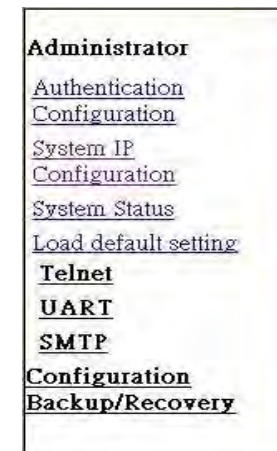
**Step 2** : The "**ID and Password required**" prompt box will appear. Typing "**admin**" (default username) in the ID field and typing "**system**" (default password) in the Password field. Click "**OK**". The setup screen will then appear.

User login to enter a password.

**Default ID** : admin

**Default Password:** system

### 3.1 The menu features as below:



All above the functions explain as below:

### 3.2 Administrator Setup

Manager of the relevant setting page.

### 3.3 Authentication Configuration

The Users can change the username and password to prevent unauthorized access.

Login ID and password authentication, the maximum is 15 characters and numbers.

User Name: default **admin**

Password: default **system**

#### Authentication Configuration

Setting	Value
Username	<input type="text" value="admin"/> max:15
Password Confirm	<input type="password" value="*****"/> max:15

### 3.4 System IP Configuration

The ATC-1000M support three IP connection types: Static IP, DHCP. These types are listed in the Web page for the IP Configuration setting. Each setup screen and available features will differ depending on what kind of IP connection types you select. Default is Static IP

#### System IP Configuration

Setting	Value
IP Address	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="2"/> <input type="text" value="1"/>
Subnet Mask	<input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="255"/> <input type="text" value="0"/>
Gateway	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="2"/> <input type="text" value="254"/>
DNS	<input type="text" value="192"/> <input type="text" value="168"/> <input type="text" value="2"/> <input type="text" value="253"/>
IP Configure	<input checked="" type="radio"/> Static <input type="radio"/> DHCP

#### Static (or Fixed) IP

**IP Address:** default **192.168.2.1**

**Subnet mask:** default **255.255.255.0**

**Gateway:** default **192.168.2.254**

Primary DNS: default **192.168.2.253**

If you are connecting through a static or fixed IP from your network environment, perform these steps :

**Step 1:** Enter IP address

**Step 2:** Enter Subnet mask

**Step 3:** Enter Gateway IP address

**Step 4:** Enter Primary DNS IP address

**Step 5:** click Update button

### 3.5 DHCP

**Host Name (Optional):** default **NETUART**, maximum length **15** characters

If there is a DHCP Server existing in your network environment or you subscribe a CABLE service from your ISP, you can set IP configuration to DHCP to get a dynamic IP address. The **Host Name** is an *optional* item, depending on your DHCP Server setting.

### 4.0 System Status

This screen shows the ATC-1000M's current status. All of the information provided is read-only.

**Kernel Version:** the installed version of the kernel.

**MAC Address:** At present the device MAC Address

**Nickname:** the product model name of NetUART

#### System Status

MAC Address	00:00:11:33:FF:00
Nickname	<input type="text" value="NetUART"/> <input type="button" value="Update"/>
System Version	V3.0.060110

### 5.0 Load default setting

Allow Users to reset the ATC-1000M to return the initial value, but the MAC Address will not be updated.

## Load Default Setting to EEPROM

### 5.1 Telnet

Telnet connection setting:

Telnet Server/Client: Currently used to determine the device is to the Telnet Server or Client.

If the Server, show this connection have to wait for the other side of the Port, if the Client, show that external connections to the Port

Remote Server IP Address: When the Client, to be connected the other side of the server IP Address.

### 5.2 Operation mode

The ATC-1000M support four operation mode: TCP Server, TCP Client, UDP Server and UDP Client. These modes are listed in the Web page for the Operation Mode setting. Each setup screen and available features will differ depending on what kind of operation mode you select. Default is TCP Server.

### 5.3 TCP Server

**Port Number:** default **23**, range **0** to **65535**

If your device is acted as passive to accept commands from remote and the data be guaranteed to be received by peer is your concern, then you can set ATC-1000M as TCP Server. Be sure the value of item **Port Number** is same as your remote control application using.

**Client mode inactive timeout (minutes):** default **20**

( 0=Disable)

If you want to keep the connection between ATC-1000M and your remote control application always on, then set the value of item **Client mode inactive timeout (minutes)** to 0, otherwise, when the inactive time of no any traffic on line reach the setting value, ATC-1000M will terminate this connection.

#### 5.4 TCP Client

**Remote Connection Port Number:** default **23**, range **0** to **65535**

**Remote Host IP Address:** default **210.200.181.102**

If your device is acted as active to report real-time status to remote and the data be guaranteed to be received by peer is your concern, then you can set ATC-1000M as TCP Client. Be sure the value of item **Remote Connection Port Number** is same as your remote control application using and set the correct value of **Remote Host IP Address**.

#### 5.5 UDP Server

**Local Port Number:** default **21**, range **0** to **65535**

If your device is acted as passive to accept commands from remote and the data be guaranteed to be received by peer is *not* your concern, then you can set ATC-1000M as UDP Server. Be sure the value of item **Local Port Number** is same as your remote control application using.

#### 5.6 UDP Client

**Remote Connection Port Number:** default **21**, range **0** to **65535**

**Remote Host IP Address:** default 192.168.2.2

If your device is acted as active to report real-time status to remote and the data be guaranteed to be received by peer is *not* your concern, then you can set ATC-1000M as TCP Client. Be sure the value of item **Remote Connection Port Number** is same as your remote control application using and set the correct value of **Remote Host IP Address**.

#### Telnet Control

Item	Value
Telnet Server/Client	<input checked="" type="radio"/> Server <input type="radio"/> Client
Port Number	<input type="text" value="23"/>
Remote Server IP Address	<input type="text" value="210"/> <input type="text" value="200"/> <input type="text" value="181"/> <input type="text" value="102"/>
<input type="button" value="Update"/>	

#### 6.0 UART Control (RS-232)

The ATC-1000M support three serial types: RS232, RS422 and RS485, The user can reference hardware diagram to directly select RS232, RS422, RS485, no need select by software.

**Baud Rate:** default **57600**, range 300bps to 230.4Kbps

**Character Bits:** 5, 6, 7, 8 (default)

**Parity Check:** **None** (default), even, odd, space, mark

**Stop Bits:** **1** (default), 1.5 or 2

**Hardware Flow Control:** **None** (default), CTS/RTS (or Hardware)

#### ATC-1000M Management Setup

This chapter will show you how to manage ATC-2000's access setting as well as configure E-mail alert and firmware upgrade.

Hi-speed UART the relevant setting, it is basically similar as windows

#### UART Control

Item	Current value	Setting
Baudrate	<b>57600</b>	<input type="text" value="57600"/>
Character Bits	<b>8</b>	<input type="text" value="8"/>
Parity Type	none	<input type="text" value="none"/>
Stop Bit	1	<input type="text" value="1"/>
Hardware Flow Control	none	<input type="text" value="none"/>
<input type="button" value="Update"/>		