AT Series
User Manual

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1. Notification

1.1. Disclaimer

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2. Hardware

2.1. Package Content

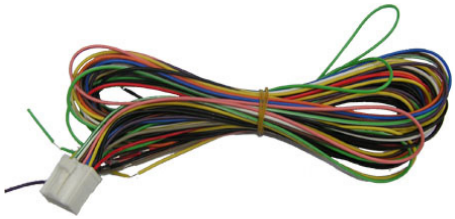
Each package contains the following device/accessories:

- Device * 1

- GSM Antenna * 1

- GPS Antenna * 1

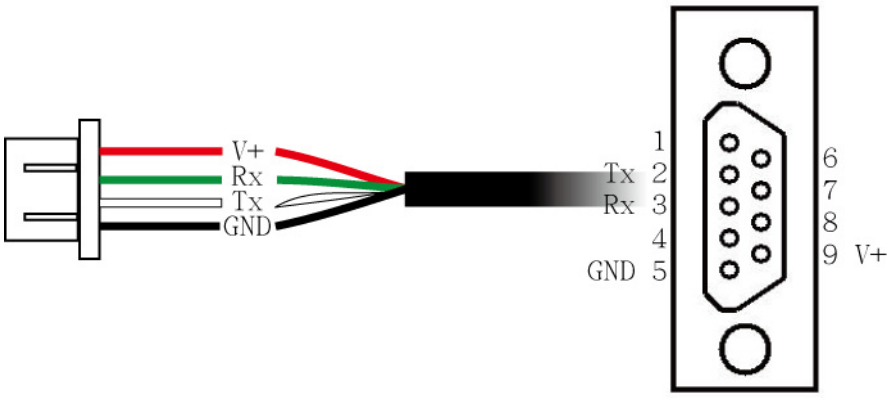
- Power/IO Cable * 1



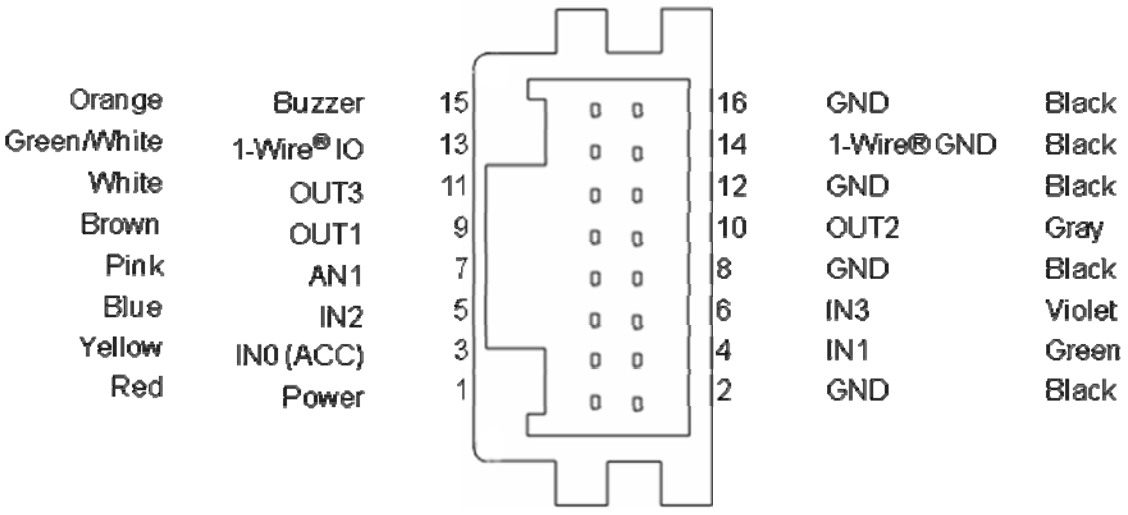
- Serial Cable * 1

2.2. Pin Assignments

2.2.1. Serial Cable (JST Female Connector to DB9 Female Connector)



2.2.2. Power/IO connector (Male; On Device)



Positive Inputs: IN0, IN1 (Triggered when connects to V+ range from 3.7 ~ 40V)

Negative Inputs: IN2, IN3 (Triggered when connects to ground range from 0.8 ~ 0V)

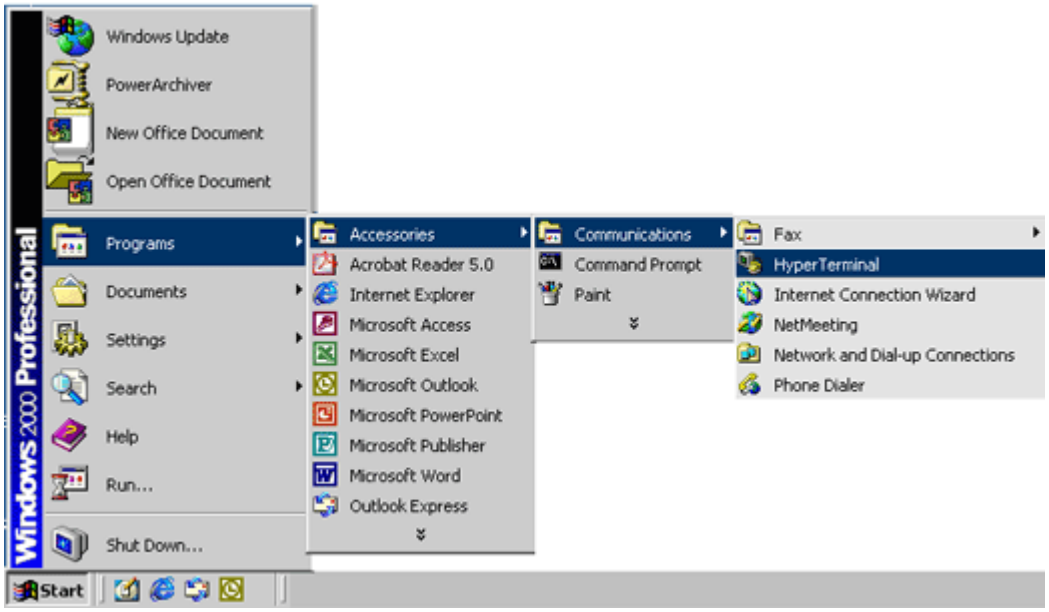
Analog Input: 0 ~ 40 V; 10-bit Resolution.

All outputs are open collector type (grounded when enabled).

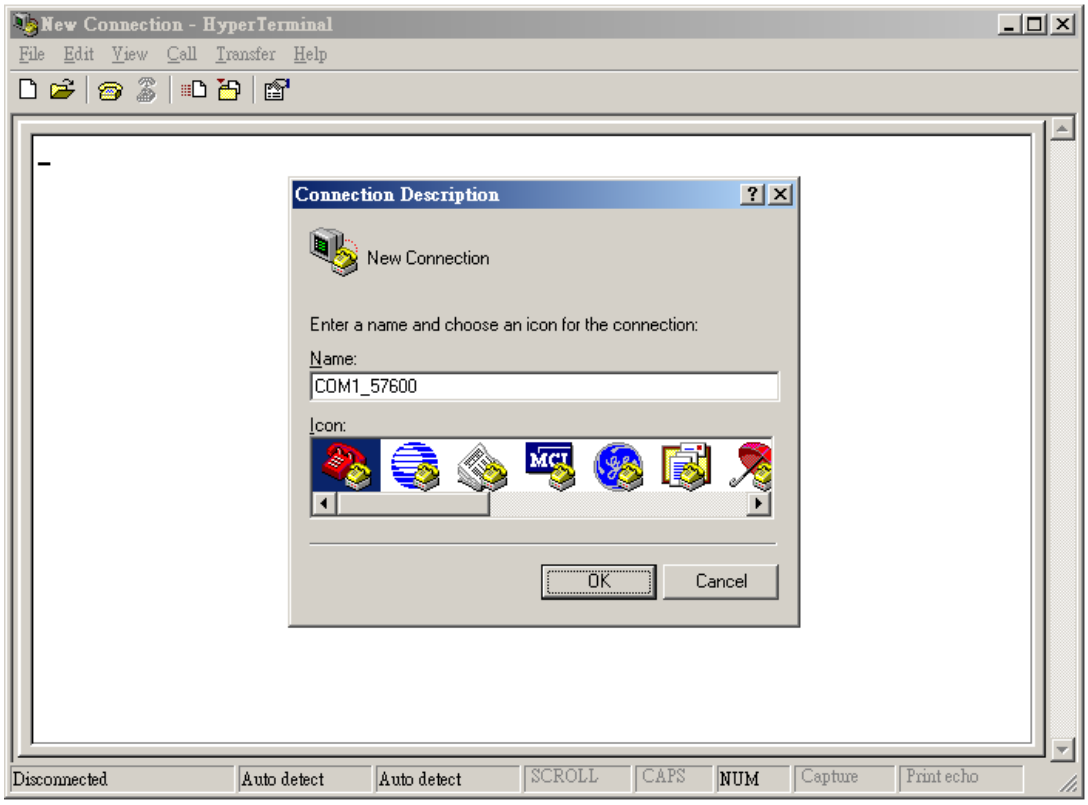
3. Firmware Upgrade

3.1. Firmware Upgrade by serial connection

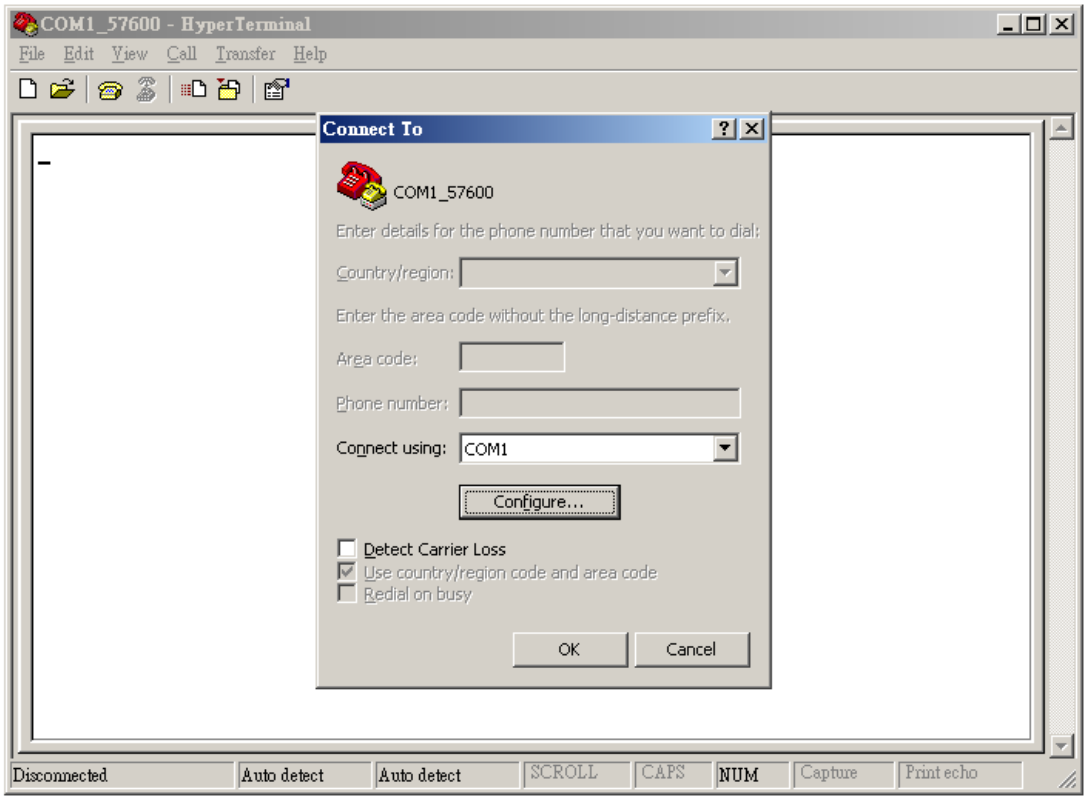
(1) Run HyperTerminal program



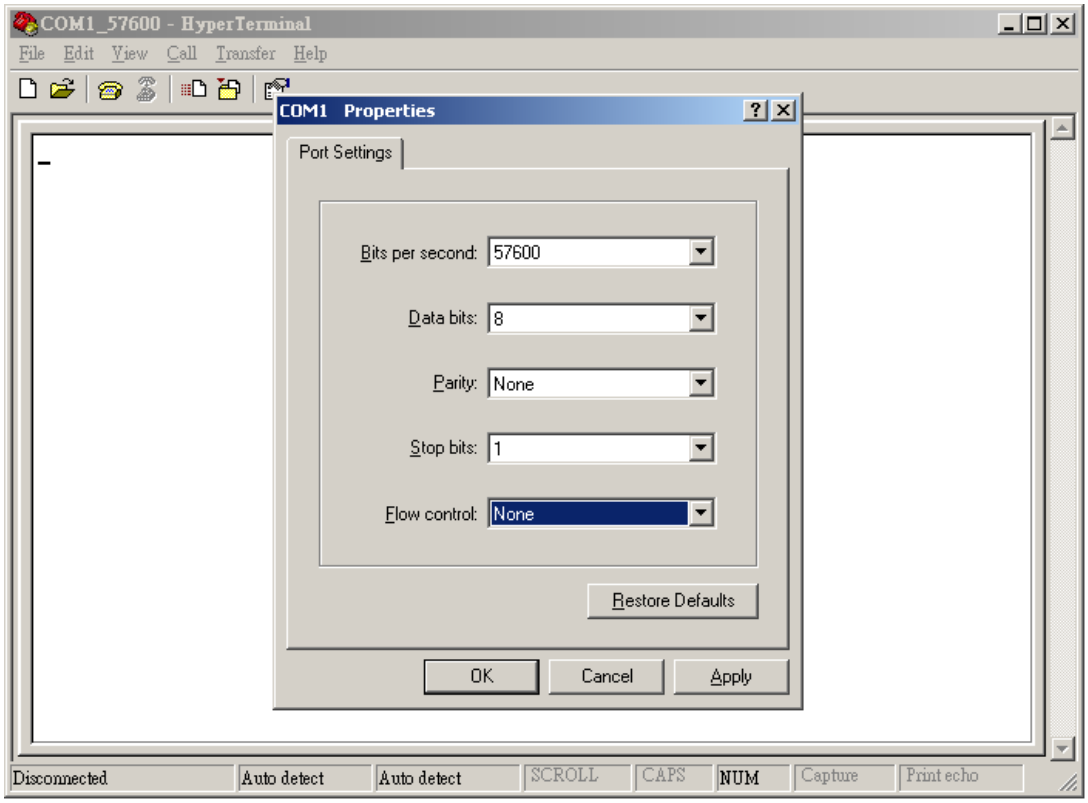
(2) Enter a name for the connection



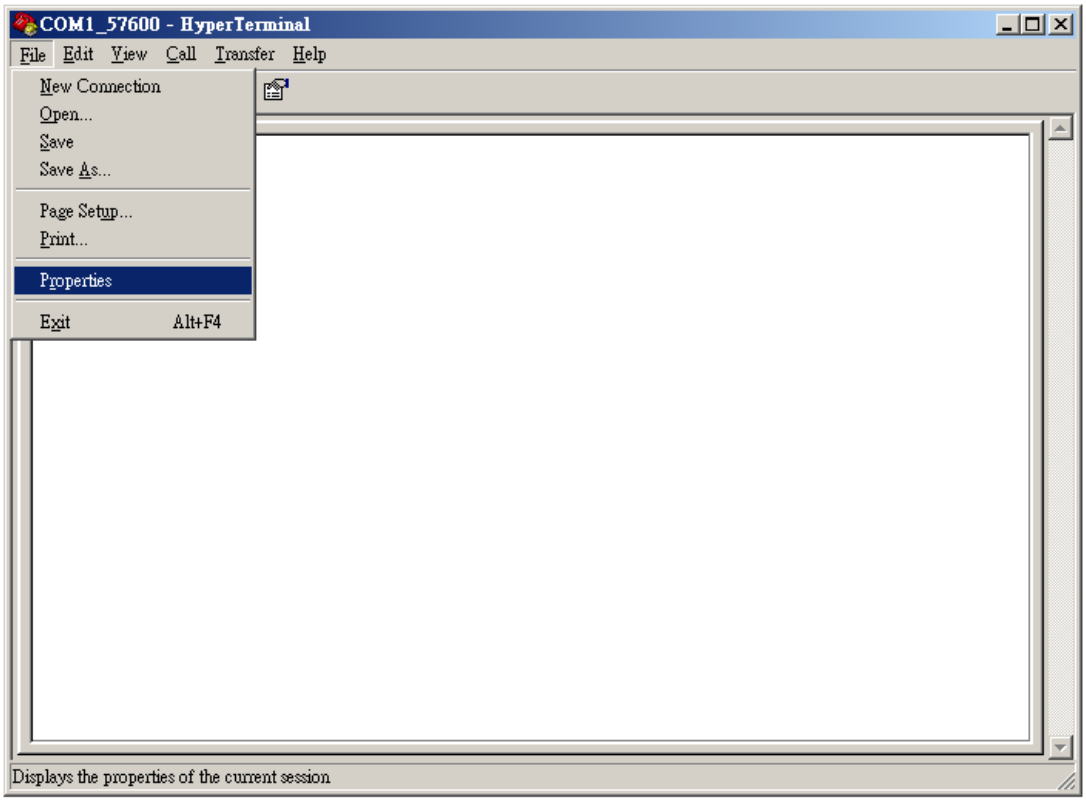
(3) Choose COM port and click [Configure…] button.



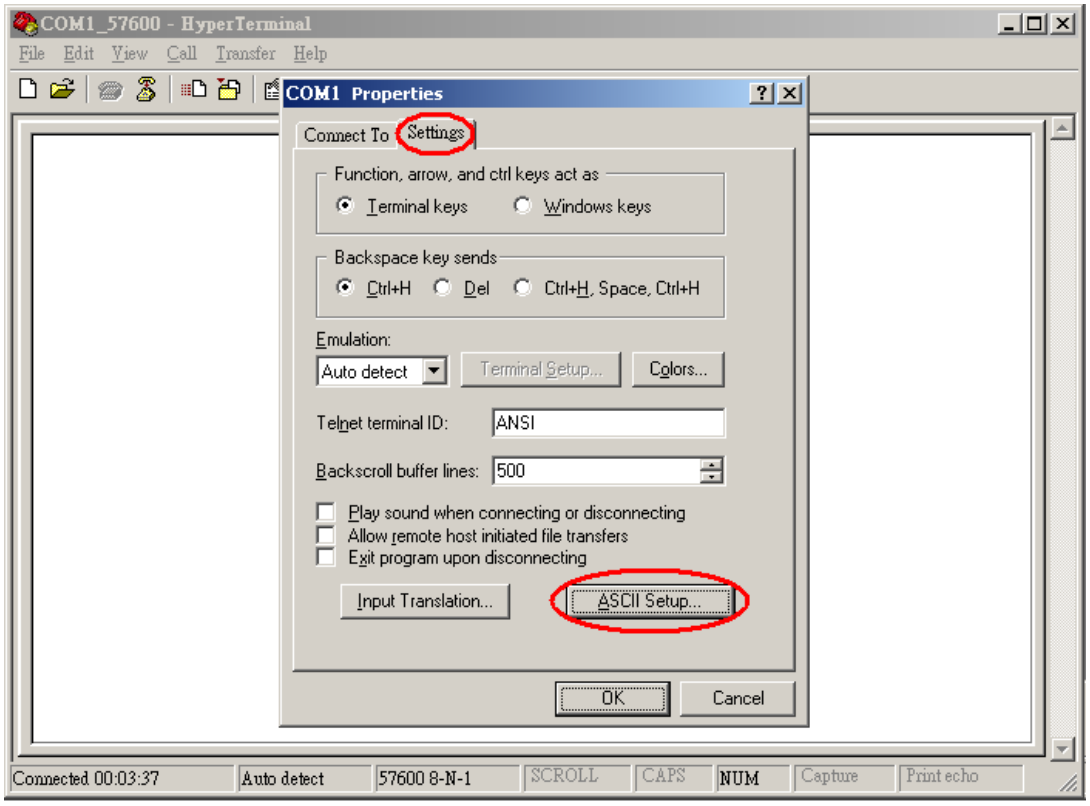
(4) Choose 57600,8,N,1 None flow control properties and click [OK] button.



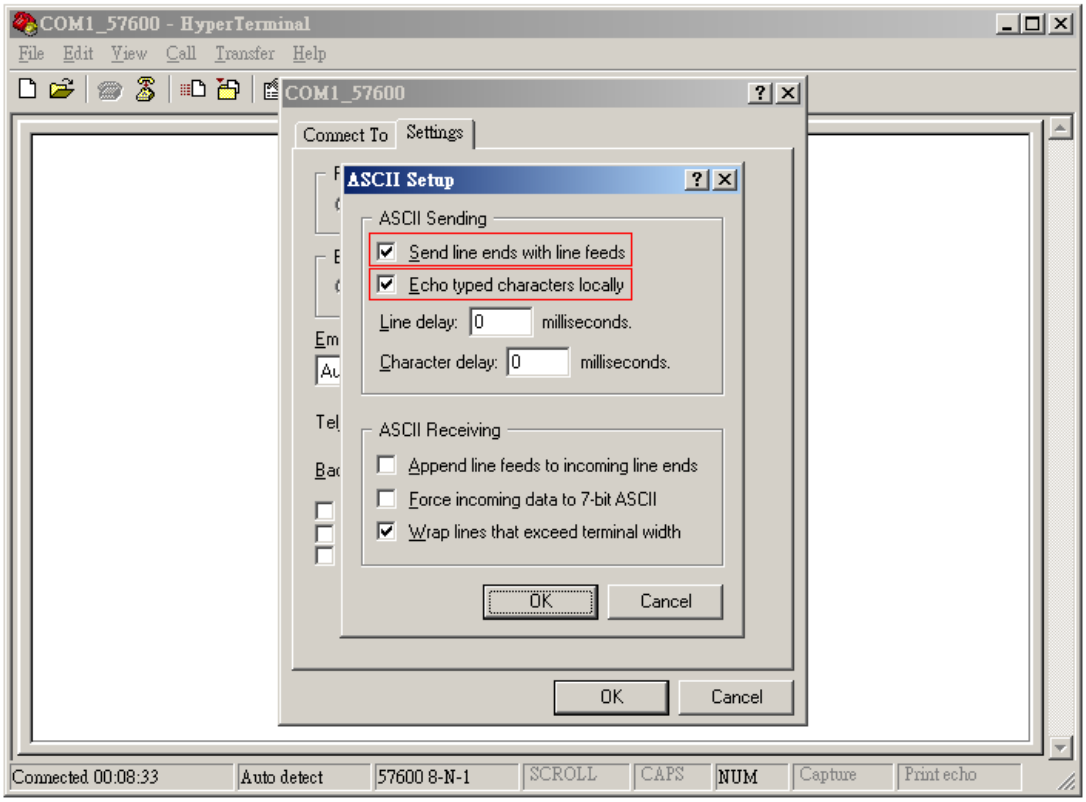
(5) Click [File]→[Properties]



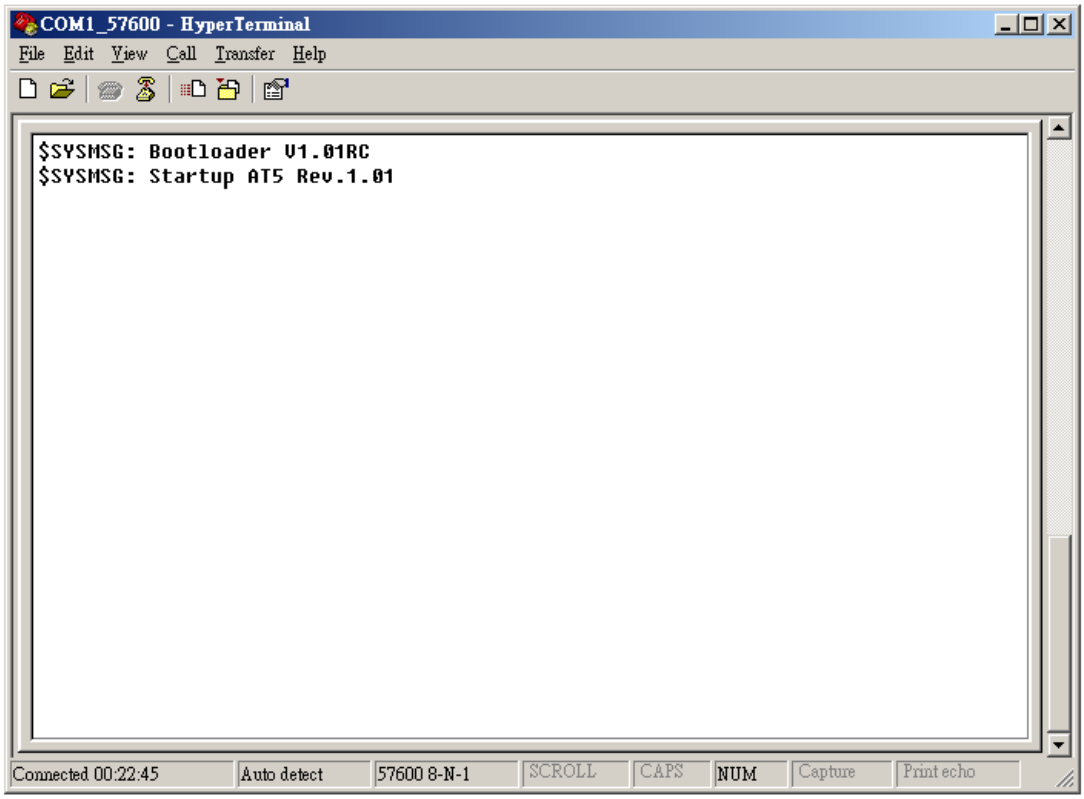
(6) Click [Settings] tab and [ASCII Setup…] button



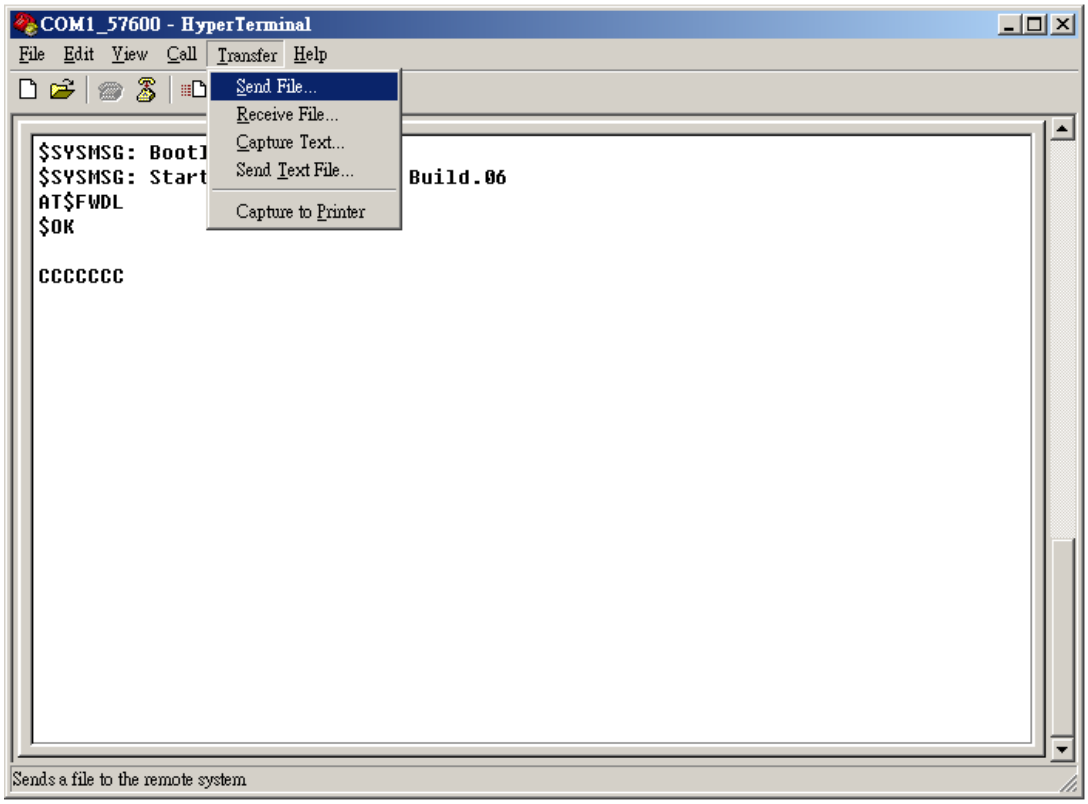
(7) Checked the following option and click [OK] button



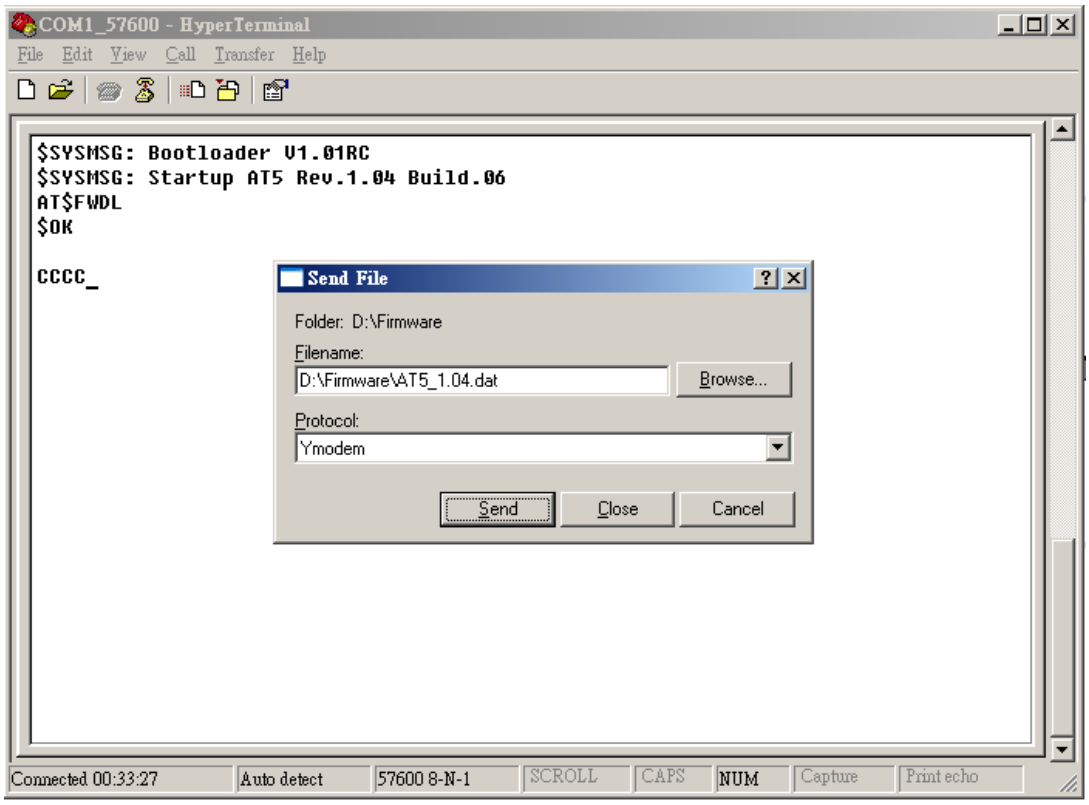
(8) Power ON the device. The startup message will show on the screen.



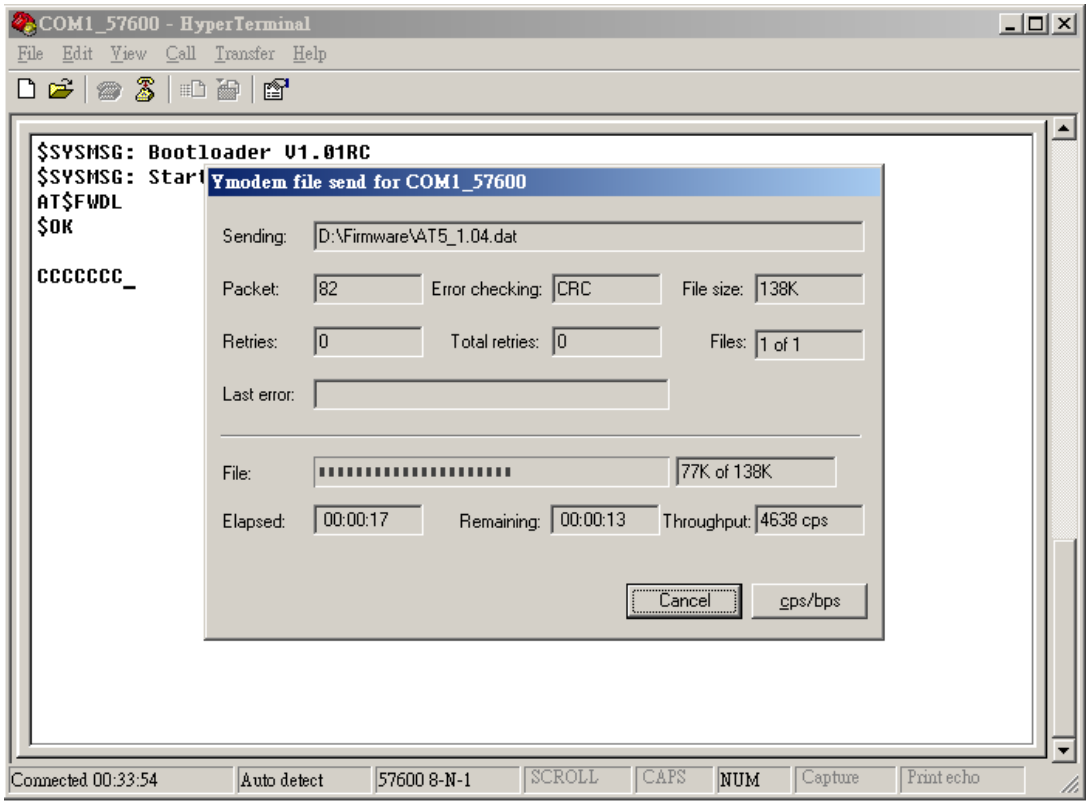
(9) Type “AT$FWDL” command and press [Enter] key. Choose [Transfer]→[Send File…]



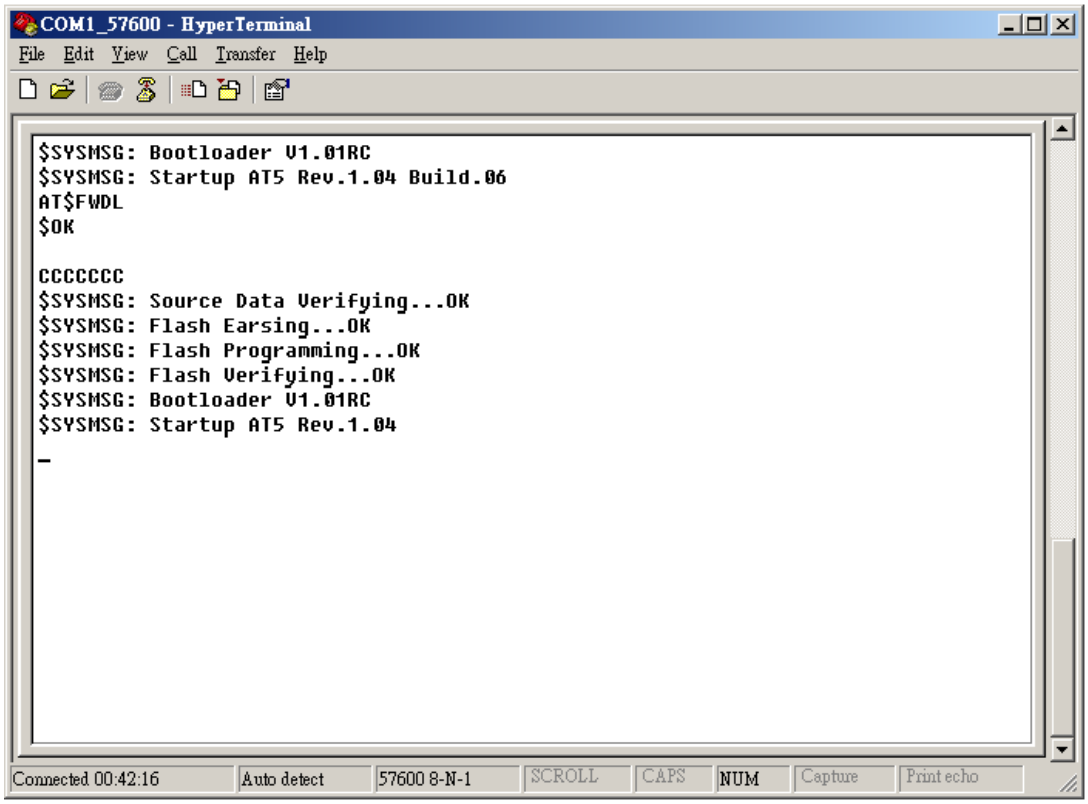
(10) Choose the firmware filename which is provided by ATrack and select [Ymodem] Protocol option and click [Send] button.



(11) When [Send] button is clicked, the file transfer progress will show as below:



(12) When file sending is completed, the device will program and restart itself automatically.



4. Appendix

4.1. Hardware Specification

AT5/AT5i		
Physical Characteristics		
Dimension		100 * 65 * 26 mm
GSM Module		Telit GE865-Quad
	Frequency Bands	850/900/1800/1900
GPS Module		Atheros
GSM and GPS Antennas		SMA Connector Type
Accelerometer		Built-In 3-Axis @ $16G_{MAX}$
Audio Amplifier		Built-In
Real-Time Clock		Built-In
Memory Capacity		8MB
Casing		Aluminum alloy
Electrical Characteristics		
Power Source		8-40 VDC
Power Consumption	Operational	Max. 200mA @ 12VDC
		Max. 150mA @ 24VDC
	Sleep	0.12mW
I/O Characteristics		
Device I/O Ports	Positive Inputs	2 (Triggering voltage: 3.7 ~ 40V)
	Negative Inputs	2 (Triggering voltage: 0 ~ 0.8V)
	Analog Input	1 (0 ~ 40V with 10-bit resolution)
	Negative Outputs	3 (Open Collector Type @ $300mA_{MAX}$)
Serial	Configurable	1
	Baud rates	1200, 2400, 4800, 9600, 19200, 38400, 57600,
1-Wire		1
Environmental Characteristics		
Operation	Temperature	-30 ~ +65°C
Storage	Temperature	-40 ~ +85°C
	Relative Humidity	5 ~ 95%

4.2. FCC Regulations:

● This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

● This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user‘s authority to operate the equipment.

▸ RF Exposure Information

This device meets the government’s requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

● This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.