ACKSYS DTUS040 Firmware Tunnel UDP For Cometh Range User Guide

Contents

ACKSYS
COMMUNICATIONS & SYSTEMS

ACKSYS DTUS040 Firmware Tunnel UDP For Cometh Range

Specifications

- **Product Name**: Download Firmware User Guide
- **Model Number**: DDTTUUS004400
- **Release Version**: A-04
- **Release Date**: March 2, 2004
- **Manufacturer**: Acksys
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INTRODUCTION

Goal

The goal of this documentation is to explain how to

- upgrade an existing firmware1
- add a new firmware

into your COMETH device. For this operation, a telnet client and a tftp client (see in CD for tftp client for Windows) are necessary.

Conventions used

We will assume that the COMETH parameters are the factory defaults:

- Default IP Address 192.168.1.253 is affected by a COMETH. If your COMETH IP address is different, replace it with your IP address.
- The default administrator login name is “root”. If you changed the administrator login name, change the commands appropriately.

The prompts displayed by the COMETH are represented by normal fixed-size characters. The commands that you should enter are represented by bold fixed-size characters. After entering a command you must press the “enter” key. In the commands, some parameters may vary: they are represented by italic characters. You must replace these parameters with the actual value you wish to give them.

SOFTWARE ARCHITECTURE

A special firmware called “Download firmware” provided by ACKSYS allows you to download new firmware or to update an existing one thanks to the TFTP application. Segments The COMETH EEPROM flash is divided into 6 segments :

- 2 are reserved by ACKSYS and contain the download firmware and a backup copy (segments 0 and 1). It is more advisable to not use the backup copy. The backup copy is useful if COMETH detects bad data or a checksum error in segment 0. In this case, it automatically loads the DOWNLOAD firmware from segment 1 instead of segment 0.
- 4 are available for functional firmware (Segments 2 to 5).

Each segment is identified by :

- A location name (/0 to /5) (indicates the memory segment).
- A product name (SERVERCOM, TUNNEL, MODBUS…).
- A release number.
- A status (Status “not valid” indicates a free segment).

Firmware
Acksys provide four firmwares at the time of writing :

- **SERVERCOM** : To use cometh in TCP raw server mode, telnet RFC2217 or telnet server mode.
- **TUNNEL**: To do a point-to-point connection between two COMETH devices in UDP mode.
- **MODBUS**: MODBUS TCP/Serial gateway. (A license is necessary to download this firmware).
- **TCP CLIENT** To use cometh in TCP raw client mode.

New firmware upgrades are available on the Acksys website (**www.acksys.fr**).

RUNNING THE SERIAL PORT ADMINISTRATION
There are three ways of accessing the administration system, depending on the product you are using. On all kinds of COMETH and WL-COMETH, you can activate the administration system through the LAN or WLAN interface, provided that you know the IP address of the device. This is described in the relevant hardware documentation and is not described further here. On the COMETH range (Ethernet to serial products), and on WL-COMETH built before March 2004, you can activate the administration system by attaching a terminal to the RS232 serial port as described in the following section: « Administration by a RS232 terminal (COMETH & early WL-COMETH) » On the WL-COMETH (Wifi to serial product) built after march 2004, you can activate the administration system by attaching a SLIP link to the RS232 serial port as described in the following section: « Administration by a RS232 SLIP link (recent WL-COMETH only) ». This method enables you to download firmware

upgrades through the RS232 port. To help you identify the kind of serial administration you must use, please refer to the next section « Distinguishing terminal-enabled from SLIP-enabled administration ».

Distinguishing terminal-enabled from SLIP-enabled administration
This procedure only applies to the WL-COMETH, since other COMETH models can only use terminal-enabled administration when administering from the RS232 port. Also, the SLIP administration is provided only in the DOWNLOAD firmware.

- **Select Administrator mode:** Push the switch towards the « Admin » position. In less than 10 seconds the orange (DIAG) light begins to blink twice per second.
- **Connect a terminal to the RS232 port:** Below we describe how to do this with a PC with Windows. Other devices (ANSI console…) or operating systems (Linux with “minicom” or “cu”…) can be used, but this is beyond the scope of this manual. The WL-COMETH has one male DB9 RS232 connector with DTE cabling. You can use the provided null modem cable and plug it directly, into a standard DB9 male connector (PC COM port for example)
- **Run Hyperterminal at 115200 bauds:** When Hyperterminal asks to choose a modem or port, select a direct connection to COMx (COMx being the COM port on which you plugged the WL-COMETH). Select the following port parameters:115200 bauds (bits/second), 8 bits, parity none, 1 stop bit, no, and flow control. Hyperterminal now displays a blank window. Hit the « C » key (UPPERCASE “C”). If the WL-COMETH answers “CLIENTSERVER”, the WL-COMETH is in SLIP administration mode.

Administration by a RS232 terminal (COMETH & early WL-COMETH)

Select Administrator mode
Push the switch towards the « Admin » position. In less than 10 seconds the orange (DIAG) light begins to blink twice per second.

Connect to a serial port.
Below we describe how to do this with a PC with Windows. Other devices (ANSI console…) or operating systems (Linux with “minicom” or “cu”…) can be used, but this is beyond the scope of this manual. The WL-COMETH FIELD has one male DB9 RS232 connector with DTE cabling. You can use the provided null modem cable and plug it directly, into a standard DB9 male connector (PC COM port for example)

Run Hyperterminal at 2400 bauds
When asked to choose a modem or port, select a direct connection to COMx (COMx being the COM port on which you plugged the WL-COMETH). Select the following port parameters: 2400 bauds (bits/second), 8 bits, parity none, 1 stop bit, and o flow control. Hyperterminal now displays a blank window. Hit the « ENTER » key to display the admin prompt.

Administration by an RS232 SLIP link (recent WL-COMETH only)
Administration by SLIP is supported by the DOWNLOAD firmware starting from version 3.4.2.4 on the WL-COMETH. If you have an older version, you can download the latest one on the Acksys website.

Select Administrator mode
Push the switch towards the « Admin » position. In less than 10 seconds the orange (DIAG) light begins to blink twice per second.

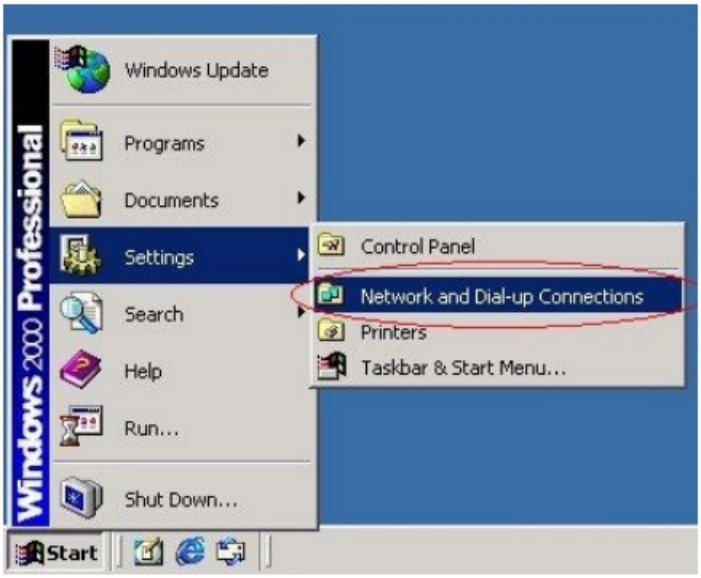
Connect to a serial port.
Below we describe how to do this with a PC with Windows. Other operating systems (Linux…) can be used, but this is beyond the scope of this manual. The WL-COMETH has one male DB9 RS232 connector with DTE cabling. You can use the provided null modem cable and plug it directly, into a standard DB9 male connector (PC COM

port for example)

Configure a SLIP connection.n
Windows 9x and Windows Me do not handle SLIP connections, you cannot use them to configure this recent WL-COMETH DOWNLOAD firmware. For other operating systems (Windows 2000, XP, Linux…) you must set your SLIP connection with these parameters 115200 bauds, 1 stop bit, 8 data bits, no parity, no flow control (neither hardware nor software), and no authentication. We explain below the SLIP configuration for Windows 2000/XP/NT 4. Screenshots are dependent on the Windows version and service pack.

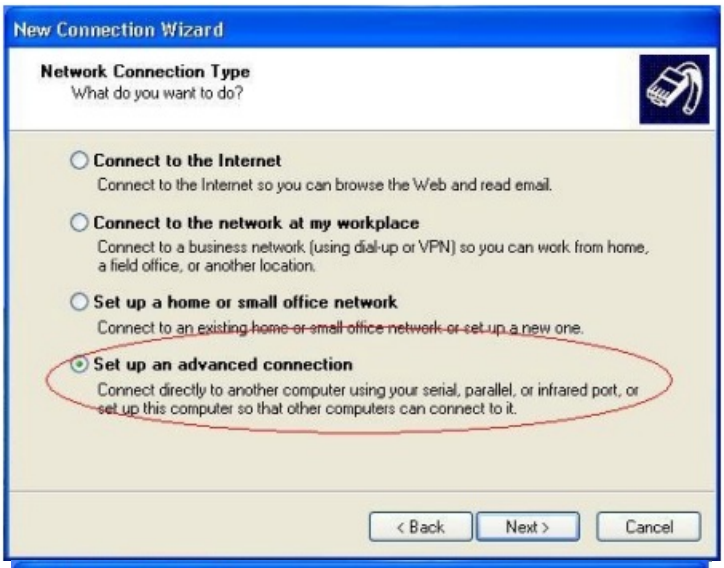
SLIP Configuration on Windows 2000/XP

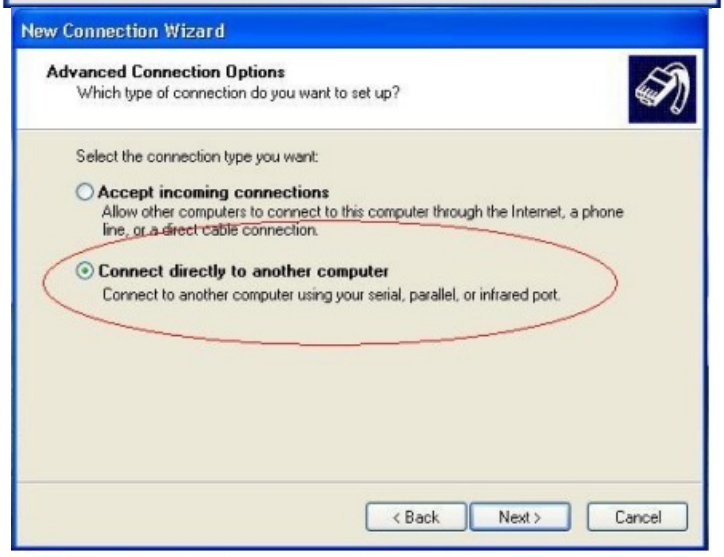
1.

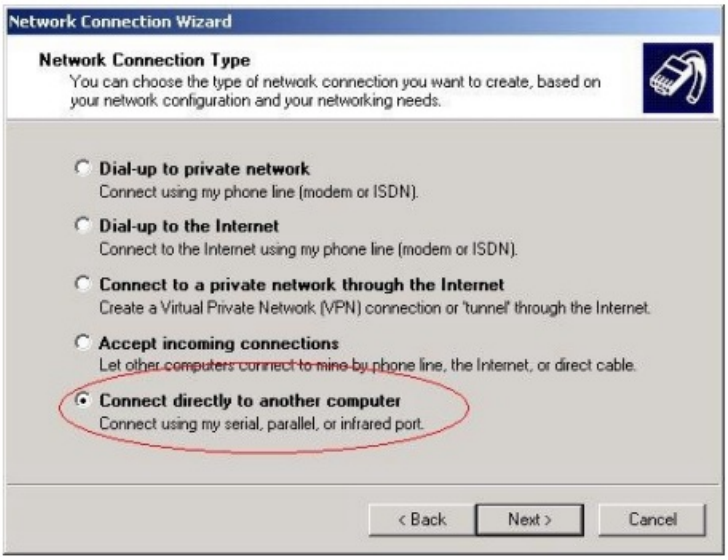


start | settings | Network and Dial-up Connections

2. Open Network and Dial-up Connections
3. Double-click the icon Make New Connection.
4. This will open a Network Connection Wizard, and click Next.
5.

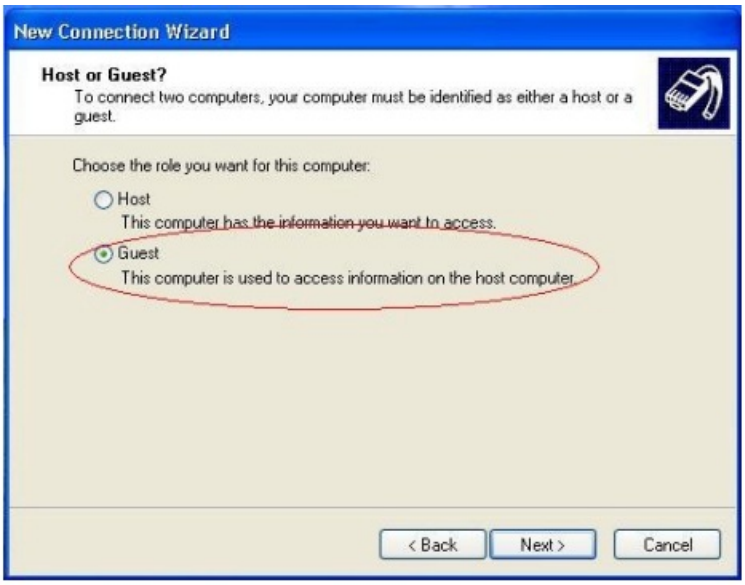






Check connect directly to another computer and click Next.

6.



Check Guest and click next.

7.

Select the Communication cable between two computers (COM1), and click Next.

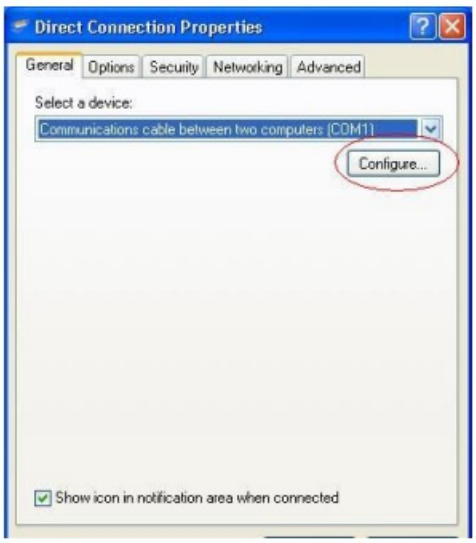
8. Select if you want to share this connection with all users, and click Next.
9.

Click on the button finish.

10.

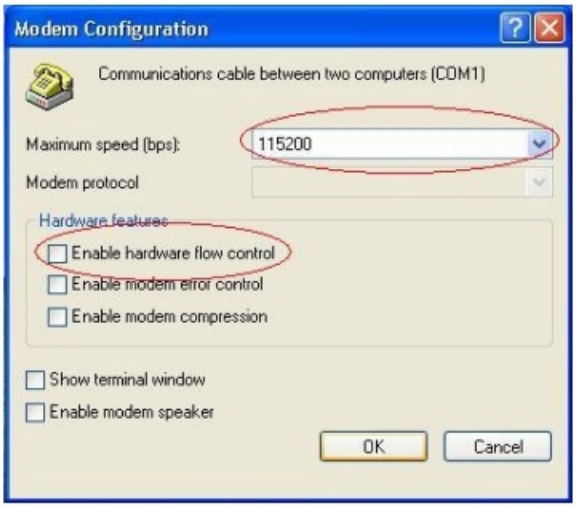
At this time you must have a connection dial-up window.

11. Click on the Properties button.
12.



In the general tab, click on the configure button.

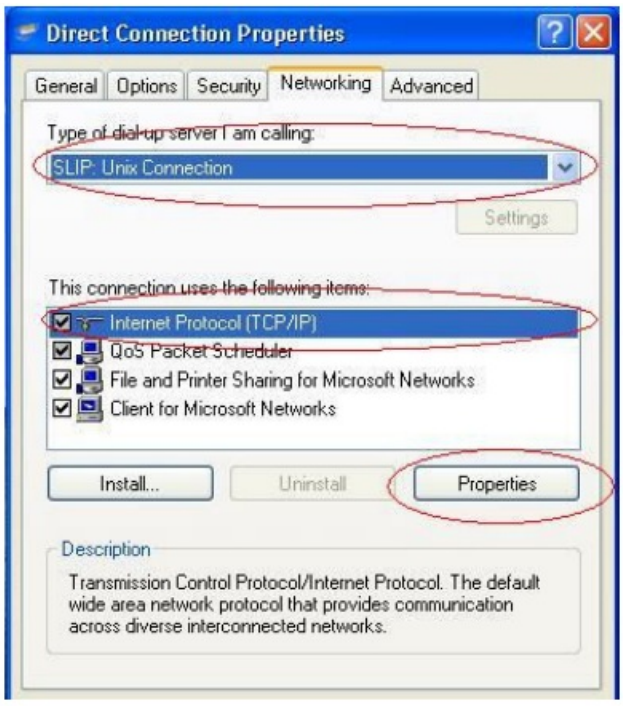
1. Select 115200 for the maximum speed of the connection.
2.



Uncheck Enable hardware flow control.

13.

In the options tab, uncheck Prompt for name and password, certificate, etc.

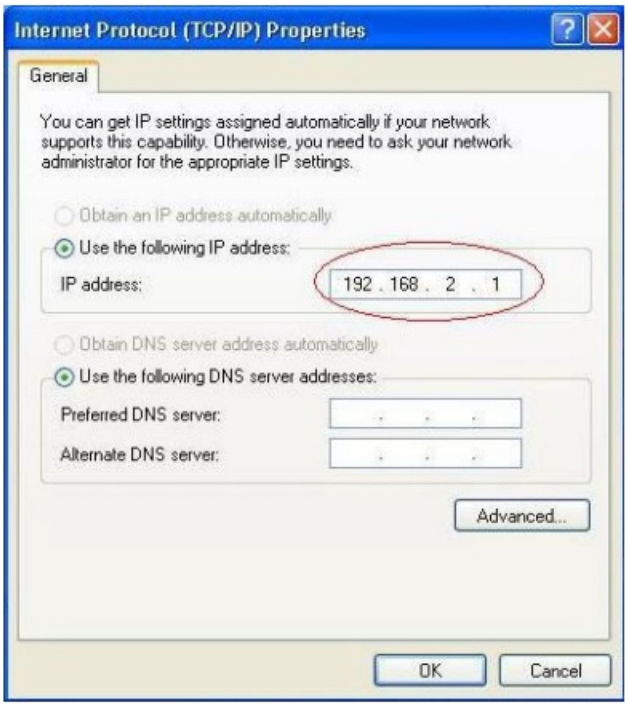
14. in the Networking tab
    1. Select in server type SLIP: unix connection.
    2. 

Select Internet protocol (TCP/IP) and click on the Properties button.

1. Enter the IP address. For example, enter 192.168.2.1

   Note: The network part of the chosen IP address must not be already used by another network connection (such as a LAN card).

2.



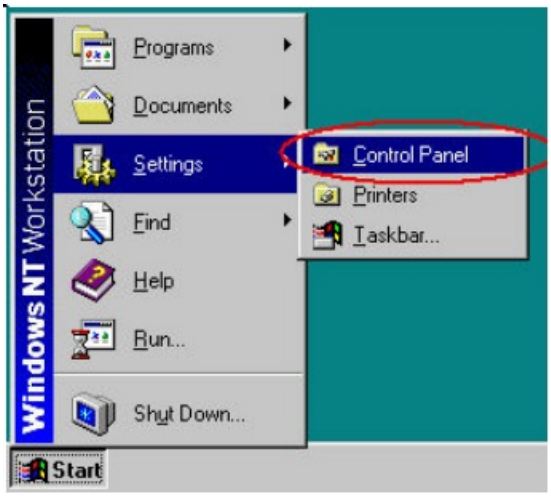
Click on the Ok button.

3. Click on the Ok button and

15. connect to WL-COMETH with the connect button.

SLIP Configuration on Windows NT

1.

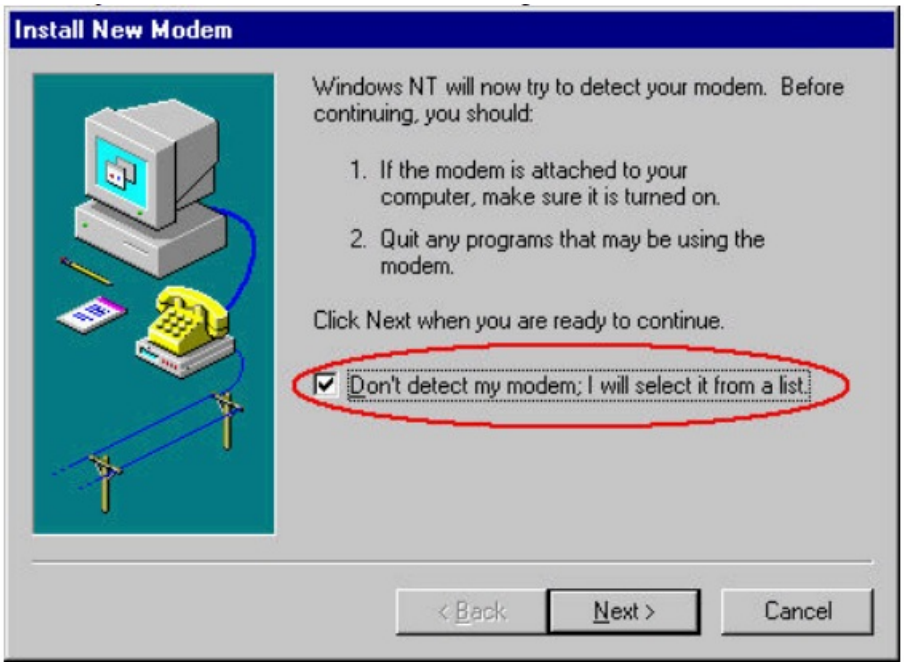


Start | Settings -| control panel

2.

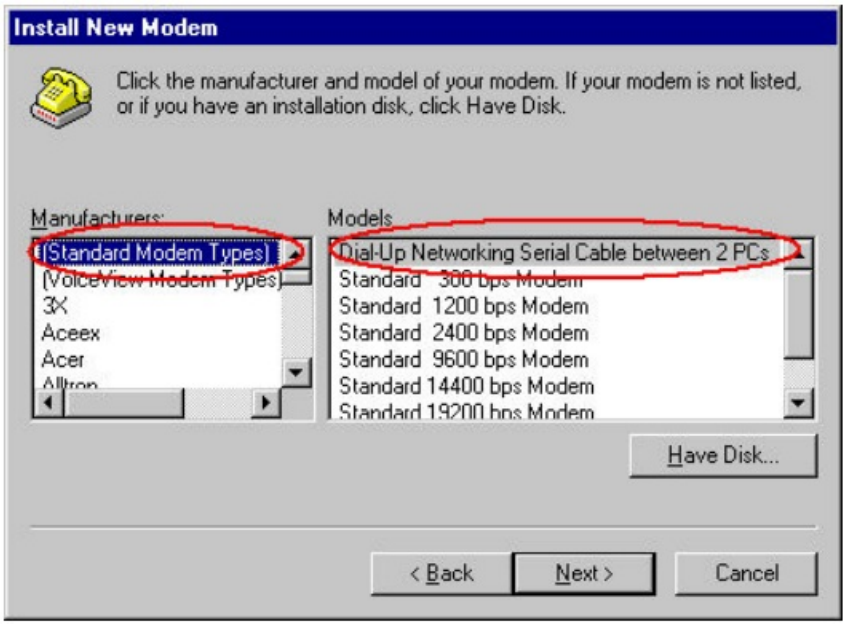
click on the modem icon

3.



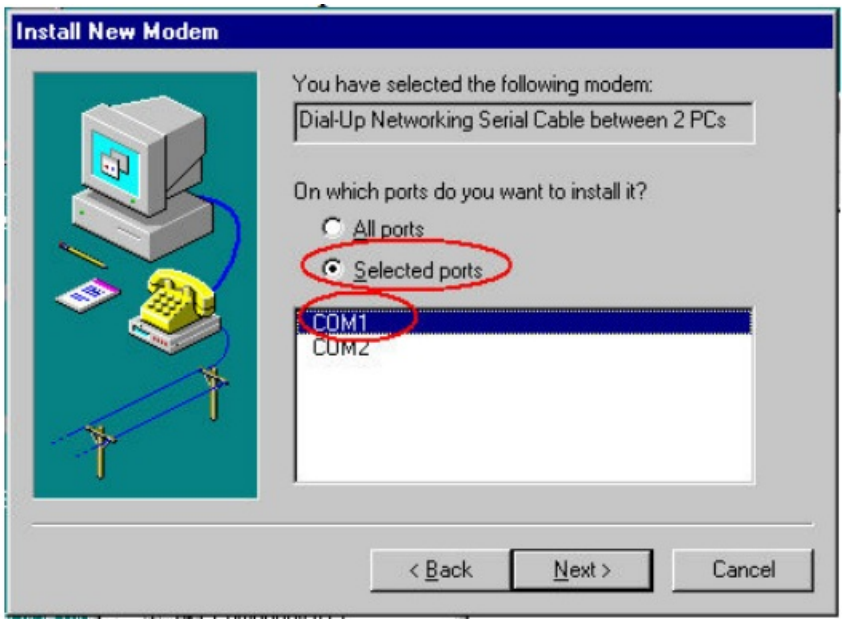
check don’t detect my modem; I will select it from a list and click the next button

4.



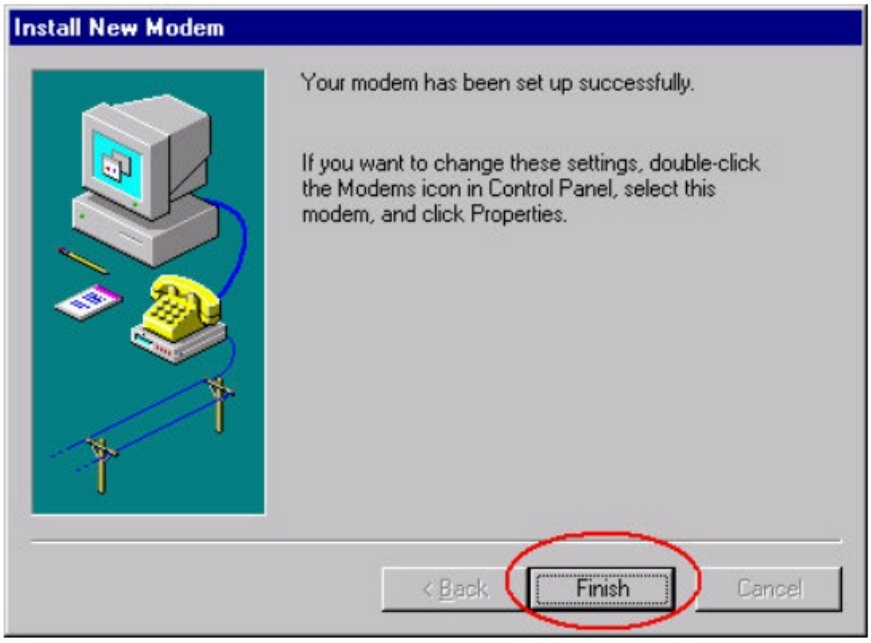
Select Standard Modem types, Dial-Up Networking cable between 2 PCs and click next

5.



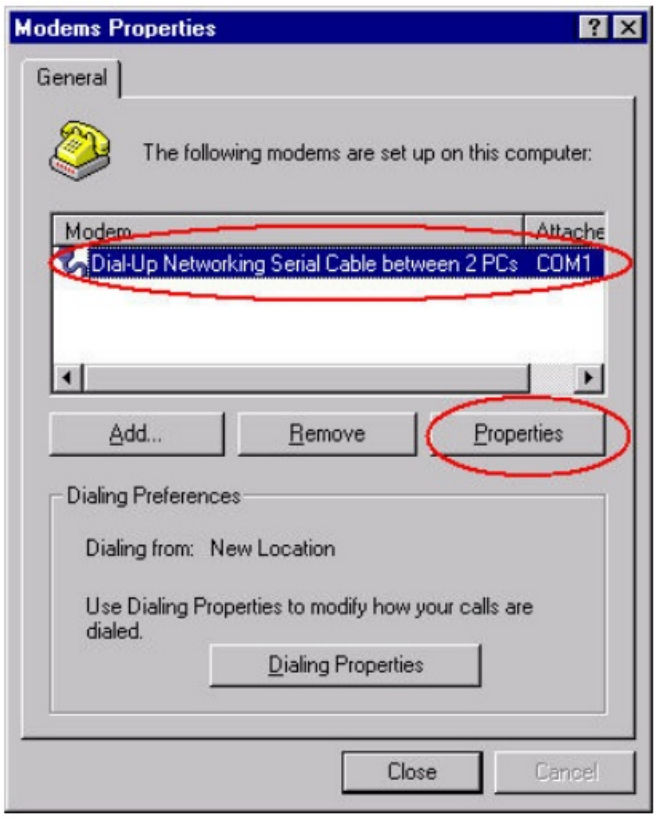
Check selected ports and select the port the WL-COMETH is connected to

6.



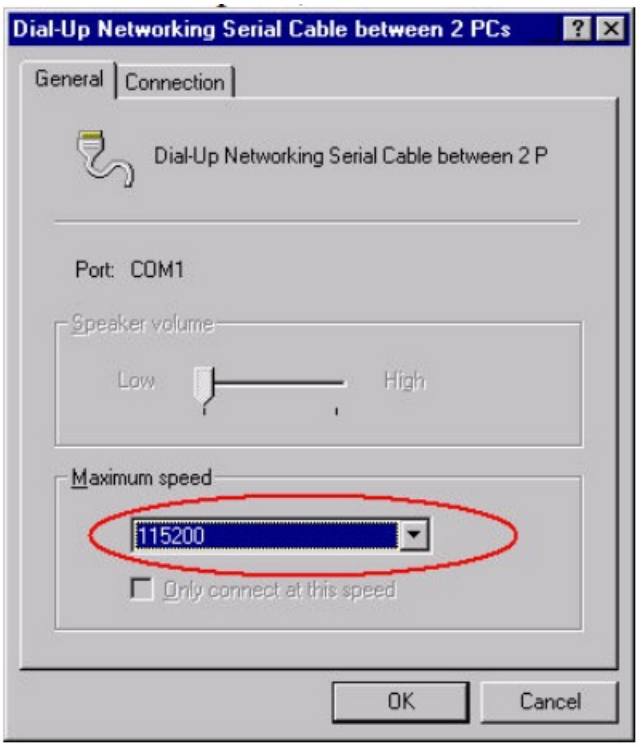
click on the Finish button

7.



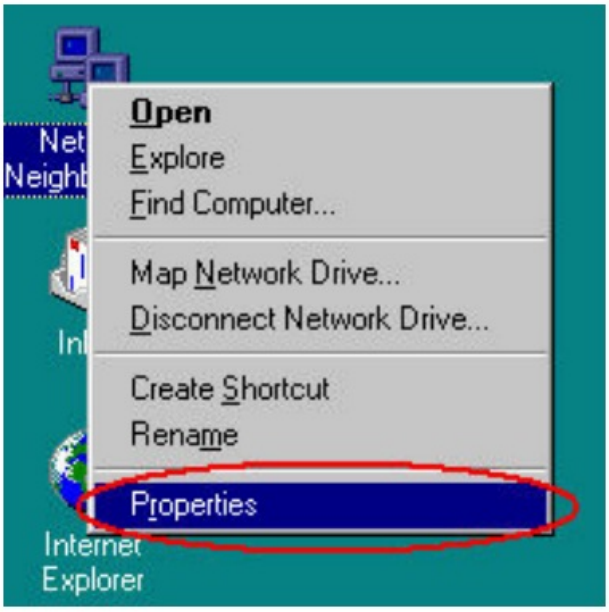
Select your new modem, and click the Properties button

8.



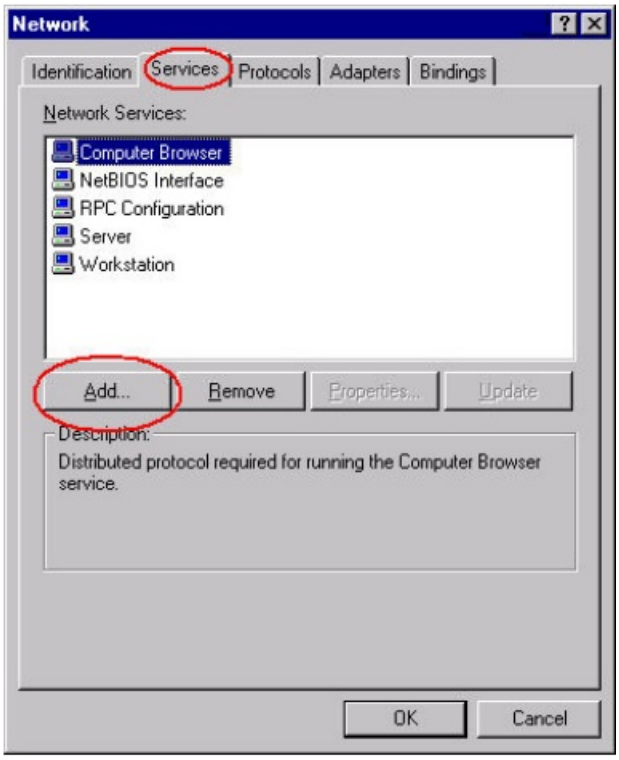
Select 115200 baud for maximum speed, click OK, and the Close button

9.



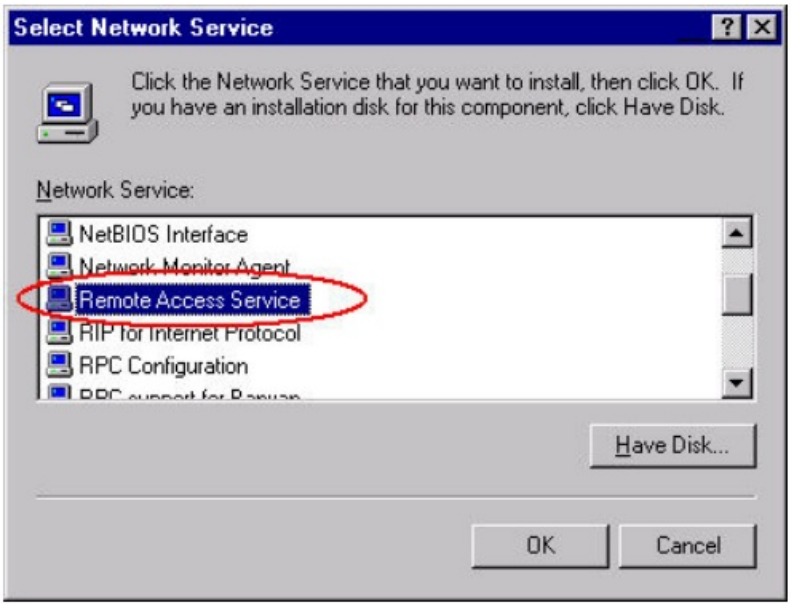
Open the network properties

10.



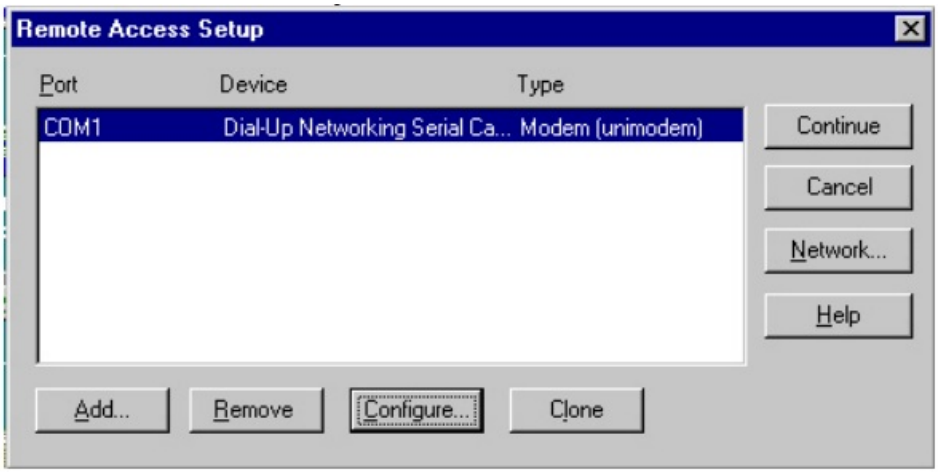
Select the Services tab and click the Add button

11.



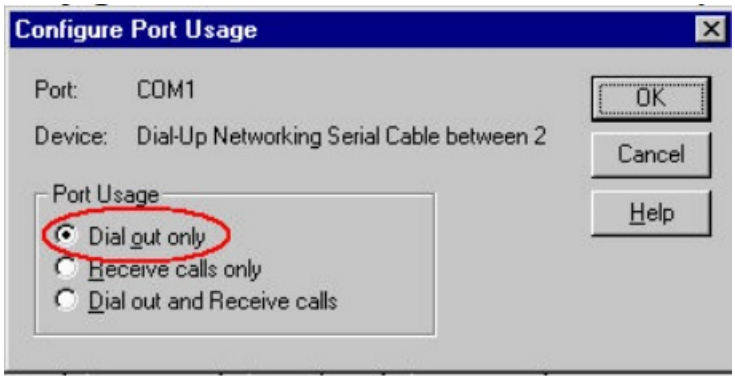
Select Remote Access Service and click OK

12.



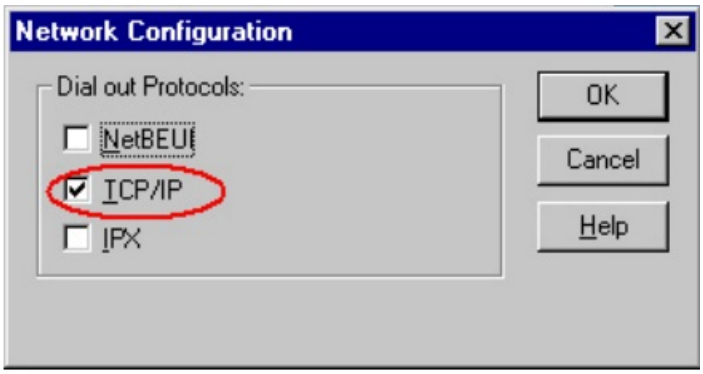
When the installation is finished, you have this window

1.



Click on the configure button and check Dial out only

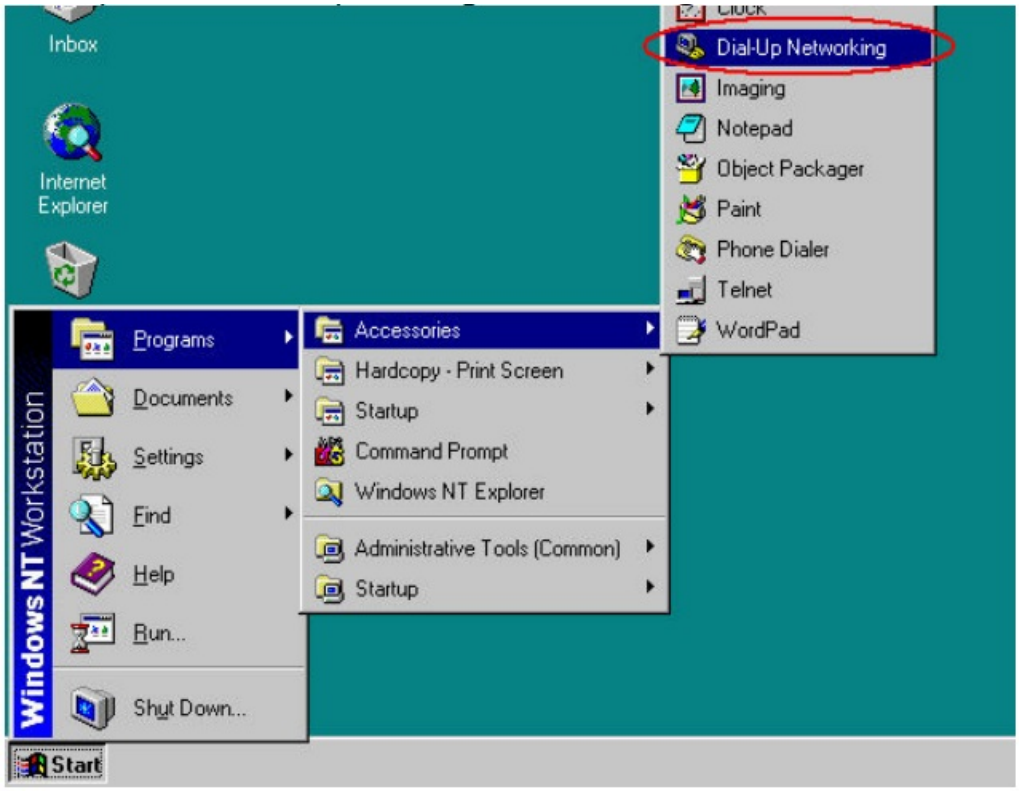
2.



Click on the Network button, and check TCP/IP protocol then OK

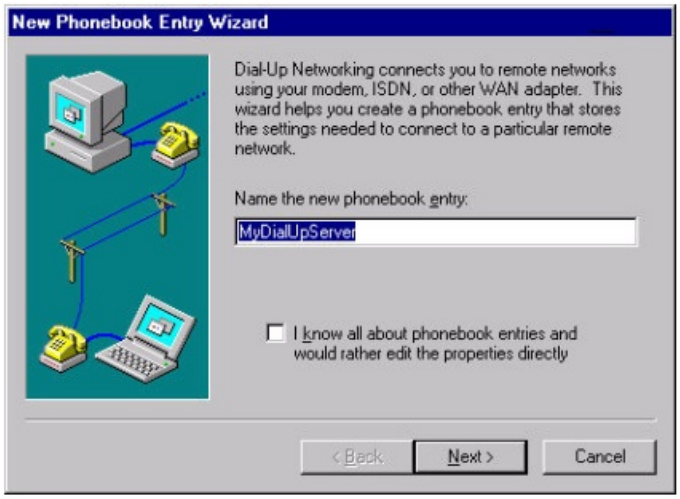
3. Click on the Continue button, and restart the computer.

13.



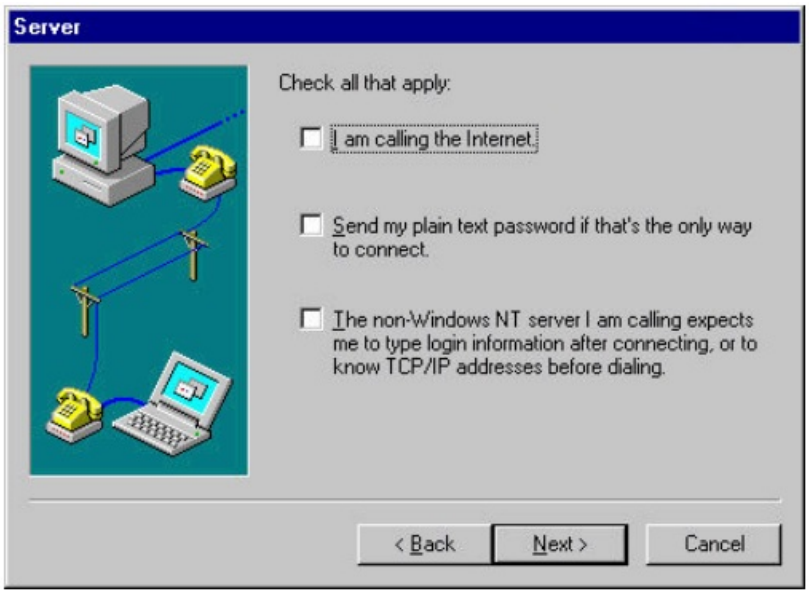
Start | Programs | Accessories | Dial-up networking

14.



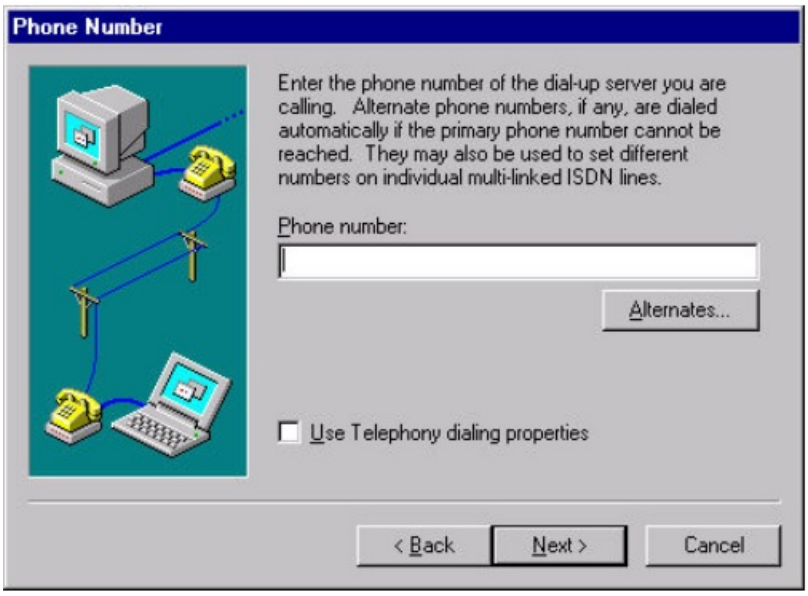
Click on the Next button

15.



Click on the Next button

16.

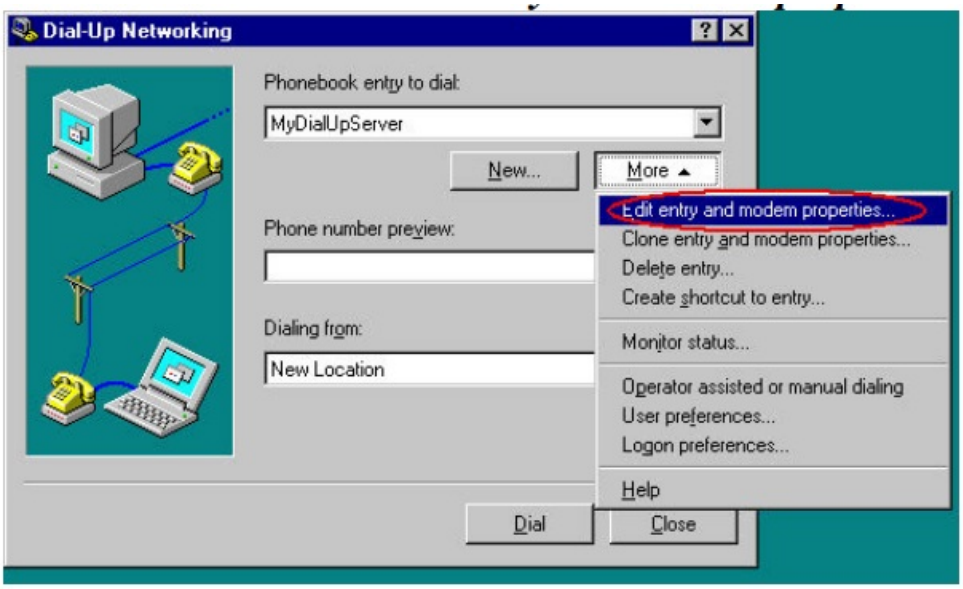


Click on the Next button

17.

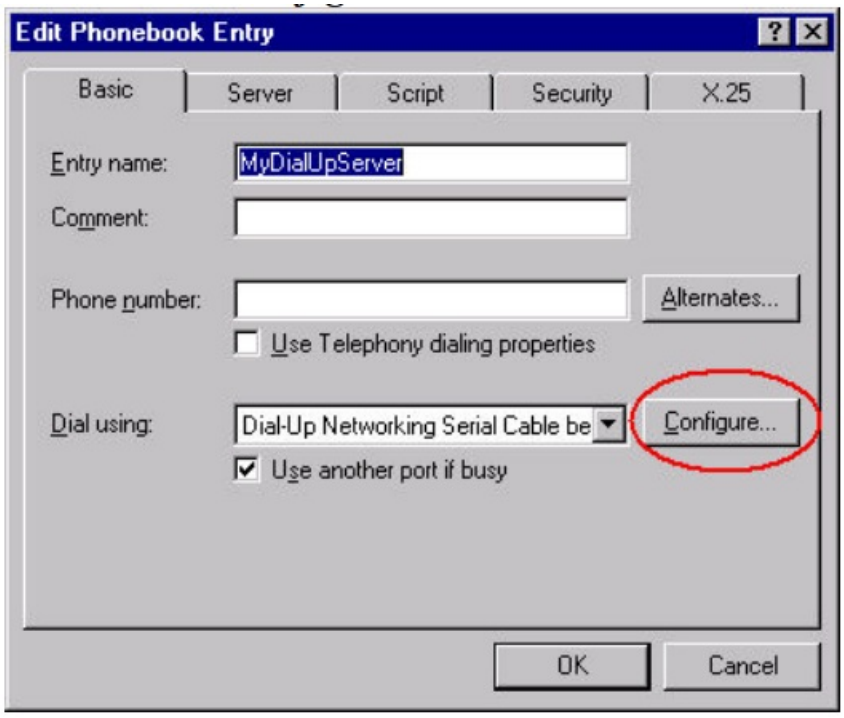
click on the Finish button

18.



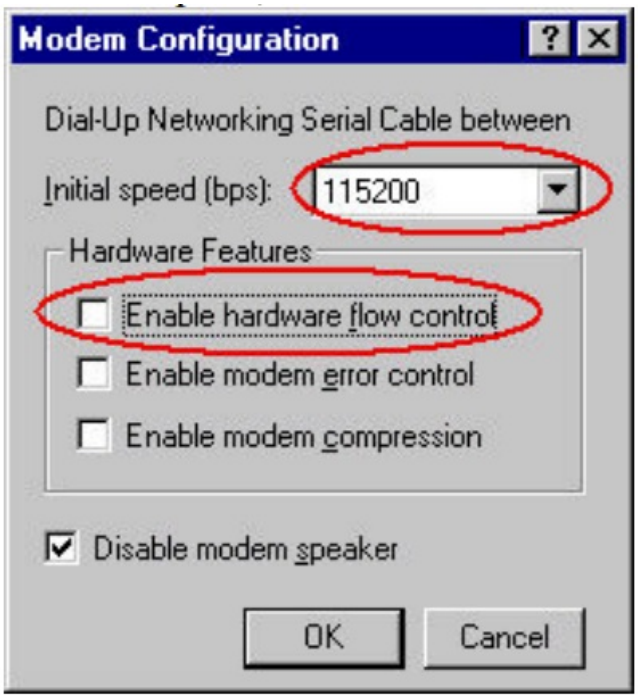
click on the More button and select Edit entry and modem properties

19.



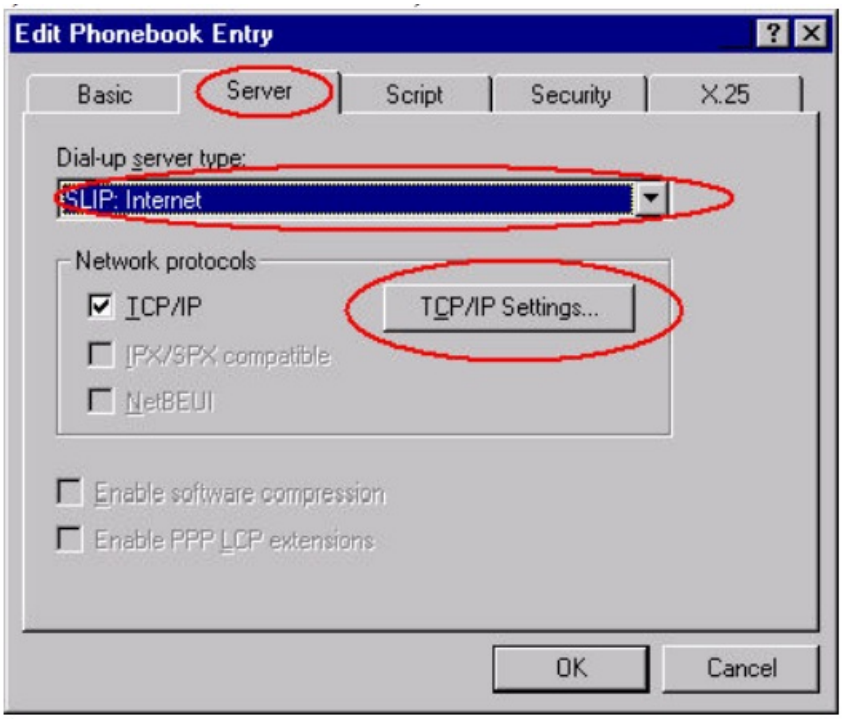
On the Basic tab, click on the Configure button

1.



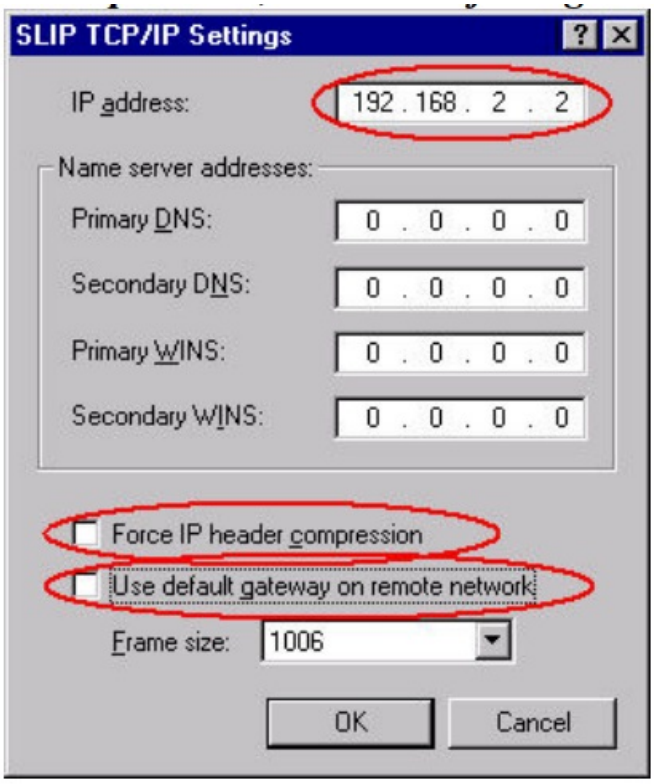
Select 115200 for initial speed, and uncheck Enable hardware flow control

20.



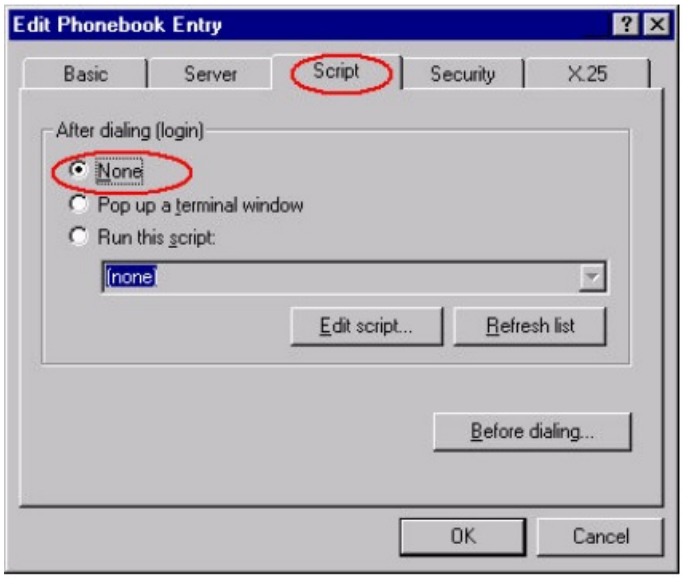
On the Server tab, select SLIP: Internet, and click on the TCP/IP Setting button

1.



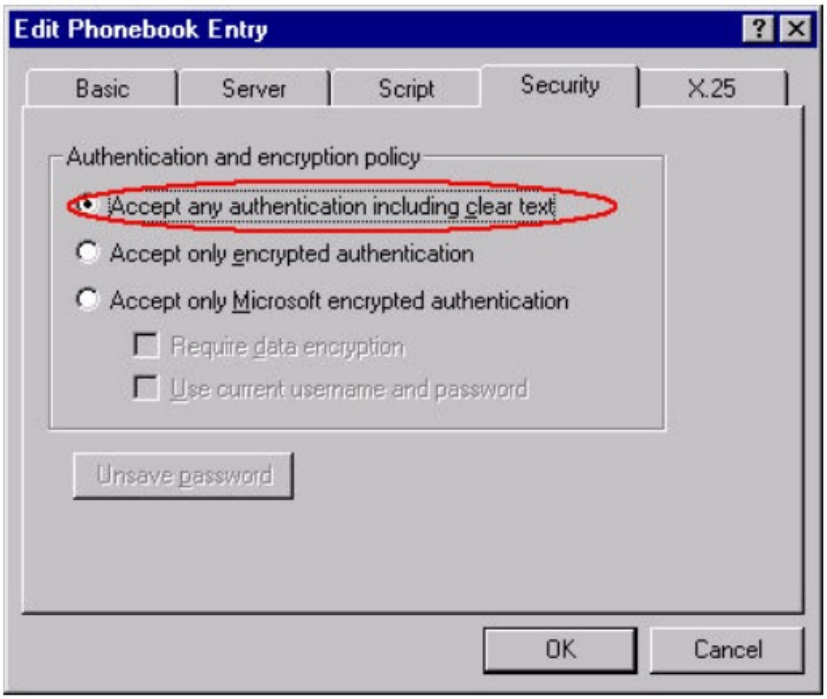
Enter the IP address of the computer (for example 192.168.2.2), uncheck Force IP header compression, and Use the default gateway on the remote network

21.



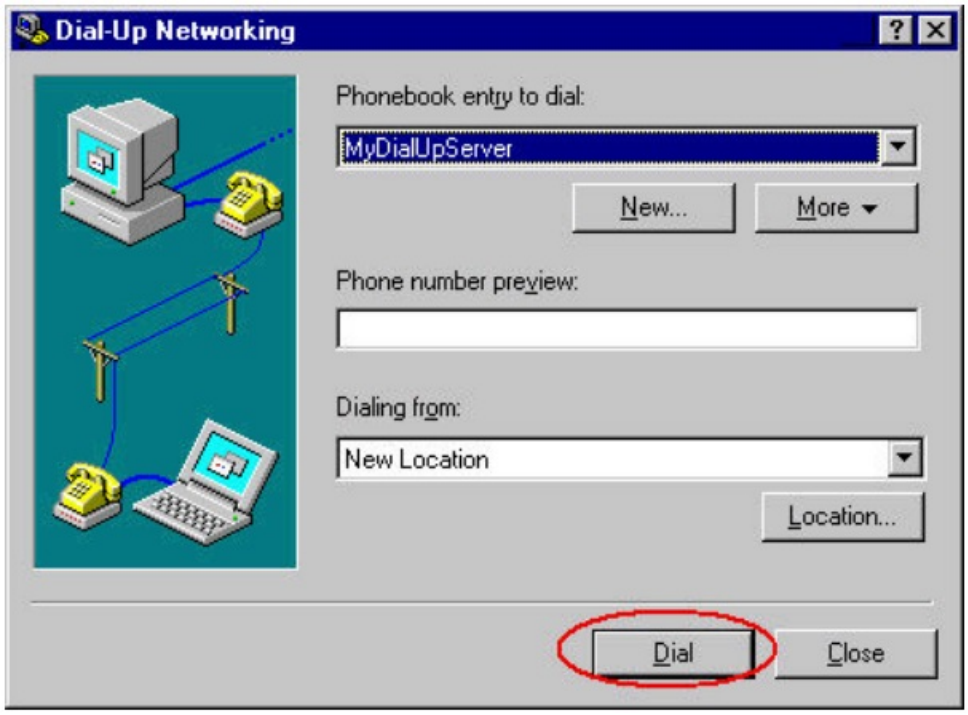
On the script tab, check None.

22.



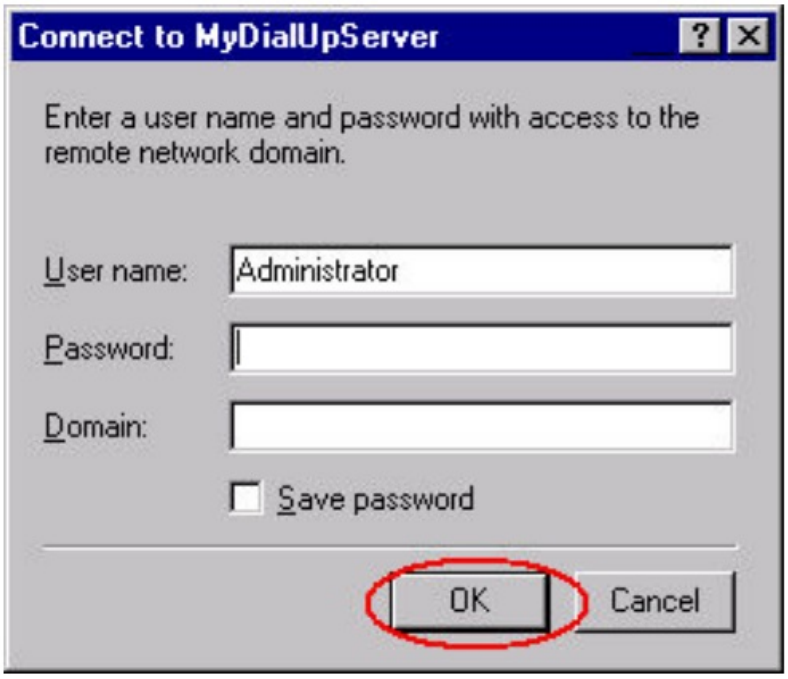
On the Security tab check Accept any authentication including clear text and click OK

23.



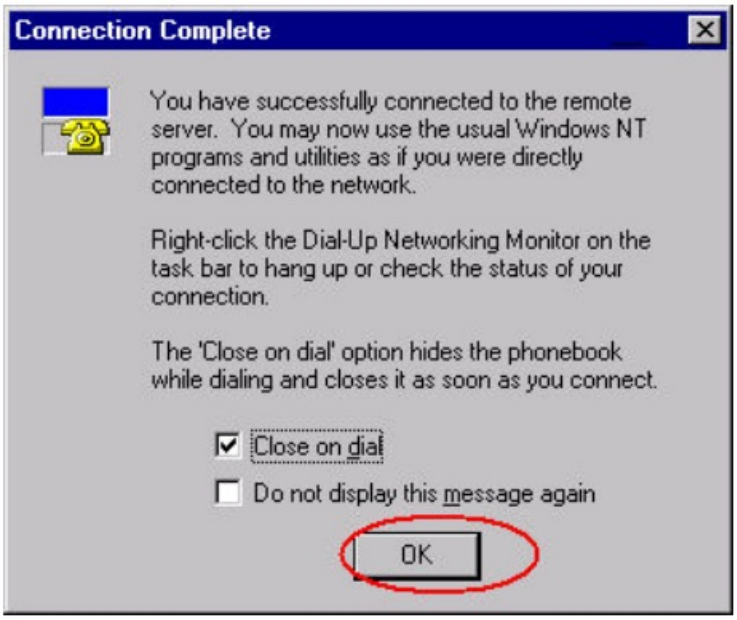
Click on the Dial button

24.



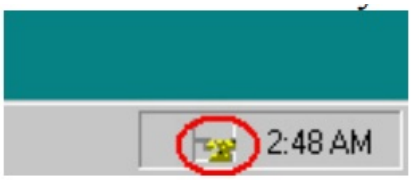
click on the OK button

25.



Click on the OK button

26.



If the connection is ready, you can see an icon in the system tray.

Use the SLIP connection.

Run the SLIP connection on your computer (for SLIP configuration see section “ SLIP Configuration on Windows 2000/XP ” or “ SLIP Configuration on Windows NT ”) When the SLIP connection is ready you can check it with the PING command. For instance, If the SLIP IP address on the PC side is 192.168.2.1, WL-COMETH will respond to any IP address in the range 192168.2.2 to 192.168.2.254.

Example:

- C:\>arp –d 192.168.2.3

- C:\>ping 192.168.2.3
- Pinging 192.168.2.3 with 32 bytes of data :
- Answer from 192.168.2.3 : bytes=32 time<10ms TTL=64
- Answer from 192.168.2.3 : bytes=32 time<10ms TTL=64

Your WL-COMETH is ready for SLIP administration. To obtain the administration command prompt, type the command “telnet 192.168.2.3” from the command prompt. You can also use the TFTP command to upgrade the WL-COMETH firmware. If the PING command results in an error, check the SLIP link configuration. Also, make sure that your WL-COMETH supports SLIP administration.
NOTE: Ping syntax and resuldependds on the operating system type and version.

ADMINISTRATION COMMANDS

To download a firmware into the COMETH, use the following administration commands.

Log in
All the « set… » commands require the administrator to be identified beforehand.
Type :
> login root
password: root (the password displays as “****”)
root>

Display information about firmware
To display information about the firmware located in segment Seg (Seg is a segment number ranging from 0 to 5)
Type: show prog info Seg
The following information is displayed:

- **file** : (understand segment) any value from /0 to /5
- **status**: valid or not valid (status “not valid” indicates a free segment or a d firmware.
- **name**: ASCII name of the firmware
- **version**: Release of the firmware
- **update software minimum version**: Minimum necessary release of the download software to enable this firmware update

Display information about all firmware
To display the information about all 6 segments
Type: show prog list
This command is equivalent to 6 consecutive « show prog info Seg» commands, with Seg ranging from 0 to 5.

Enable firmware
To activate/enable the firmware located in segment Seg (Seg is a segment number ranging from 0 to 5)
Type: root> set prog enable Seg
The firmware will be activated after saving the configuration and a COMETH restart.

Delete firmware
To delete firmware located in segment Seg (Seg is a segment number ranging from 2 to 5).
Type: set prog clear Seg
This command returns an error if Seg equals 0 or 1 since the download firmware cannot be deleted.
WARNING, the firmware is deleted immediately, without further notice.

Show enable firmware

To see the current activated firmware.
Type: show prog enable
You can see :

- enable software : S1 (S1 is the segment)
- loading software : S2 (S2 is the segment)
- OK
- >

Notes

- Enable software is the current activated software.
- Loading software is the firmware that will be activated after the ext cometh reboot.

Reserved commands
The following two commands are not available for general use. They are reserved for factory testing. They are documented here only for completeness. To allow loading of internal memory from preselected firmware.
Type: set start
This resets the flag that inhibits the replacement of DOWNLOAD-PROD. To display the information about all 6 segments
Type: show prog data Seg
This command is equivalent to « show prog info Seg », but its output is in a format easily parsable by a computer program.

DOWNLOADING IN 3 STEPS…

Dealing with firmware parameters: when you download firmware, parameters common to all firmware will be retained, while the parameters specific to the firmware will be kept if the firmware is an upgrade of an existing firmware; otherwise, they will be reset to factory defaults.

Step 1: enable download firmware
Before downloading a new firmware, you must enable the DOWNLOAD firmware.

- On your computer, run a telnet client.

  C:\> telnet 192.168.1.253

  Telnet displays a banner and a prompt from the COMETH
- You must log in. (login factory setting is “root”)

  > login root
- You must enter a password for the root user, the password factory setting is “root”
- Locate the segment Seg where to download the firmware

  root> show prog list (see IV.3)
- Enable the DOWNLOAD firmware

  root> set prog enable 0
- Save the configuration change and reset to load the DOWNLOAD firmware

  root> save

  root> reset

Your cometh restarts. Please wait for the red LED to turn off. Note that the telnet client is now unusable until the

COMETH has restarted and TELNET is reconnected.

Step 2: download firmware into cometh

- To download the new firmware “filename.ftp” in segment number Seg into the COMETH at IP address xxx.Y.zzz.kg, the command syntax for MS Windows TFTP is :
  - C:\> tftp –i xxx.yyy.zzz.kIput filename.FTP /Seg
    For example:
    C:\> tftp –I 192.168.1.253 put Modbus.FTP /4

Seg is the segment that you identified in step. Notice the “/” before the number.

step 3: enable the new firmware

- On your computer, run a telnet client, or reconnect the previous one.
  C:\> telnet 192.168.1.253
  Telnet displays a banner and a prompt from the COMETH
- You must log in. (login factory setting is “root”)
  > login root
- You must enter a password for the root user, the password factory setting is “root”
- Enable the newly downloaded firmware
  root> set prog enable Seg
- Save the configuration and restart the COMETH to load the new firmware
  root> save
  root> reset

The Cometh restarts. Wait until the DIAG LED turns off (less than 15 seconds). The new firmware is now running

DEFECT REPORT FORM

Name	
Company	
Telephone	
Fax	
E-mail	
COMETH	
Operating system	
driver version	
Type of computer	

Description of the problem

……

ACKSYS
3 & 5 rue du Stade BP 4580 78302 POISSY CEDEX FRANCE
Telephone: +33 (0)1 39 11 62 81
Fax: +33 (0)1 39 11 47 96
Web: www.acksys.fr
Hotline: support@acksys.fr
Sales: sales@acksys.fr

FAQs

Q: What clients are necessary for the firmware upgrade process?

A: For this operation, a telnet client and a client are necessary. A TFTP client for Windows can be found on the CD.

Q: What are the default COMETH parameters assumed in the user manual?

A: The default IP Address is 192.168.1.253 and the default administrator login name is root.

Documents / Resources

	ACKSYS DTUS040 Firmware Tunnel UDP For Cometh Range [pdf] User Guide DTUS040 Firmware Tunnel UDP For Cometh Range, DTUS040, Firmware Tunnel UDP For Cometh Range, Tunnel UDP For Cometh Range, Cometh Range

References

- Solutions de communication WiFi et cellulaires ACKSYS
- Solutions de communication WiFi et cellulaires ACKSYS
- User Manual