56K V.90 Modem

TOPIC TP560i (x)/9922S14

User's Guide

FCC Requirements

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. IF REQUESTED. THIS INFORMATION MUST BE GIVEN TO THE TELEPHONE COMPANY.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have these entire devices ring when your telephone number is called in most. But not all areas the sum of the REN's of all devices connected to one line shouldnot exceed five (5.0). To be certain of the number of devices you may connect to your line. As determined by the REN. You should contact your local telephone company to determine the maximum REN of the area you are calling from. If your telephone equipment causes harm to the telephone network. The Telephone Company may discontinue your service temporally. If possible, they will notify you in advance. But if the advanced notice is failed, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may change in its facilities, equipment, operations or procedures that could affect the proper functions of your equipment. If this occurs, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact the following address and phone number for information on obtaining service or repairs. The Telephone Company may ask you to disconnect this equipment from the network until the problem is solved or until that the equipment is not detected malfunctioning. This equipment may not be used on coin service provided by the Telephone Company. Connection to party lines is subject to state Tariffs.

Federal Communications Commission
Radio Frequency Interference Statement.

Note: This equipment has been tested and found to comply with the limitation for a lass B digital device pursuant to Part 15 of the FCC Rules. These restrictions are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the equipment does cause harmful interference to radio or television reception, which can be determine by tuning the equipment off and on, the user is suggested to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the distance 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.

Notices:

(1) The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
(2) Shielded interface cables and AC power cord if any must be used in order to comply with the emission limits.

Notices to Australian users:

The modem card must only be used in a data terminal equipment (DTE) e.g. computer, that

has a screw down cover (lid). As unsafe voltages (TNV) exist on the modem card, disconnect the modem card from the telephone line while the cover (lid) of the DTE (computer) is removed.

Installation of the modem card in a DTE (computer) which does not require a tool to open the cover (lid) will render the permit void.

Disconnect the telephone line before opening the cover (lid) of the DTE (computer). Do not connect the customer equipment to the telephone line while the cover (lid) of the DTE (computer) is open.

WARNING
ONLY CONNECT EQUIPMENT WITH A TELECOMMUNICATIONS COMPLIANCE LABEL

WARNING
FOR SAFETY REASONS, ONLY CONNECT EQUIPMENT WITH A TELECOMMUNICATIOS COMPLIANCE LABEL. THIS INCLUDES CUSTOMER EQUIPMENT PREVIOUSLY LABELLED PERMITTED OR CERTIFIED.

Modems connected to the Australian telecommunications network must be marked in accordance with the Labeling Notice. This modem has been specifically configured to ensure compliance with the ACA Standards. Do not adjust your modem or software outside the values indicated as below. To do so would result in your modem being operated in a non-compliant manner.

Modem Commands:

Command	Default	Permissible Range
ATA	-	Do not use
ATB	B0	Do not set to B1
AT&G	&G0	&G2
AT&P	&P0	&P1
ATSn	see table below	
S register	Default	Permissible Range
s6	2	2 to 6

Call Attempts/Retries:

Applications software shall be configured so that no more than 3 attempts are made to establish a connection to a given number (Note: if the modem can detect service tones, up to 10 attempts can be made). If the call sequence is unsuccessful, there shall be a delay of at least 30 minutes before attempting to call the number again.

Failure to set the modem and any application software used with the modem, to the values shown as above will result in the modem being operated in a non-compliant manner. Consequently, this would be in violation of the Labeling Notice for this equipment, and the Telecommunications ACT 1997 prescribes penalties for the connection of non-compliant equipment.

Table of Contents

Chapter 1 Introduction

1.1 Introduction

Thank you for selecting the 56k V.90 modem with TOPIC chipset manufactured by Well Communication Co. This modem with TOPIC chipset is a hardware modem that uses the state-of-the-art single chip and Silicon DAA design. Besides, it has the advantages of high quality, high reliability, more compact and low cost. This modem with Topic chipset is compatible with current Windows 95, 98, NT 4.0/5.0, DOS and **Linux** operation systems because of its independent OS. Moreover, it follows the V.90 standard, so you can surf the Internet at 56K speed, but it depends on the condition of the telephone line and the ISP you connected to. We truly hope that our series products with TOPIC chipset can meet your needs.

1.2 What's in the Package

- 56K V.90 Modem with TOPIC Chipset
- CD-ROM (Comprises Application Software, Modem Drivers and User's Guide)
- Quick Guide for Installing Modem Drivers
- Phone Cord
- RS-232 (For External Modem Only)
- Power Adapter (For External Modem Only)

Chapter 2 Specifications

Specifications:

Chipset (Internal type)	TOPIC TP560i/9922S14
Chipset (External type)	TOPIC TP560x/9922S14
Line Connection	PSTN, 2 Wires
Data Transmission Rate	ITU-T V.90 56000/33600/28800/14400/9600/7200/4800/2400/ 1200/300 bps BELL 103 and BELL 212A
Fax Compatibility	Send/Receive G3 Fax, 14400/9600/4800 bps
Error Correction	MNP 2-4/V.42 LAPM
Data Compression	MNP 5/V.42 bis
Command Set	Enhanced "AT" Command, Fax Class 1
Communication Model	Asynchronous
DTE Speed (MAX)	115,200 bps
Transmit Level	-11(±1dBm)
Flow Control	XON/XOFF RTS/CTS
Dialing Mode	Touch Tone / Rotary Pulse (Countries depend)
Auto Dial & Auto Answer	YES
Noted Features	NVRAM Directory and Stored Profile, Speed Buffering , Auto Format/Speed sensing Auto Retrain
Telephone Interface	PSTN Line through RJ-11
Card Dimension	12.2mm*7.5mm*1.6mm
Applicable PTT Approval	Countries depend
Safety	FCC,CE

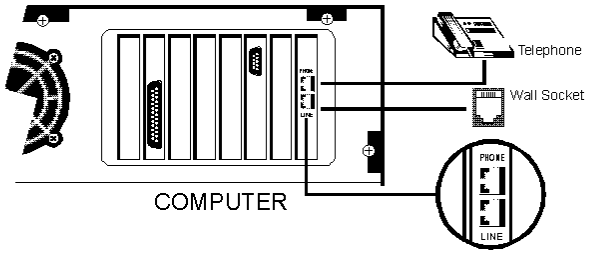
Features

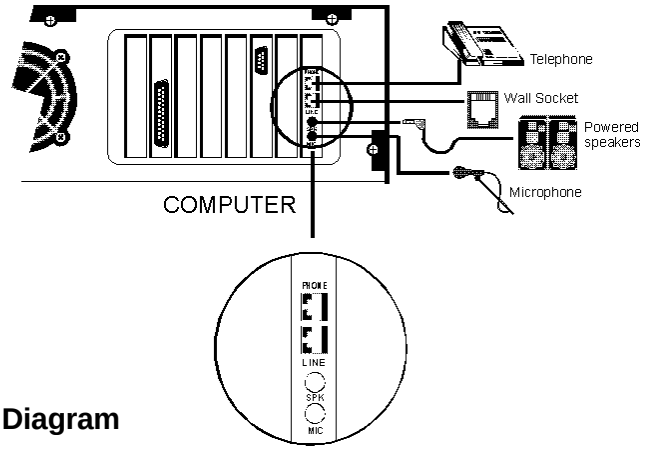
TOPIC single chip solution
Surf the Internet at blazing 56K speed
Independent OS – Compatible with Linux, DOS, Windows 95/98, Win NT4.0/5.0
Fully software upgradable

Chapter 3 Hardware Installation

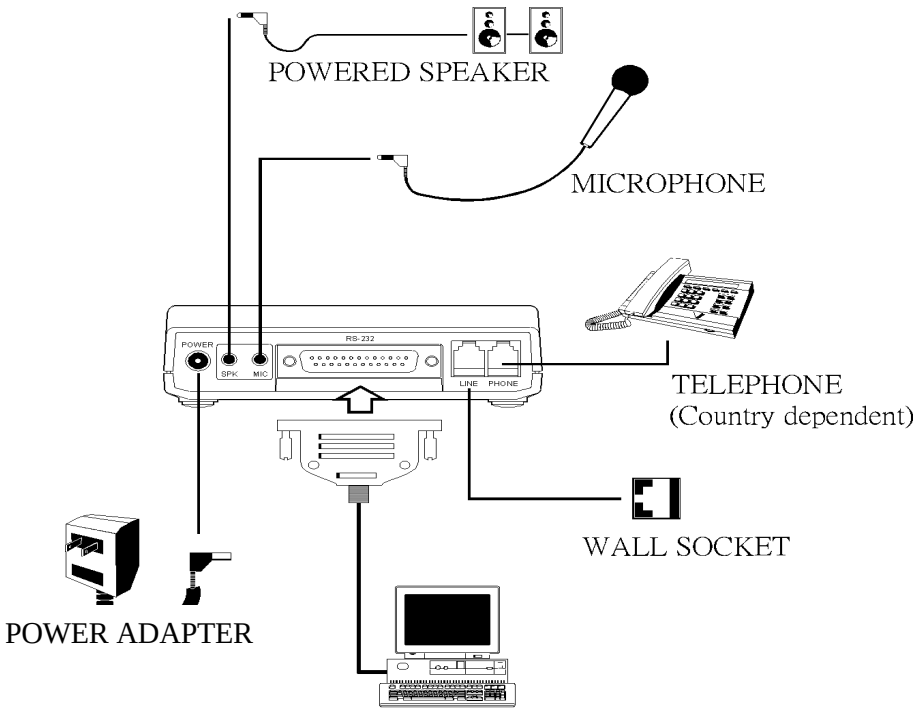
Note: If you use the External modem, Please go to step 4 directly.

1. Remove the computer's case.
2. Insert the modem card into a spare PCI expansion slot.
3. Close the case.
4. Unplug the telephone from the wall socket, then plug the telephone into the socket on the back of the modem marked "PHONE".
5. Plug the telephone cord supplied into the socket on the back of the modem marked "LINE".
6. Plug the other end of the cord into the wall socket.





Internal Modem Diagram



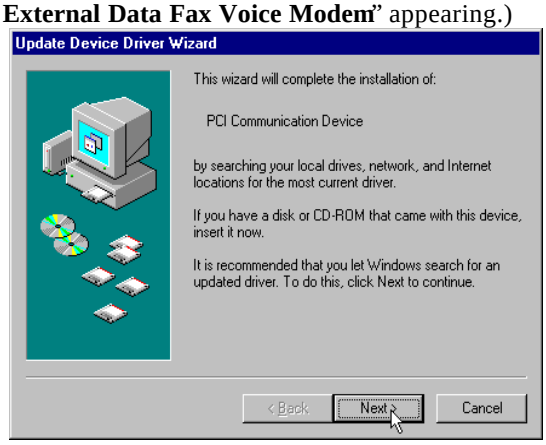
External Modem Diagram

Chapter 4 Software Installation

Power on your computer and modem and start Windows 95/98.
Windows 95/98 will detect the modem automatically.
Note: The figures shown in this manual are based on the Internal modem.

4.1 In Windows 95B(OS2)

1. Please insert the driver CD supplied when you see the message of "**PCI Communication Device**" appearing on the screen, then click "**Next**" to search for the driver. (If you use the External modem, you will see the message as "**Topic 56k External Data Fax Voice Modem**" appearing.)



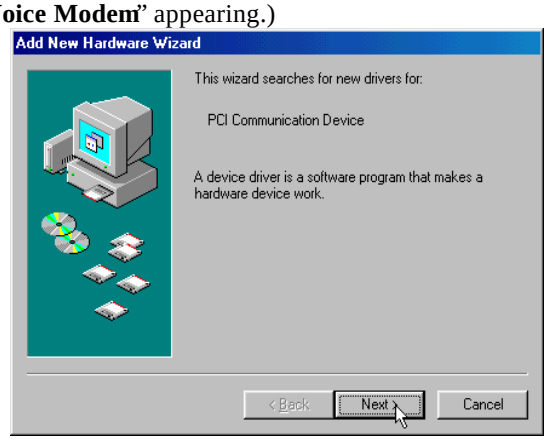
2. Windows has found the driver for "**Topic 56k Data Fax Voice Modem**", click "**Finish**" to install the driver.

3. Windows will continue installing the "**Wave Device for Voice Modem**", click "**Next**" to start searching for the driver.

4. Windows has found the driver for the "**Voice Modem Serial Wave Device**", click "**Finish**" to complete the installation and end this procedure.

4.2 In Windows 98

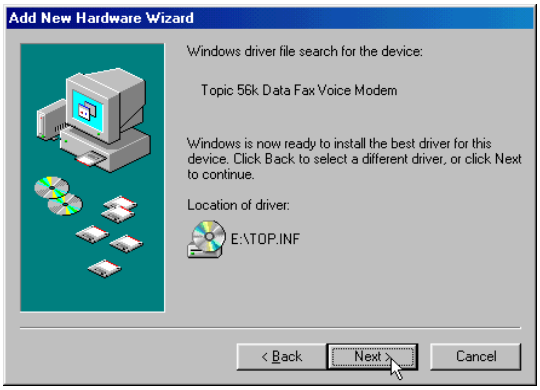
1. Please insert the driver CD supplied when you see the message of "**PCI Communication Device**", then click "**Next**" to search for the driver. (If you use the External modem, you will see the message as "**Topic 56k External Data Fax Voice Modem**" appearing.)



2. Select the "**Search for the best driver for your device. [Recommended]**" and click "**Next**" to continue.

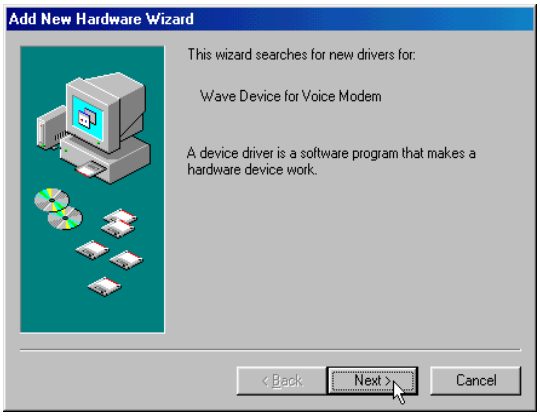
3. Select the "**CD-ROM drive**" and click "**Next**" to start the search.

4. Windows has found the driver for the "**Topic 56k Data Fax Voice Modem**", click "**Next**" to start the installation.

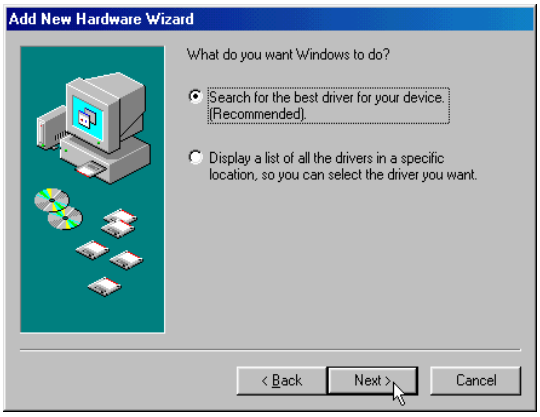


5. This installation has been done, click "**Finish**" to continue installing Voice Modem.

6. When you see the message of "**Wave Device for Voice Modem**", click "**Next**" to search the driver.



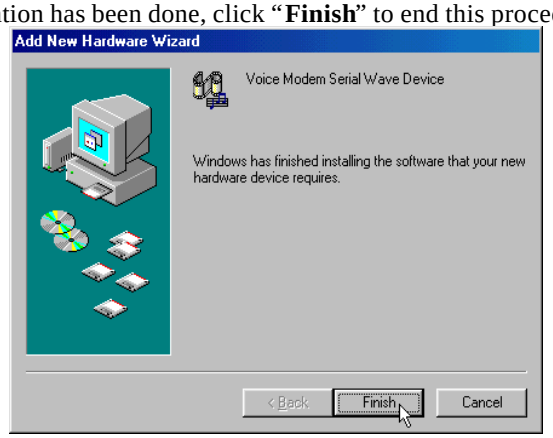
7. Select the "**Search for the best driver for your device. [Recommended]**" and click "**Next**" to continue.



8. Select the "**CD-ROM drive**" and click "**Next**" to start the search.

9. Windows has found the driver for the "**Voice Modem Serial Wave Device**", click "**Next**" to start the installation.

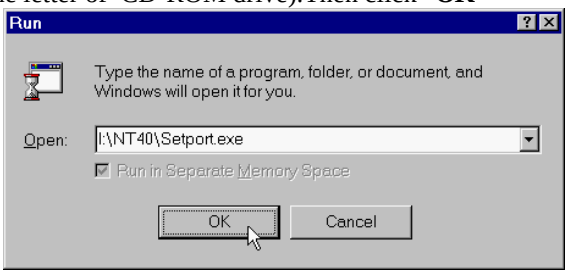
10. This installation has been done, click "**Finish**" to end this procedure.



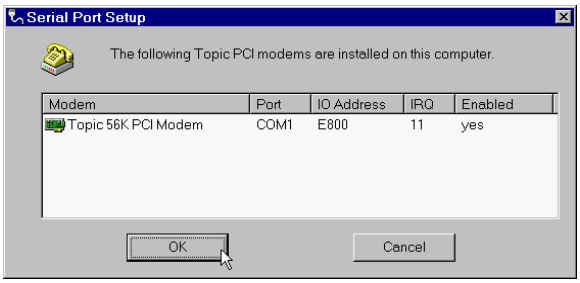
4.3 In Windows NT4.0

Note: If you use external modem please go to step4 directly.

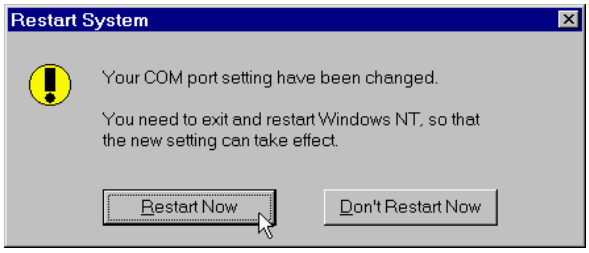
1. Please go to **"Start>Run"**, and type **"I:\NT40\Setport.exe"** to setup the serial port (I is the letter of CD-ROM drive).Then click **"OK"**



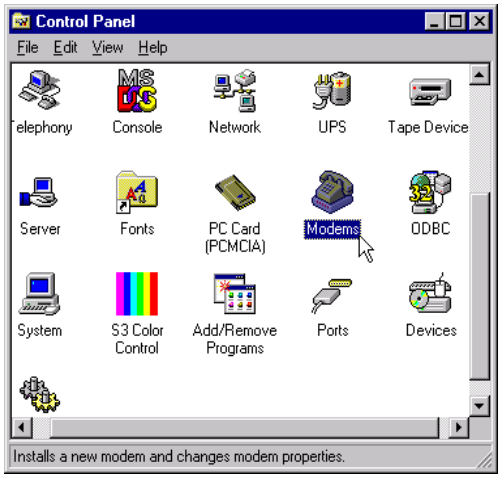
2. Click "OK" .



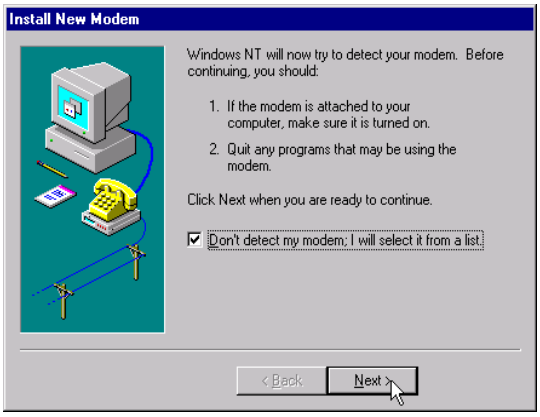
3. Click "**Restart Now**" to restart Windows NT to take the new settings effect.



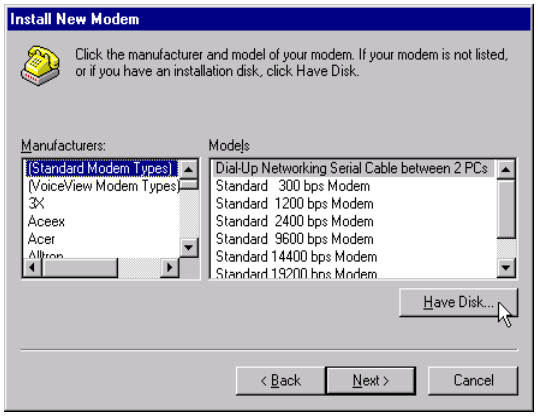
4. Please go to "**Start>My Computer>Control Panel**", then double-click on "**Modems**" icon to install a new modem.



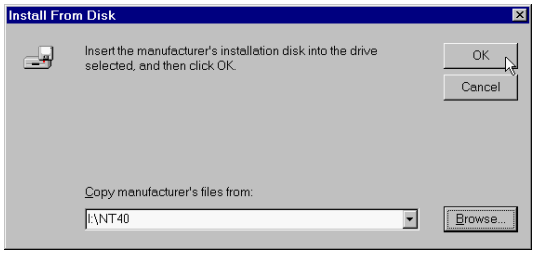
5. Select "**Don't detect my modem; I will select it from a list.**", then click "**Next**" to continue.



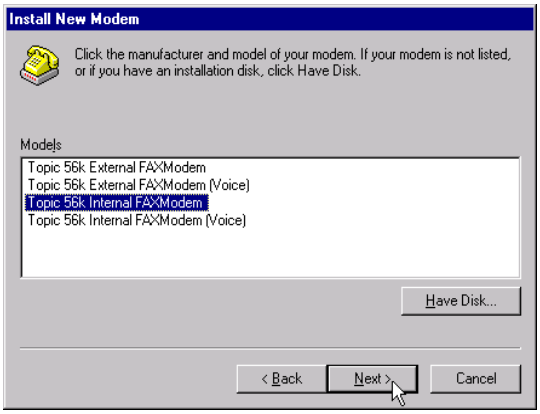
6. Click "**Have Disk…**" to install from the installation disk.



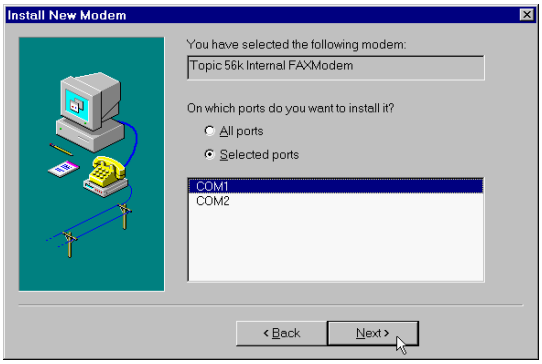
7. Select the location of **"I:\NT40"** and click **"OK"** to continue.



8. Select "**Topic 56K Internal (or External) FAXModem**" from the list of Models, then click "**Next**" to continue.

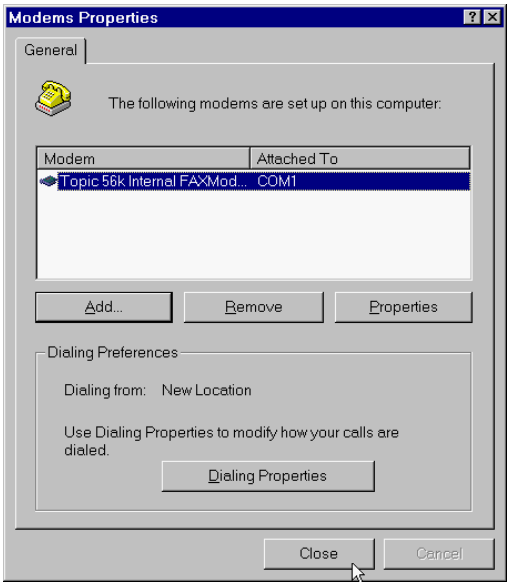


9. Select "**Selected ports**" and then click "**Next**" to start installing the selected modem.

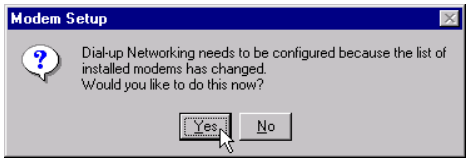


10. The modem has been set up, click "**Finish**" to complete the installation.

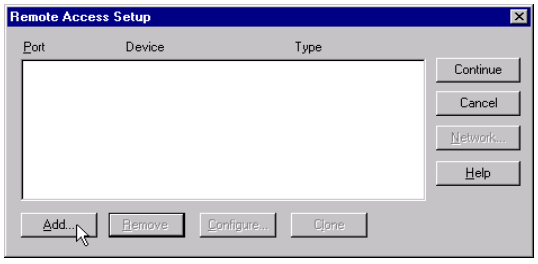
11. Click "**Close**" to end this procedure as you see the **Topic 56k Internal (or External) FAXModem** has set on **COM1**.



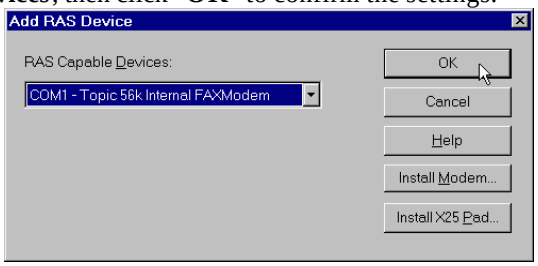
12. Click "**Yes**" to configure the **Dial-Up Networking** for the new installed modem.



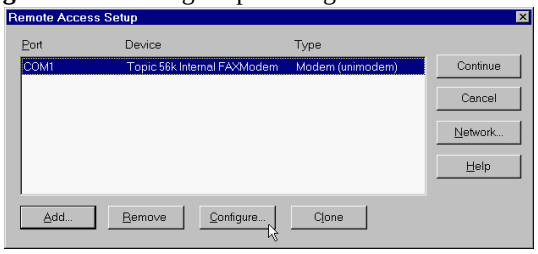
13. Click "**Add…**" to add the modem.



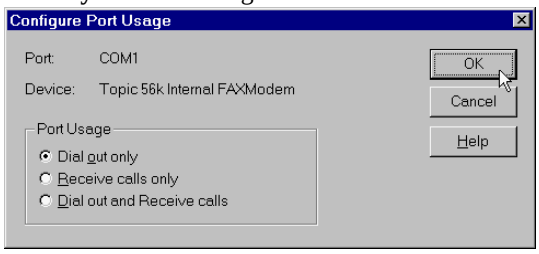
14. Select "**COM1-Topic 56K Internal (or External) FAXModem**" for **RAS Capable Devices**, then click "**OK**" to confirm the settings.



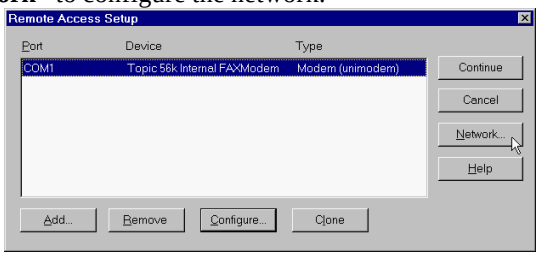
15. Click "**Configure…**" to configure port usage.



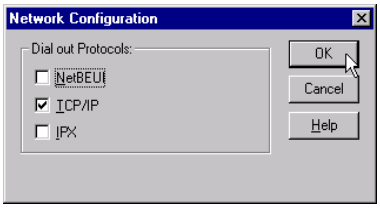
16. Select "**Dial out only**" for Port Usage and click "**OK**" to confirm the settings.



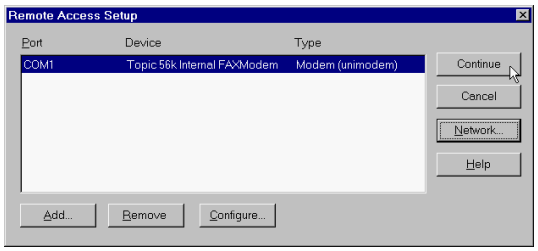
17. Click "**Network**" to configure the network.



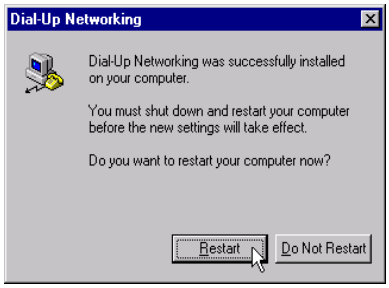
18. Select "**TCP/IP**" for **Dial out Protocols** and click "**OK**" to confirm the settings.



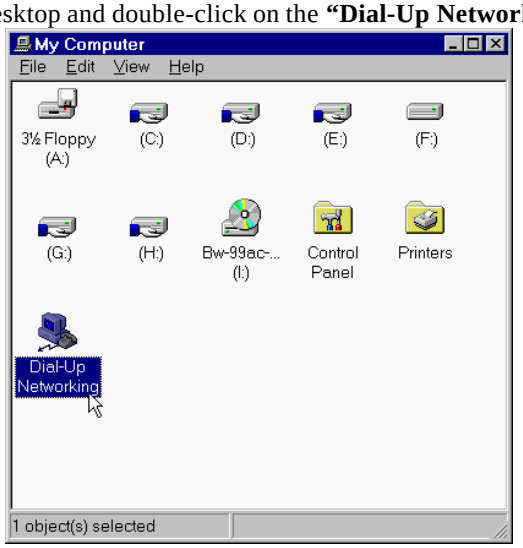
19. Click "**Continue**" to complete the setup.



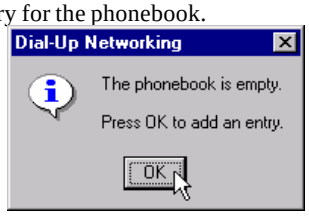
20. **Dial-Up Networking** was installed successfully, click "**Restart**" to take the new settings effect.



21. After restarting your computer, please double-click on the **"My Computer"** icon on the desktop and double-click on the **"Dial-Up Networking"** icon.

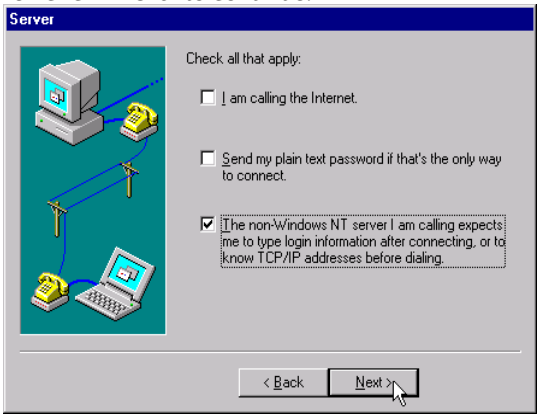


22. Click "**OK**" to add an entry for the phonebook.

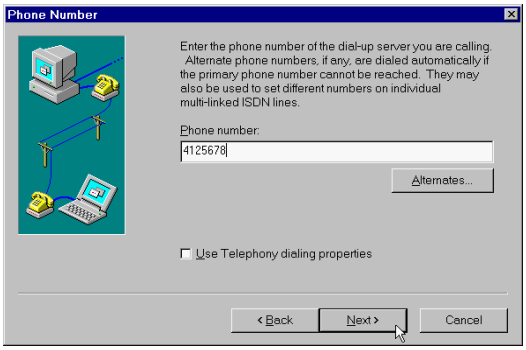


23. You may use the name provided or enter a different one for the **new phonebook entry**, then click "**Next**" to continue.

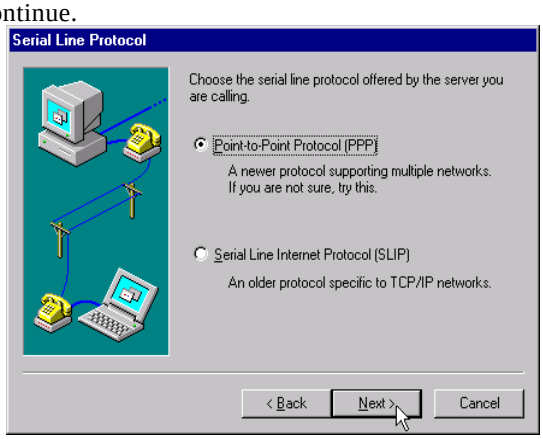
24. Select the third option of " **The non-Windows NT server I am calling ….**" for the **Server**, then click "**Next**" to continue.



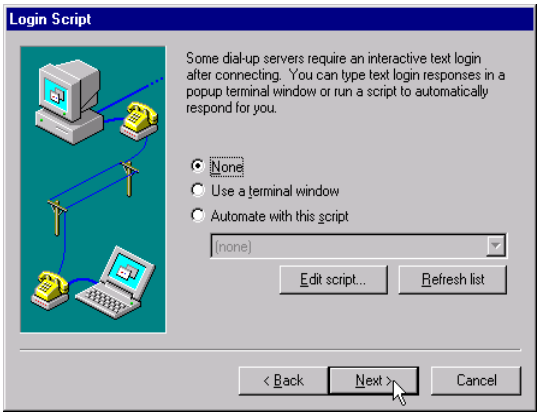
25. Key in the phone number of the dial-up server provided by your local ISP, then click "**Next**" to continue.



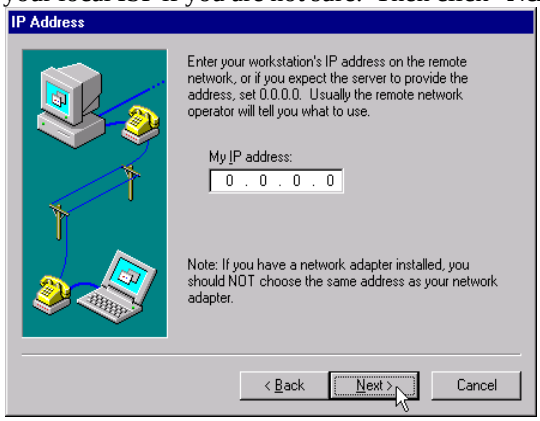
26. Select "**Point-to-Point Protocol [PPP]**" for **Serial Line Protocol**, then clicks "**Next**" to continue.



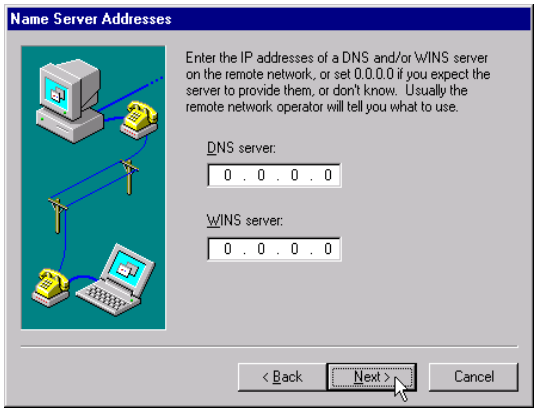
27. Select "**None**" under normal condition, or consult with your local ISP for other choices, then click "**Next**" to continue.



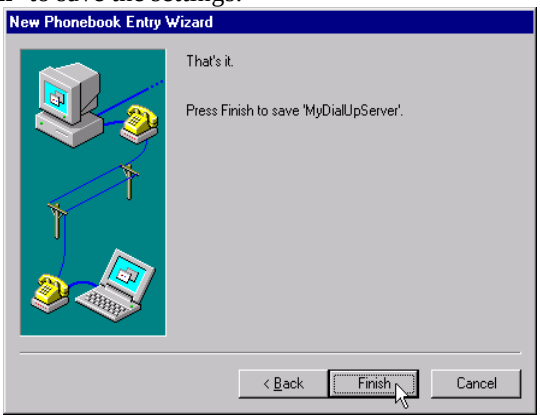
28. Enter your IP address if you have a fixed one or leave the value "**0.0.0.0**", consult with your local ISP if you are not sure. Then click "**Next**" to continue.



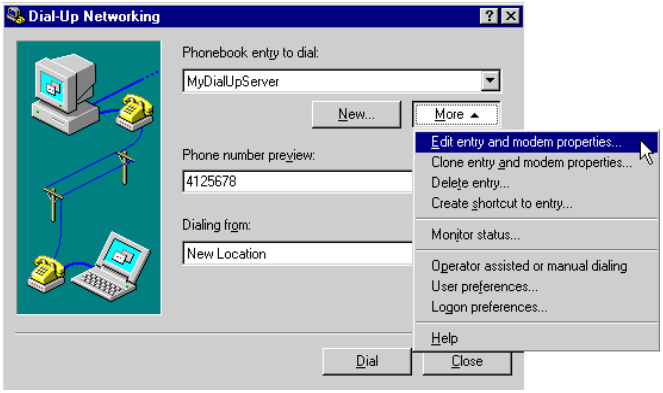
29. Enter the IP addresses of a DNS and/or WINS server, or set "**0.0.0.0**" if you are not sure. Then click "**Next**" to continue.



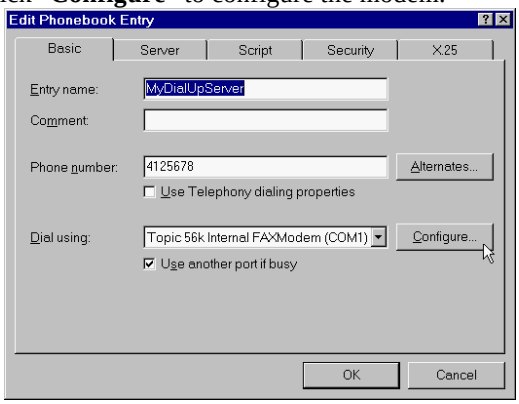
30. Click "**Finish**" to save the settings.



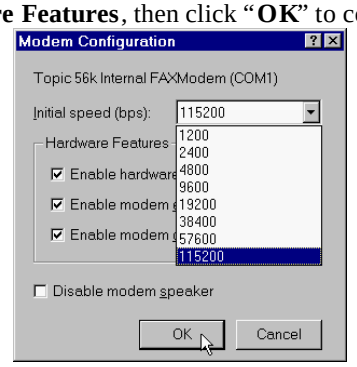
31. Click "**More**" and select "**Edit entry and modem properties…**".



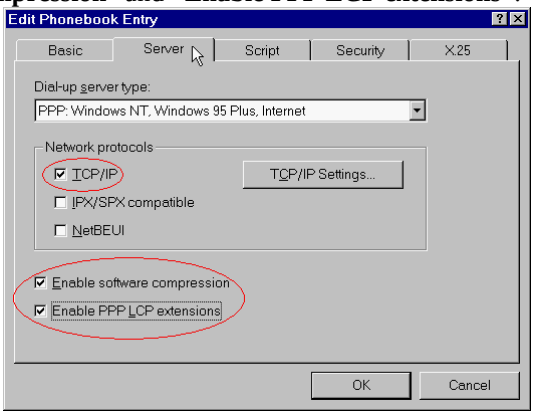
32. Select "**Topic 56k Internal (or External) FAXModem**" from the list of **Dial using**, then click "**Configure**" to configure the modem.



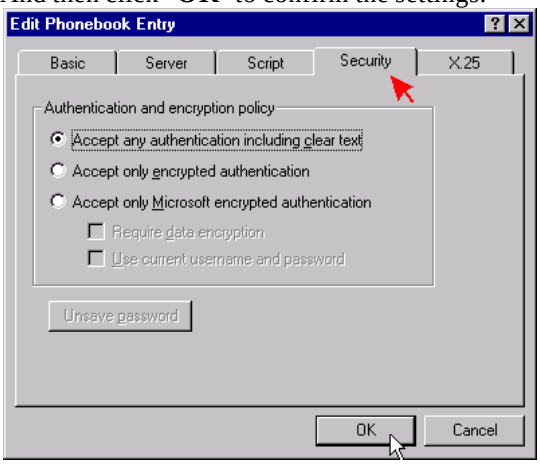
33. Select "**115200**" from the list of **Initial speed [bps]** and select all of the three options for **Hardware Features**, then click "**OK**" to confirm the settings.



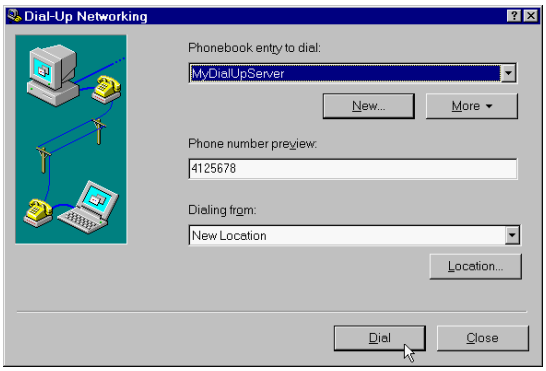
34. Click on "**Server**" tab, then select "**TCP/IP**" for **Network protocols**, "**Enable software compression**" and "**Enable PPP LCP extensions**".



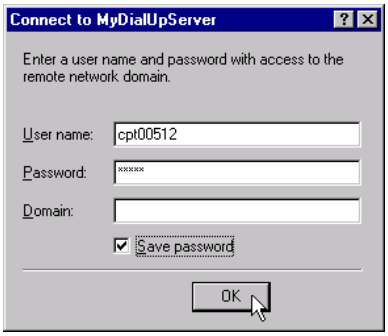
35. Click on "**Security**" tab, then select "**Accept any authentication including clear text**". And then click "**OK**" to confirm the settings.



36. Please go to "**Start>My Computer>Dial-Up Networking**", then click "**Dial**" to connect to.



37. Enter the user name and password, then click "**OK**" to get a connection to your local ISP.



4.4 In Linux

With Internal Modem:

4.4.1 Manual mode:

1. Find file **pci** from path **/ proc**, then use **vi** editor to find **Topic vender ID "151f"** and **the I/O-address, IRQ-number** that Linux assigns to Topic modem.

   For example : **cd / proc**

   vi pci

   Vendor id=151f. Device id=0.

   Medium devsel. IRQ=5.

   I/O at 0xe400 [0xe401].

   (Then type **q** to quit **vi**)

2. Under path / **dev**, type **setserial tty-number uart 16550A irq IRQ-number port I/O-address**

   For example: **setserial ttyS2 uart 16550A irq 5 port 0xe400**

3. Under path / **dev**, firstly, remove the default settings that the modem may linked to, and then link the modem to the **tty** that you assign on step 2.

   For example: **rm modem**

   1n –s ttyS2 modem

4. Now, you can use **minicom** to test the modem and type **ATI3** to check the type of this modem.

   For example : **minicom**

   ATI3

4.4.2 Automatic Mode

1. Copy **topic.modem** executable file to **/ bin**
2. Copy script file **rc.serial** to **/etc/rc.d**
3. When you start Linux again, you may see the message of " **Setup topic modem…**" and it means working properly. If not, you can type **topic.modem**

directly.

4. You can use **minicom** to test the modem.

With External Modem

4.4.3 For X window:

1. If your modem is connecting to **Com 1**, please go to: **Red Hat menu > administration > control panel > modem configuration > cua0**

   Note:(1) If your modem is set on **Com2**, change **cua0** to **cua1** and so on.

   (2) Every different version of Linux may have a different little pop-up menu, so firstly, just try to find out where the **control panel** is.)

2. Now you can open an X terminal window and execute terminal program **minicom** to test the modem.

4.4.4 For Linux terminal modem:

1. Remove modem first: **rm /dev/modem**

2. Assign modem on Com 1: **ln -s /dev/cua0 /dev/modem**

   Note: If your modem is set on **Com2**, change **cua0** to **cua1** and so on.

3. Now you can execute terminal program **minicom** to test the modem.

4.5 In DOS

Note: The methods of configuration and diagnostics only for Internal modem under DOS environment and they can't be executed under Windows DOS.

4.5.1 Configuration

1. The DOS will detect the Internal modem automatically when you start it. Then insert the driver CD supplied.
2. Run **D:\ PCICFG.BAT** directly (**D** is the letter of your CD-ROM drive) to go to the configuration screen. Meanwhile, the files will be copied to your **C:** drive automatically so that you don't need to insert the driver CD next time, just run **PCICFG.EXE** under **C:\PCICFG** directory.
3. Select the COM port where your modem is setting from the list of the **COM Port** and we recommend that you select the **COM 3** first. The fixed values of the **IO Base** and **IRQ Num** will appear automatically, then press "**Update Autoexec.bat**" button to save the new settings and press "**OK**" or "**Esc**" to end the configuration. If failed, try **COM 4, 2, 1** in the sequence. (Please referring to the following:)

COM Port	IO Base	IRQ Num	Remark
COM 3	Fixed Value	Fixed Value	
COM 4	Fixed Value	Fixed Value	
COM 2	Fixed Value	Fixed Value	Disable COM 2 in the BIOS first
COM 1	Fixed Value	Fixed Value	Disable COM 1 in the BIOS first
Others	Enter 3E8	Enter 5,7,9,11 or 12	

4.5.2 Diagnostics

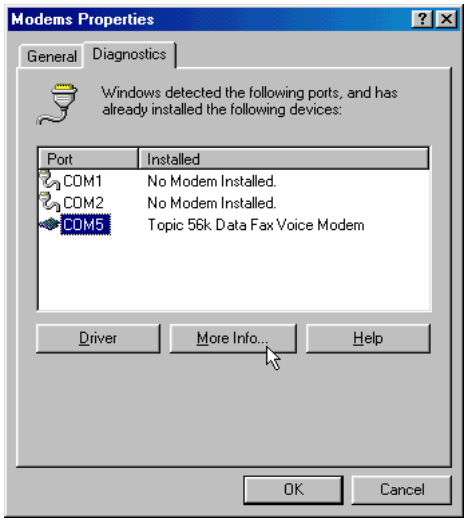
4.5.2.1 Run **PCICFG.EXE** under **C:\PCICFG** directory to go to the configuration screen.

4.5.2.2 Press "**Diagnose**" to test the modem. If your modem is responding to AT commands and displaying the result of the **Diagnosis Information**, it means that your modem is working properly. Press "**OK**" to end this procedure.

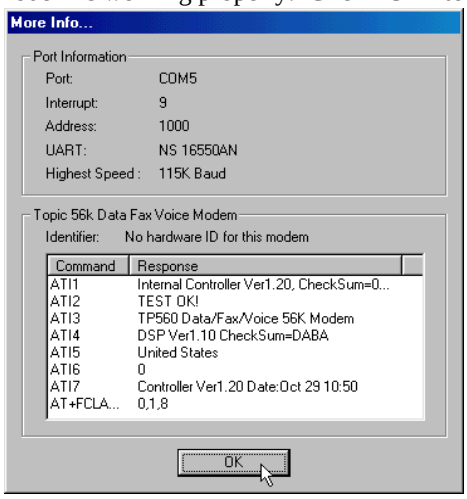
Chapter 5 Diagnostics in Windows 95/98

5.1 Please go to "**Start > Settings > Control Panel**" and double-click on the "**modems**" icon.

5.2 To test the modem by clicking on the "**Diagnostics**" tab. Then select the **COM Port** where "**Topic 56K Data Fax Voice Modem**" is setting and click on the "**More Info…**" button to start the test.



5.3 If your modem is responding to AT commands and functioning correctly, it means that your modem is working properly. Click "**OK**" to end this procedure.



Chapter 6 Uninstalling Procedure

6.1 Please go to "**Start > Settings > Control Panel**" and double-click on the "**modems**" icon.

6.2 Select the "**Topic Data Fax Voice Modem**", then click "**Remove**".

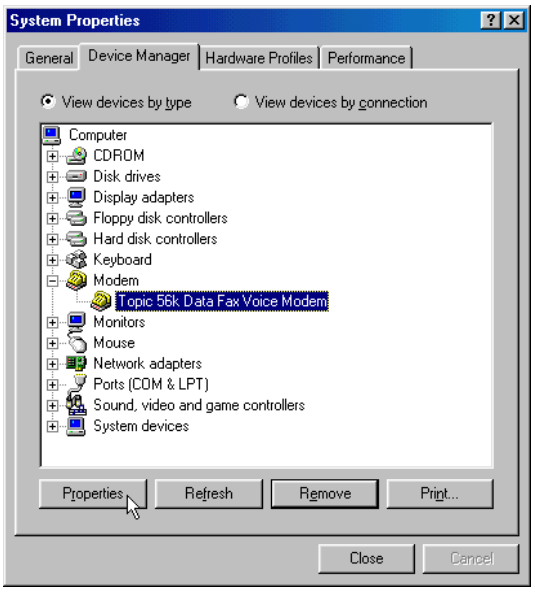
Chapter 7 Troubleshooting

If you failed to install your modem in Windows95/98

Make sure that the COM port and IRQ have been set correctly, and it does not conflict with another board installed in your computer.

Note: The following procedure is for Internal Modem only.

7.1 Please go to "**Start > Settings > Control Panel**" and double click on the "**system**" icon. Select the "**Device Manager**" tab and double click on the "**modem**" icon to call up the modem. Select "**Topic 56K Data Voice Modem**" and click "**Properties**" as shown below.



7.2 Select the "**Resources**" tab. Then disable the setting of "**Use automatic settings**". Continue selecting the setting from the list of "**Setting based on**" until "**No conflicts**" is shown on the **Conflicting device list**, then click "**OK**" to end this procedure.