# Chapter 1 Command Summary

## Basic AT Commands

**Command Function**

| | |
|---|---|
| A/ | Re-execute command. |
| A | Go off-hook and attempt to answer a call |
| B0 | Select V.22 connection at 1200 bps. |
| B1 | Select Bell 212A connection at 1200 bps |
| C1 | Return OK message. |
| Dn | Dial modifier. |
| E0 | Turn off command echo |
| E1 | Turn on command echo |
| H0 | Initiate a hang-up sequence |
| H1 | If on-hook, go off-hook and enter command mode. |
| I0 | Report product code |
| I1 | Report computed checksum |
| I2 | Report OK |
| I3 | Report firmware revision, model, date |
| I4 | Report response programmed by an OEM. |
| I5 | Report the country code parameter. |
| I6 | Report modem data pump model |
| L0 | Set low speaker volume |
| L1 | Set low speaker volume |
| L2 | Set medium speaker volume |
| L3 | Set high speaker volume |
| M0 | Turn speaker off |
| M1 | Turn speaker on during handshaking and turn speaker off while receiving carrier |
| M2 | Turn speaker on during handshaking and while receiving carrier |
| M3 | Turn speaker off during dialing and receiving carrier and turn speaker on during answering. |
| N0 | Turn off Auto mode detection |
| N1 | Turn on Auto mode detection |
| O0 | Go on-line |
| O1 | Go on-line and initiate a retrain sequence. |
| P | Force pulse dialing |
| Q0 | Allow result codes to DTE |
| Q1 | Inhibit result codes to DTE |
| Sn | Select S-Register as default |
| Sn? | Return the value of S-Register n. |
| Sn = v | Set default S-Register to value v. |
| S = ? | Return the value of default S-Register |
| T | Force DTMF dialing. |
| V0 | Report short from (terse) result codes. |
| V1 | Report long from (verbose) result codes. |
| W0 | Report DTE speed in Error Correction mode. |
| W1 | Report line speed, Error Correction protocol and DTE speed. |
| W2 | Report DCE speed in Error Correction mode. |
| X0 | Report basic call progress result codes, i.e., OK, CONNECT, RING, NO CARRIER (also , for busy, if enabled, and dial tone not detected), NO ANSWER and ERROR |
| X1 | Report basic call progress result codes and connections speeds (OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT, XXXX, and ERROR. |
| X2 | Report basic call progress result codes and connections speeds, i.e,, OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT, XXXX, and ERROR |
| X3 | Report basic call progress result codes and connection rate, i.e., OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT, XXXX, BUSY, and ERROR. |
| X4 | Report all call progress result codes and connection rate, i.e., OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT XXXX, BUSY, NO DIAL TONE and ERROR. |
| Y0 | Disable long space disconnect before on-hook. |
| Y1 | Enable long space disconnect before on-hook. |
| Z0 | Restore stored profile 0 after warm reset. |
| Z1 | Restore stored profile 1 after warm reset. |
| &C0 | Force RLSD(DCD) active regardless of the carrier state. |
| &C1 | Allow RLSD(DCD) to follow the carrier state. |
| &D0 | Interpret DTR ON – to – OFF transition per &Qn. |
| &D1 | Interpret DTR ON – to – OFF transition per &Qn. |
| &D2 | Interpret DTR ON - to – OFF transition per &Qn |
| &D3 | Interpret DTR ON - to – OFF transition per &Qn |
| &F0 | Restore factory configuration 0 |

| | |
|---|---|
| &F1 | Restore factory configuration 1. |
| &G0 | Disable guard tone. |
| &G1 | Disable guard tone. |
| &G2 | Enable 1800 Hz guard tone. |
| &K0 | Disable DTE/DCE flow control |
| &K3 | Enable RTS/CTS DTE/DCE flow control |
| &K4 | Enable XON/XOFF DTE/DCE flow control |
| &K5 | Enable transparent XON/XOFF flow control. |
| &K6 | Enable both RTS/CTS and XON/XOFF flow control |
| &M0 | Select direct asynchronous mode. |
| &M1 | Select sync connect with async off-line command mode. * |
| &M2 | Select sync connect with async off-line command mode and Enable DTR dialing of directory zero.* |
| &M3 | Select sync connect with async off-line command mode and Enable DTR to act as Talk/Data switch * |
| &P0 | Set 10 pps pulse dial with 39% 61% make/break. (country dependent) |
| &P1 | Set 10 pps pulse dial with 33%67% make/break. |
| &P2 | Set 20 pps pulse dial with 39% 61% make/break. |
| &P3 | Set 20 pps pulse dial with 33% 67% make/break. |
| &Q0 | Select direct asynchronous mode. |
| &Q1 | Select sync connect with async off-line command mode. * |
| &Q2 | Select sync connect with async off-line command mode and Enable DTR dialing of directory zero. * |
| &Q3 | Select sync connect with async off-line command mode and Enable DTR to act as Talk/Data switch. |
| &Q4 | Select Hayes AutoSync mode. |
| &Q5 | Modem negotiates an error corrected link |
| &Q6 | Select asynchronous operation in normal mode. |
| &R0 | CTS tracks RTS (async) or acts per V.25 (sync) |
| &R1 | CTS is always active. |
| &S0 | DSR is always active. |
| &T0 | Terminate any test in progress |
| &T1 | Initiate local analog loopback. |
| &T2 | Returns ERROR result code |
| &T3 | Initiate local digital loopback. |
| &T4 | Allow remote digital loopback. |
| &T5 | Disallow remote digital loopback request |
| &T6 | Request an RDL without self-test |
| &T7 | Request an RDL with self-test |
| &T8 | Initiate local analog loop with self-test. |
| &V0 | Display current configurations. |
| &V1 | Display the last connection statistics |
| &W0 | Store the active profile in NVRAM profile 0 |
| &W1 | Store the active profile in NVRAM profile 1. |
| &X0 | Select internal timing for the transmit clock * |
| &X1 | Select external timing for the transmit clock * |
| &X2 | Select slave receive timing for the transmit clock * |
| &Y0 | Recall stored profile 0 upon power up. |
| &Y1 | Recall stored profile 1 upon power up |
| &Zn = x | Store dial string x = (1 to 45) to location n= (0 to 3) |
| %E0 | Disable line quality monitor and auto retrain. |
| %E1 | Enable line quality monitor and auto retrain |
| %E2 | Enable line quality monitor and fallback/fall forward. |
| %E3 | Enable line quality monitor and auto-retrain with fast hang-up |
| %L | Return received line signal level. |
| %Q | Report the line signal quality |
| \Kn | Controls break handing three states. |
| \N0 | Select normal speed buffered mode |
| \N1 | Select direct mode. |
| \N2 | Select reliable link mode. |
| \N3 | Select auto reliable mode. |
| \N4 | Force LAMP mode |
| \N5 | Force MNP mode |
| +MS | Select modulation , (select data speed) |

*: OPTIONAL

# Chapter 2 Specification of Modem

## Specification of External Modem

| | |
|---|---|
| Line Data Rate | : 56K/54K/52K/50K/48K/56K/44K/42K/40K/38K/36K/34K/* 33.6K/31.2K/28.8K/26.4K/24K/21.6K/19.2K/14.4K/12K/9.6K/ 7.2K/4.8K/2.4K/1.2K/300/75bps |
| Modem Protocol | : ITU-T V.90, K56Flex, ITU-T V.34bis/ V.34/ V.32bis/ V.32/V.23/ V.22bis/ V.22/ V.21 |
| Voice modem | : Full-duplex speaker phone (optional) Audio span (optional) ASVD (optional) |
| Fax Compatibility | : 14400bps send/receive, G3 compatible |
| Software Compatibility | : AT Command set compatible |
| Fax Command | : EIA Class 1 command compatible |
| Error Correction | : MNP 2-4 and V.42 |
| Data Compression | : MNP 5 and V.42bis |
| Data Format | : Serial, Binary, Asynchronous 7 or 8 data bits, odd, even or no parity one or two stop bit, totally 10 bits length |
| DTE TO Modem Data Rate | : MAX. 115200bps |
| Operation | : Dial-Up |
| Data Interface | : RS-232C compatible |
| Dialing | : Touch Tone |
| Audio Monitoring | : Mini speaker with programmable volume control |
| Line Interface | : RJ-11 modular jack, LINE/PHONE |
| Power input | : AC power adapter 1A, 9VAC/PLUG 2.5mm |
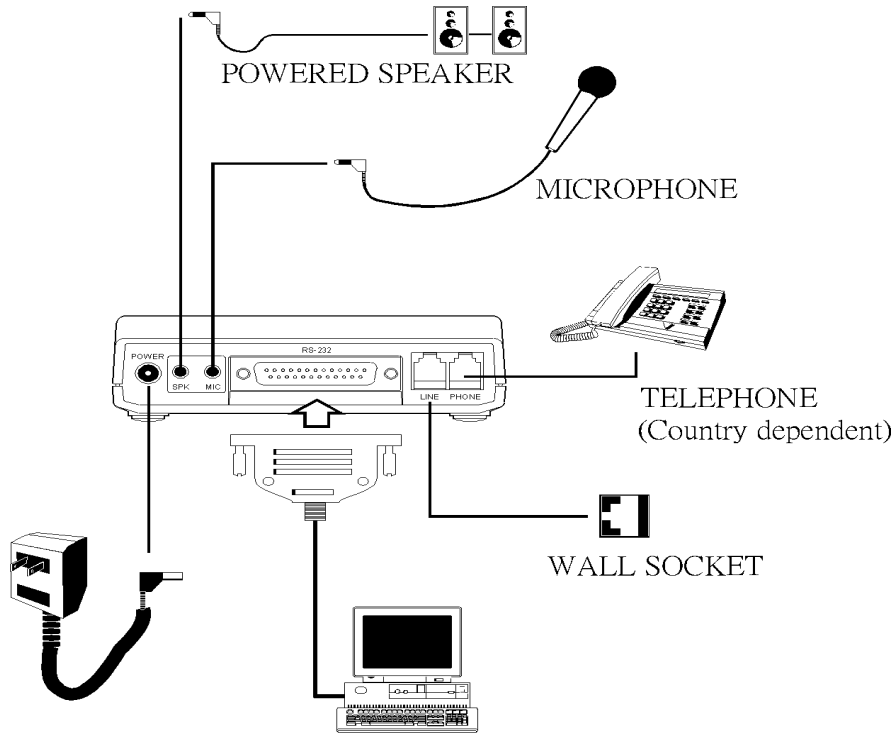


External Modem Diagram

## RS-232C Connector

| Pin | Signal | Direction |
|---|---|---|
| 2 | TD | To modem |
| 3 | RD | To DTE |
| 4 | RTS | To modem |
| 5 | CTS | To DTE |
| 6 | DSR | To DTE |
| 7 | GND | |
| 8 | DCD | To DTE |
| 20 | DTR | To modem |
| 22 | RI | To DTE |

# Power switch

Power ON/OFF control

# LED Indicators

PWR         : Indicates the power is on
MR          : Indicates the modem is ready for using
DTR         : Indicates the DTR signal is active
AA          : Indicates the modem is at auto answer mode
HS          : Indicates the modem is at higher speed
OH          : Indicates the line is hook-off
CD          : Indicates the data carrier is detected and the on-line mode
TD          : Indicates the data or command is transmitting
RD          : Indicates data is receiving or command is echoing

# Specifications of Internal Modem

Line Data Rate              : 56K/54K/52K/50K/48K/46K/44K/42K/40K/38K/36K/34K/*
                            33.6K/31.2K/28.8K/26.4K/24K/21.6K/19.2K/14.4K/12K/9.6K/7.2
                            K /14.8K/2.4K/1.2K/300/75bps
Modem Protocol              : ITU-T V.90, K56Flex, ITU-T V.34bis/ V.34/ V.32bis/ V.32/V.23/
                            V.22bis/ V.22/ V.21
Voice                       : Full-duplex speaker phone (optional)
                            Audio span (optional)
                            ASVD (optional)
Fax Compatibility           : 14400 bps send/receive, G3 compatible
Software Compatibility      : AT Command set compatible
Fax Command                 : EIA Class 1 command compatible
Error Correction            : MNP 2-4 and V.42
Data Compression            : MNP 5 and V.42bis
Data Format                 : Serial, Binary, Asynchronous 7 or 8 data bits, odd, even or no
                            parity one or two binary serial synchronous stop bit, totally 10 bits
                            length
DTE to Modem Data Rate      : MAX. 115200bps
Operation                   : Dial-Up
Data Interface              : ISA Bus compatible
Dialing                     : Touch Tone
Audio Monitoring            : Mini speaker with programmable volume control
Line Interface              : RJ-11 modular jack

PHONE

LINE

SPK

MIC

JP1

JP2

Telephone

Wall Socket

Powered
speakers

Microphone
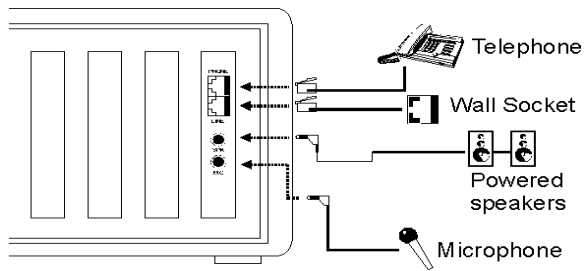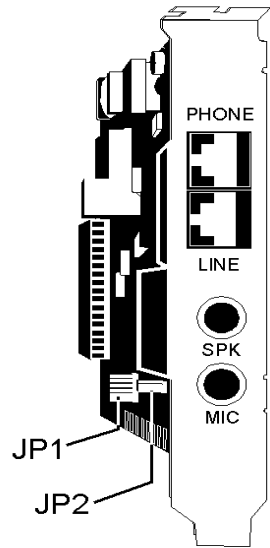
Internal Modem Diagram

5

## Jumper Setting For Comport Selection

plug and play & Non plug and play

### 1.Plug and Play Enable:

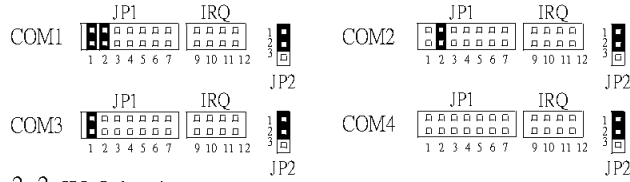If the computer BIOS or operating system provides support for plug and play

COM1 — JP1 — JP2
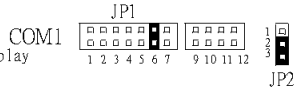
### 2.Disable PnP Setting: (Non PnP Setting)

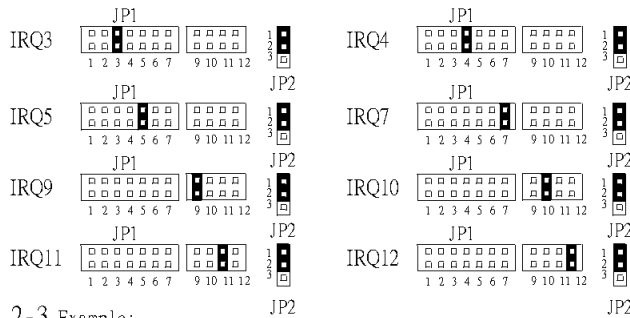Determine a free COM port and IRQ,setting Jumper to match free COM and IRQ.

#### 2-1.COM port Selection:

Determine a free COM port,setting Jumper to match free COM.

COM1 — JP1 — IRQ — JP2
COM2 — JP1 — IRQ — JP2
COM3 — JP1 — IRQ — JP2
COM4 — JP1 — IRQ — JP2

#### 2-2.IRQ Selection:

In addition to setting the COM port, one IRQ must be assigned for the modem.

IRQ3 — JP1 — JP2
IRQ4 — JP1 — JP2
IRQ5 — JP1 — JP2
IRQ7 — JP1 — JP2
IRQ9 — JP1 — JP2
IRQ10 — JP1 — JP2
IRQ11 — JP1 — JP2
IRQ12 — JP1 — JP2

#### 2-3.Example:

| COM | address/IRQ | JP1 / JP2 | Remark |
|-----|-------------|-----------|--------|
| COM1 | 3F8~3FF/IRQ4 | | *1.not recommend |
| COM2 | 2F8~2FF/IRQ3 | | *2.recommend |
| COM3 | 3E8~3EF/IRQ5 | | COM3, IRQ5 |
| COM4 | 2E8~2EF/IRQ7 | | COM4, IRQ7 |

*1.Normally used by mouse.
*2.Note: Disable your Mother Board BIOS COM2.

---

JP4: For selection speaker output or microphone input.
     Because sound card have to different type

1)

| SPK | R | G | | G | SPK | L |
|-----|---|---|---|---|-----|---|

2)
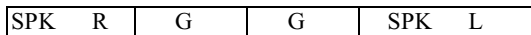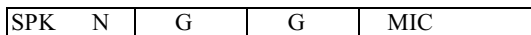
| SPK | N | G | | G | MIC |
|-----|---|---|---|---|-----|

| Pin | Signal Defination |
|-----|-------------------|
| MIC | Microphone Input |
| Comm | Comman |
| SPK | Speaker Output |

Selection microphone input                    Selection Speaker output

JP4                                            JP4
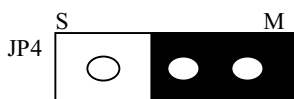
If the jumper setting all correct, than modem can shell microphone and speaker with sound card.

# Chapter 3 Installation procedure for modems

## 3.1. Connecting modem to your computer

### 3.1.1 External modem
With the computer switched off, plug the modem into an available COM port (usually COM 2) using the supplied data cable. Insert the supplied phone cord into the line jack on the rear of the modem, and the phone plug into the wall socket. Insert the power adapter into the power socket on the rear of the modem.

Ensure that the modem powers up correctly when switched on by observing that the power light (market PWR) on the modem lights. Proceed to Software installation.

### 3.1.2. Internal modem
. See addendum sheet for internal modem jumper setting.

. Remove the computer case and insert the modem card into a spare 16-bit ISA expansion slot.

. Close the case.

. Insert the supplied phone cord into the line jack on the rear of the modem, and the phone plug into the wall socket.

. Proceed to Software installation.

## 3.2. Installing Modem Drivers in Windows 95A/95B/98

### 3.2.1. Internal modem with Plug and Play setting enable
Switch on your computer, and allow the system to boot to Windows 95. The modem should be auto-detected by Windows 95/98 Plug and Play.

**In Windows 95A: ( if your Windows 95 is version A)**

(1) Insert the driver disk supplied with the modem into the Floppy or CD-ROM drive and choose *Driver from disk provided by hardware manufacturer,* then click *OK*.
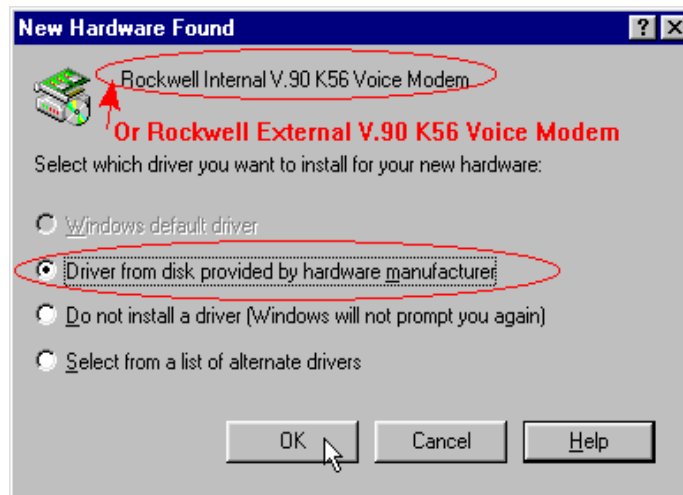


(2) Use *Browse* to select or type in the drive letter of Floppy or CD-ROM (example: **A:\** or **D:\**) in the box and click *OK*.

(3) If you install **External** modem, please select *Rockwell External V.90 K56 Voice Modem* and click *OK*.

**Select Device**

Modem: The following models are compatible with your hardware. Click the one you want to set up, and then click OK. If your model is not on the list, click Show All Devices. This list shows only what was found on the installation disk.

Models:

Rockwell External V.90 K56 Voice Modem

○ Show compatible devices
○ Show all devices

[OK]   [Cancel]
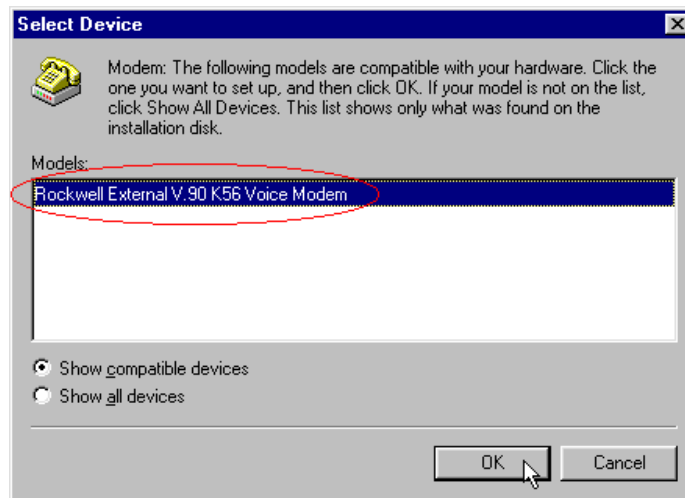
## In Windows95B(OSR2): ( if your Windows 95 is version B)

(1) Click *Next*.

**Update Device Driver Wizard**

This wizard will complete the installation of:

Rockwell 56K Plug _Play Modem

by searching your local drives, network, and Internet locations for the most current driver.

If you have a disk or CD-ROM that came with this device, insert it now.

It is recommended that you let Windows search for an updated driver. To do this, click Next to continue.

[< Back]   [Next >]   [Cancel]

(2) Windows will find the updated driver for *Rockwell External (or Internal) V.90 K56 Voice Modem* , then click *Finish*.

**Update Device Driver Wizard**

Windows found the following updated driver for this device:

Rockwell Internal V.90 K56 Voice Modem

**Or Rockwell External V.90 K56 Voice Modem**
If you want to use this driver, click Finish. If this is not the correct driver and you want to search for a different driver manually, click Other Locations.

Location of Driver

[Other Locations...]

[< Back]   [Finish]   [Cancel]

8
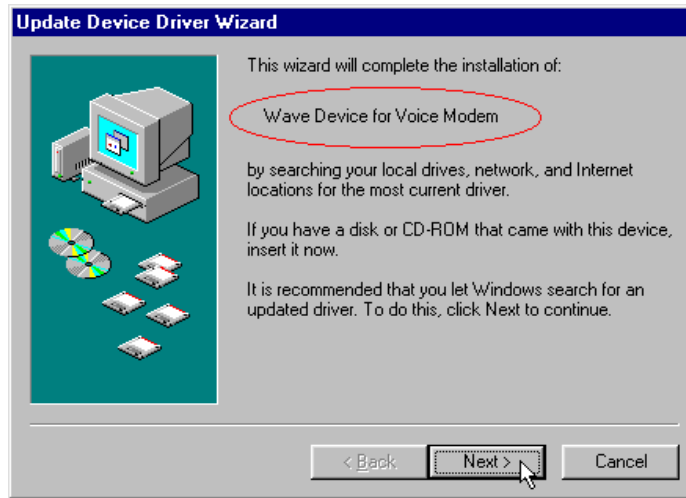
(3) Click *Next*.



(4) Windows will find the updated driver for ***Rockwell Voice Modem Serial Wave Device***, then click ***Finish***.



**In Windows 98: ( if your Windows system is 98)**
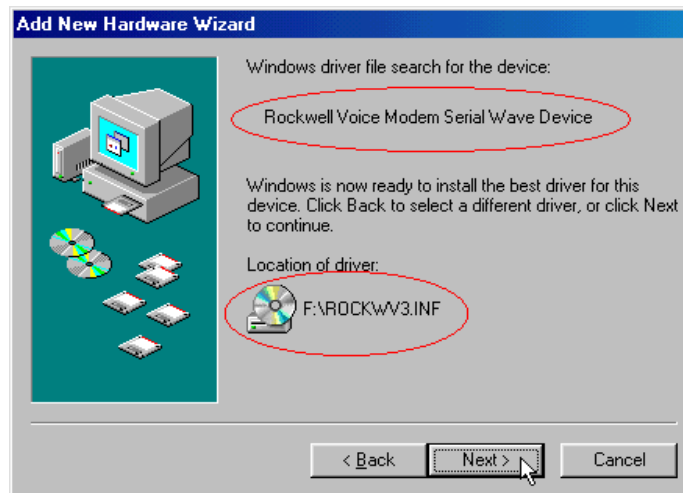
(1) Click *Next*.
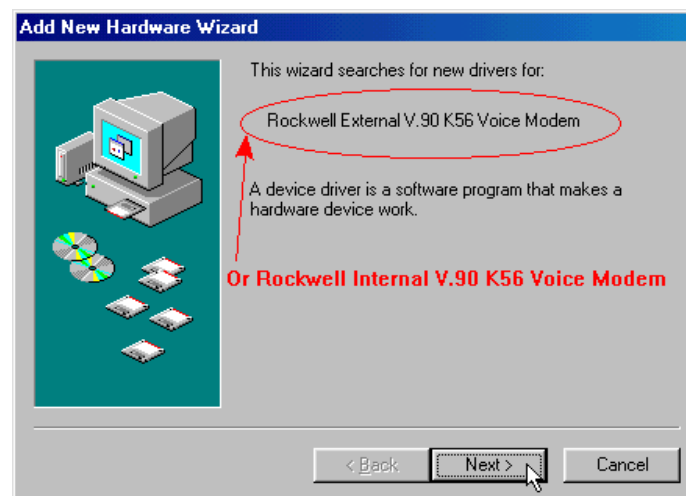
(2) Click *Next*.



(3) Select *Floppy disk drives* or *CD-ROM drive* and click *Next*.



If use floppy, select
"**Floppy disk drives**"

(4)Windows will find *Rockwell External (or Internal) V.90 K56 Voice Modem*, then click *Next*.
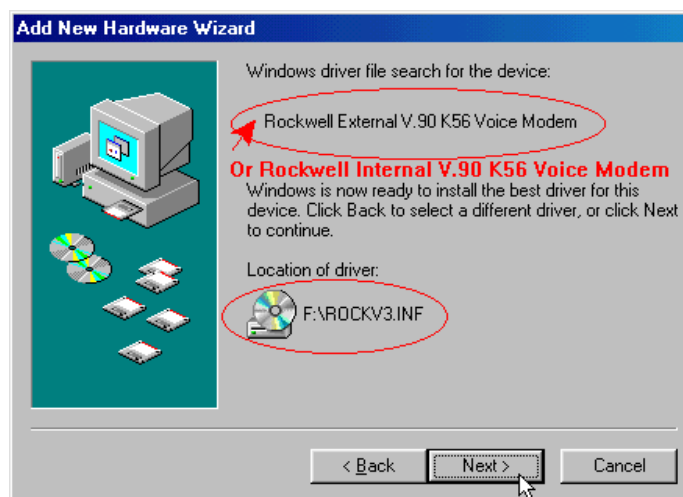
(5) Click *Finish*.
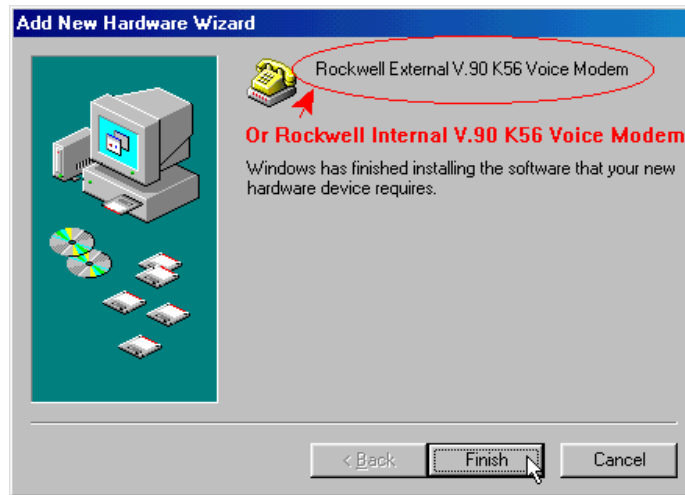


(6) Windows will detect *Wave Device for Voice Modem*.
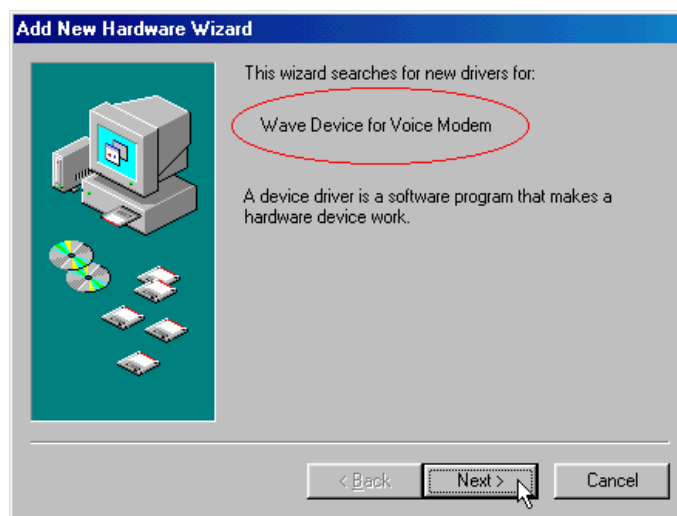


(7) Select *Search for the best driver for your device(Recommended)* and click *Next*.

(8) Select *Floppy disk drives* or *CD-ROM drive* and click *Next*.

**Add New Hardware Wizard**

Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.

☐ Floppy disk drives

☑ CD-ROM drive

☐ Microsoft Windows Update

☐ Specify a location:

D:\3\DRIVER\MODEM\ROCKWELL\HCF\9521 ▼

Browse...

< Back    Next >    Cancel
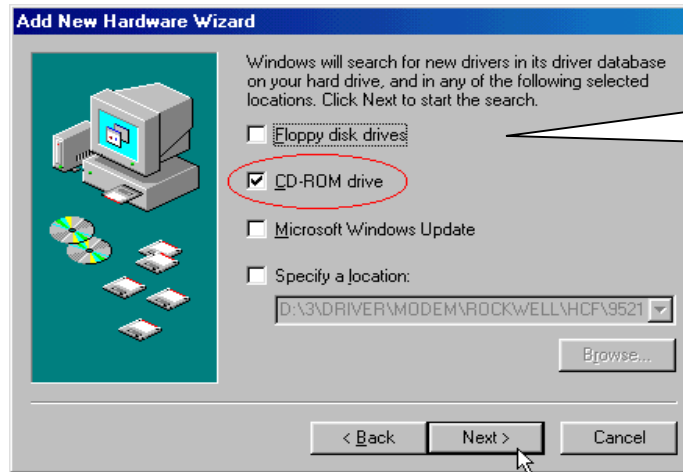
If use floppy, select

"**Floppy disk drives**"

(9) Windows will find *Rockwell Voice Modem Serial Wave Device*.

**Add New Hardware Wizard**

Windows driver file search for the device:

Rockwell Voice Modem Serial Wave Device

Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.

Location of driver:

F:\ROCKWV3.INF

< Back    Next >    Cancel

(10) Click *Finish*.

**Add New Hardware Wizard**

Rockwell Voice Modem Serial Wave Device

Windows has finished installing the software that your new hardware device requires.

< Back    Finish    Cancel

## 3.2.2. Internal Modem with "Plug and Play" setting disable

Special procedure must be followed to install Non Plug and Play internal modem.
Please see the *Hardware installation* to setup the jumpers for Plug and Play.
(If you want to set the modem in COM2/IRQ3, please disable the BIOS of Serial port 2)

(1) Please go to *Start* > *Settings* > *Control Panel* and double-click on *the Add New Hardware* icon.



(2) Click *Next*.
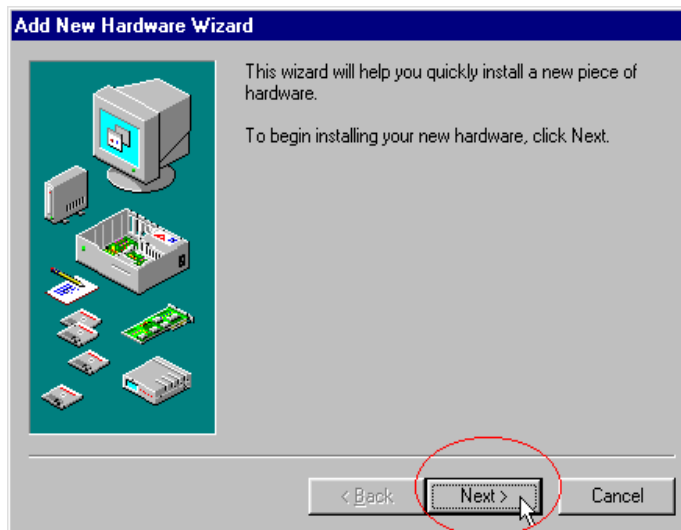


(3) Select *Yes[Recommended]* and click *Next*.



13

(4) Click *Next*.
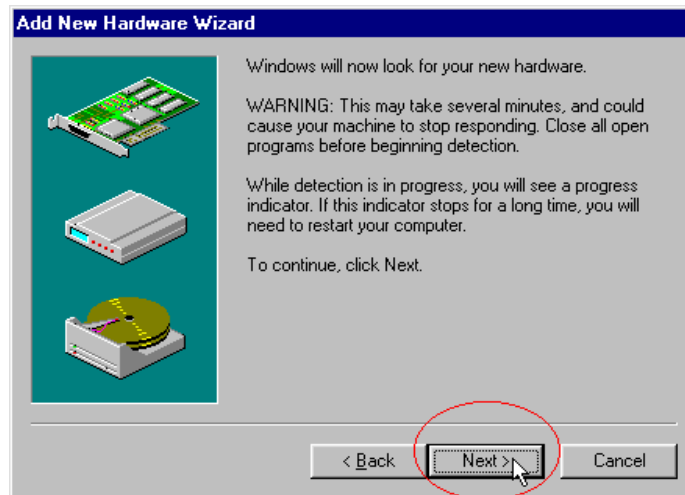


(5)  Windows will take several minutes to detect the new hardware. When the progress is finished, click *Details* to check the new hardware.
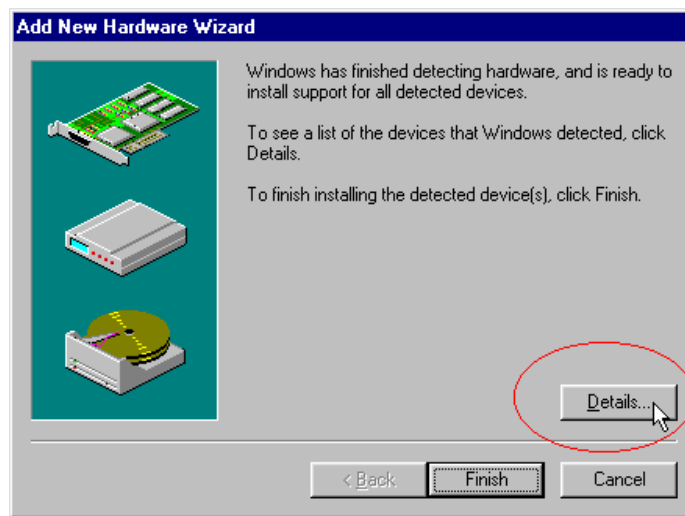


(6) Check the Windows detected the *Communication Port* and click *Finish*.
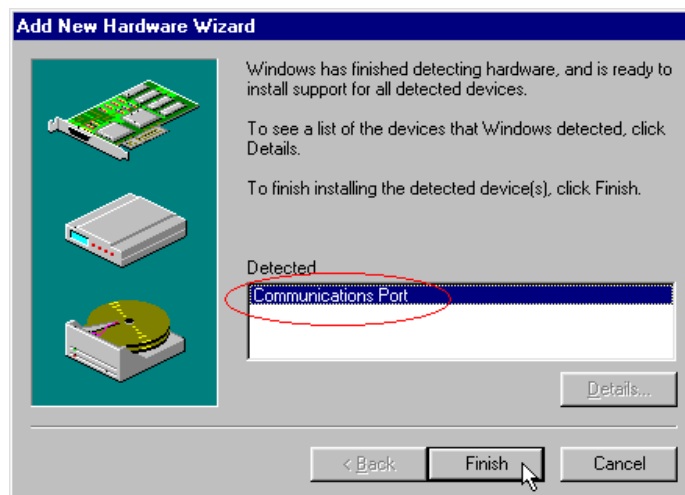
(7) Please go to the **Control Panel** and double-click on the **Modems** icon.
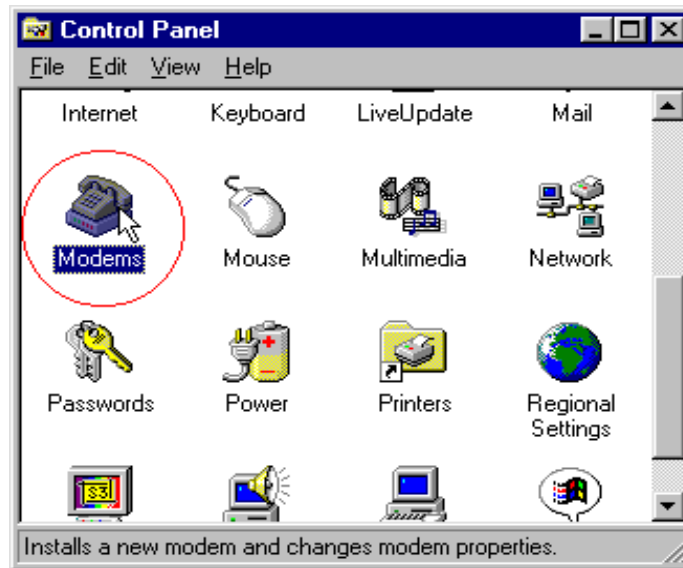


(8) Select **Don't detect my modem; I will select it from a list** and click **Next**.
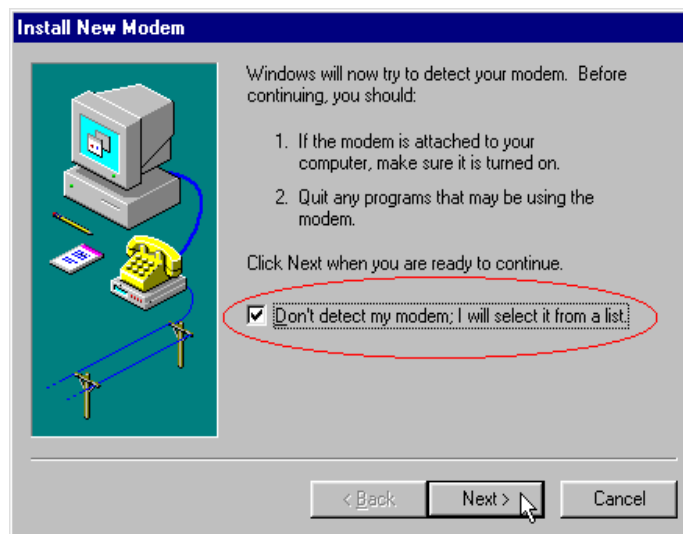


(9) Select **Have Disk**.
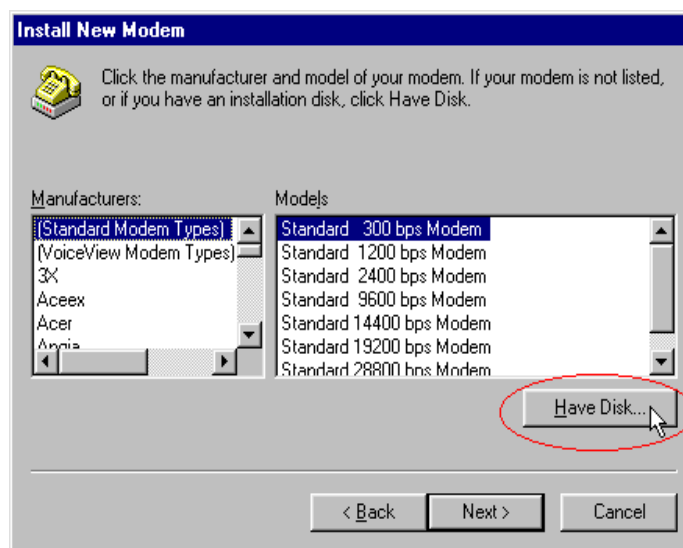
(10) Use *Browse* to select or type in the drive letter of floppy or CD-ROM (example: **A:\** or **D:\**) in the box, then click *OK*.

**Install From Disk**

Insert the manufacturer's installation disk into the drive selected, and then click OK.

OK

Cancel

If use floppy, type "**A:\**"

**Your driver disk device**

Copy manufacturer's files from:

D:\

Browse...
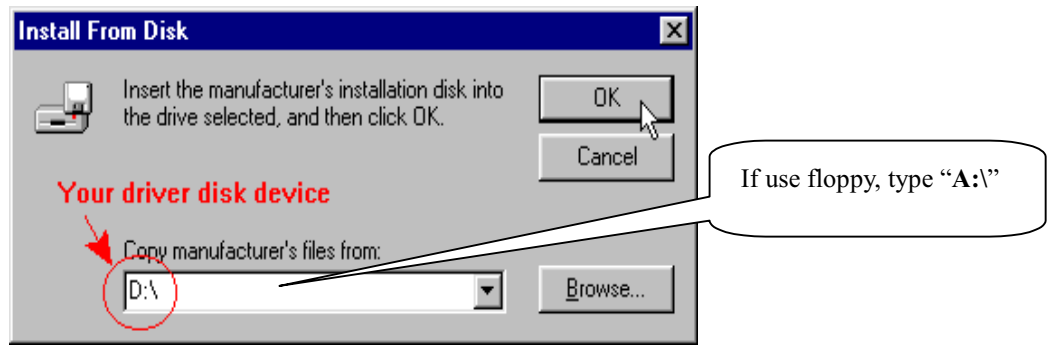
(11) Select Manufacturer: *Rockwell RSS* and Models: *Rockwell Internal V.90 K56 Voice Modem*, then click *Next*.

**Install New Modem**

Click the manufacturer and model of your modem. If your modem is not listed, or if you have an installation disk, click Have Disk.

Manufacturers:
Cirrus Logic Generic
Davicom
Rockwell
Rockwell RSS
TI
UMC

Models:
Rockwell External V.90 K56 Voice Modem
Rockwell Internal V.90 K56 Voice Modem

Have Disk...

< Back    Next >    Cancel
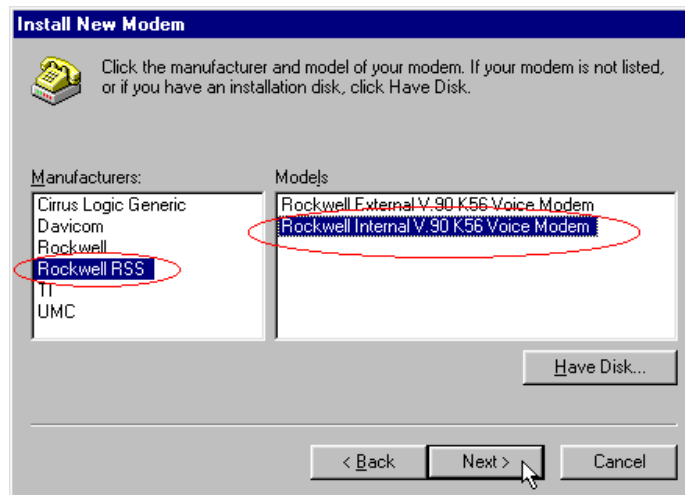
(12) Select the *Communication Port* depending on your modem and click *Next*.

**Install New Modem**

You have selected the following modem:

Rockwell Internal V.90 K56 Voice Modem

Select the port to use with this modem:

Communications Port (COM1)
Communications Port (COM2)
ECP Printer Port (LPT1)
Printer Port (LPT1)

**Select the COM port for your modem**

< Back    Next >    Cancel
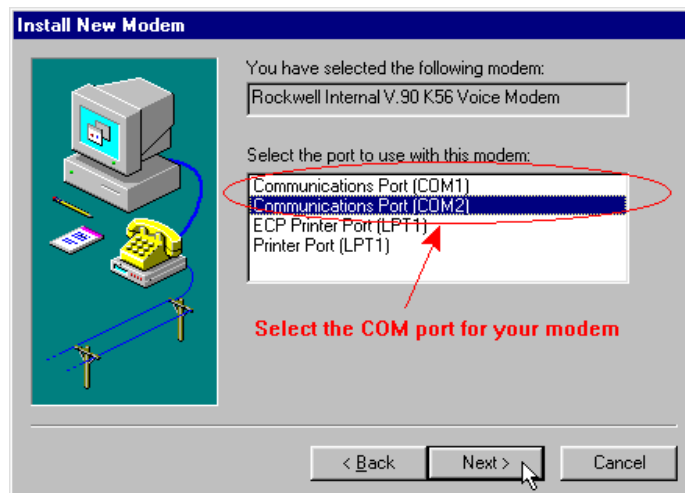
(13) If you use **Windows 95B(OSR2)/98**, the windows will detect the *Wave Device for Voice Modem*, please click *Next*. If you use **Windows 95A**, please go to **step(15)**.



(14) Windows will find *Rockwell Voice Modem Serial Wave Device* and click *Finish*. (If in **Windows 98**, please click *Next* > *Next* > *Next* > *Finish*, then go to **step(16)**.)



(15) The Windows will show: *Your modem has been set up successfully*, then click *Finish*.
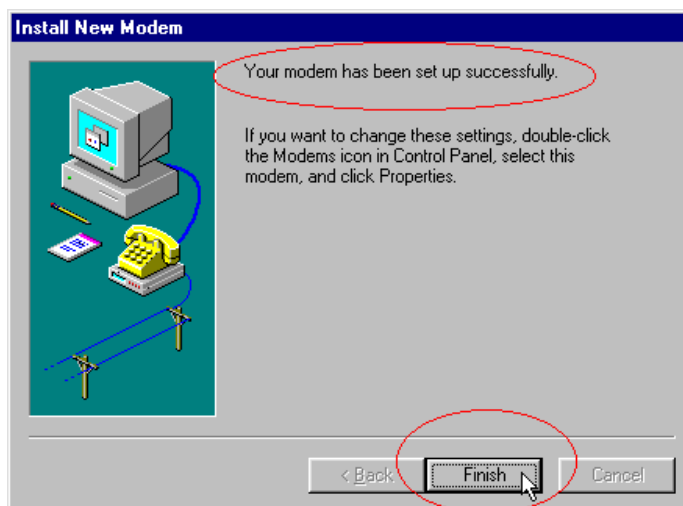
(16) You will see the **Rockwell Internal V.90 K56 Voice Modem** in the list and click **OK**.
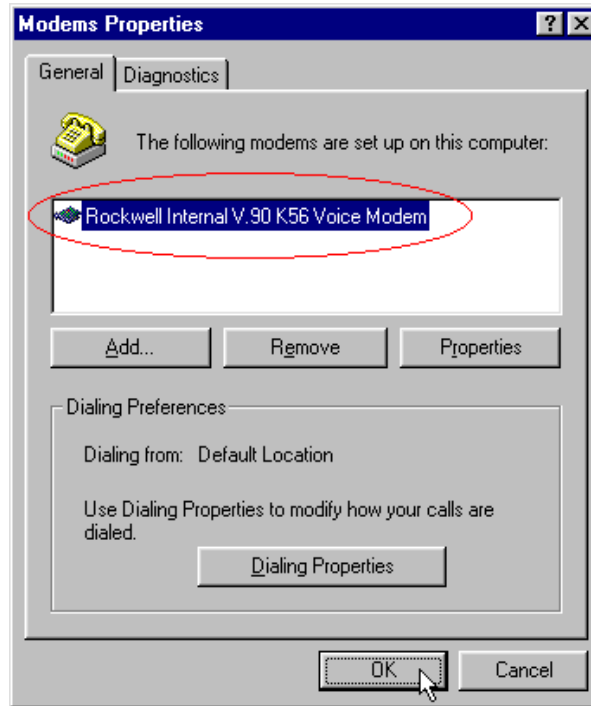
When Installation is complete, please proceed to setup dial-up networking and another communication software.

### 3.3. Modem Diagnostic in Windows 95/98

(1) Please go to **Start** > **Settings** > **Control Panel** and double-click on the **Modems** icon.

(2) Test the modem by clicking on the *Diagnostics* tab.
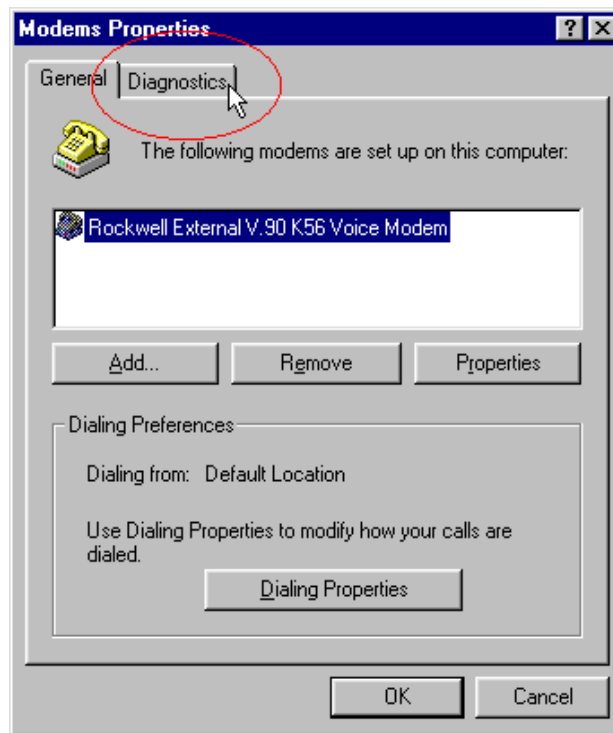


(3)Click on COM port ( example: *COM2 or COM3* ) that the modem is setting, then click on the *More Information* button.
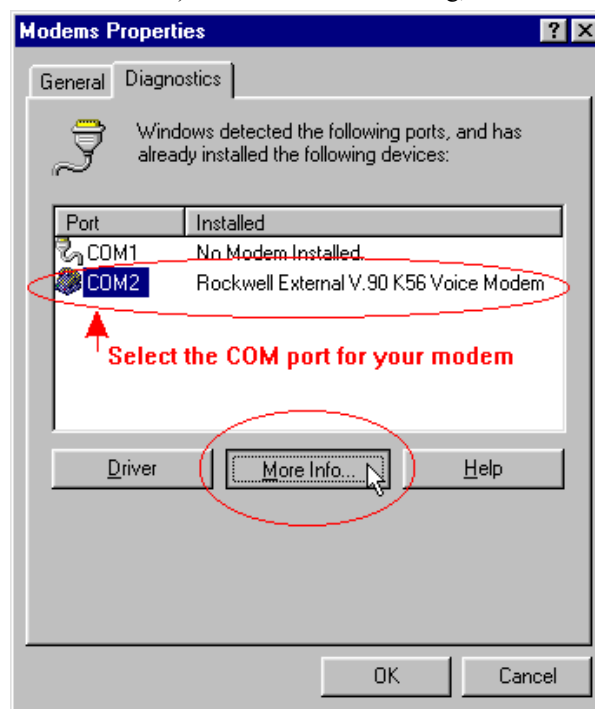
(4)If, after communicating with the modem, the AT-Command screen appears and response **OK**, that mean the modem is working properly.

```
More Info...

Port Information
    Port:           COM2
    Interrupt:      3
    Address:        2F8
    UART:           NS 16550AN
    Highest Speed : 115K Baud

Rockwell External V.90 K56 Voice Modem
    Identifier:     SERENUM\RSS00B0

    Command  | Response
    ATI1     | 255
    ATI2     | OK
    ATI3     | V2.083-K56_DLS
    ATI4     | FM-56SA FOR STANDARD 07/13/98
    ATI5     | 022
    ATI6     | RCV56DPF L8570A Rev 47.22/47.22
    ATI7     | OK
    AT+FCLA...| 0,1,1.0

                    [    OK    ]
```
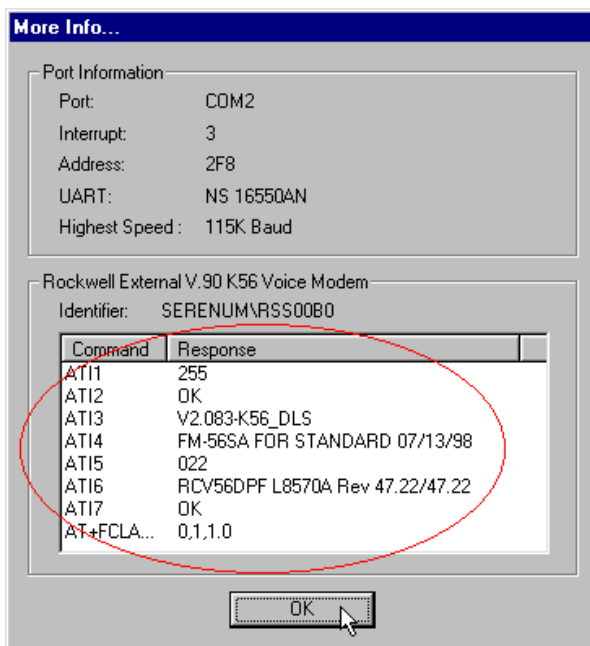
## 3.4 Installing Modem Drivers in Windows NT4.0

**Note:** If your modem is internal, we suggest setting the modem jumpers on **Non Plug and Play** mode(see page 7), because it is simpler to install than **Plug and Play** mode in Windows NT4.0.

(1) Please go to **Start** > **Settings** > **Control Panel**.
   * If your modem is **Internal** modem, please double-click on the **Ports** icon .
   * If your modem is **External** modem,    please go to **step(5)**.

```
Control Panel                          _ □ ✕

 File   Edit   View   Go   Favorites   Help    e

   Mouse     Multimedia   Network      ODBC

   PC Card     Ports      Printers    Regional
   (PCMCIA)                           Settings

 SCSI Adapters  Server    Services    Sounds

1 object(s) selected      My Computer
```

(2) Click on the *Add* button.
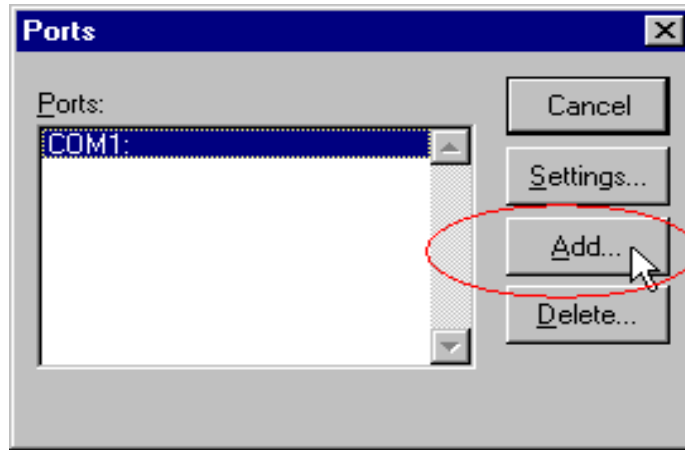


(3)Setup COM port, I/O port and IRQ for your internal modem and click *OK*.If you set modem in COM 2(as example), please disable the **Serial Port 2** in the BIOS of the motherboard.
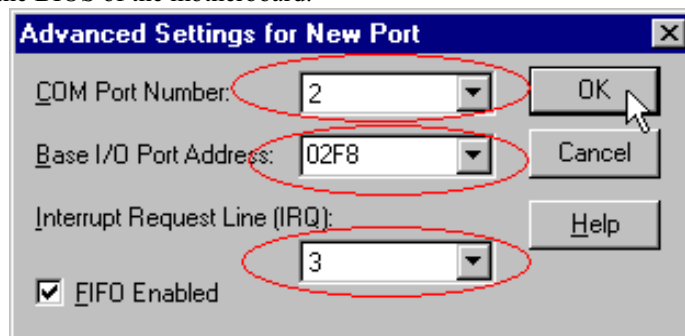


(4) Click on the *Restart Now* button to restart your Computer.
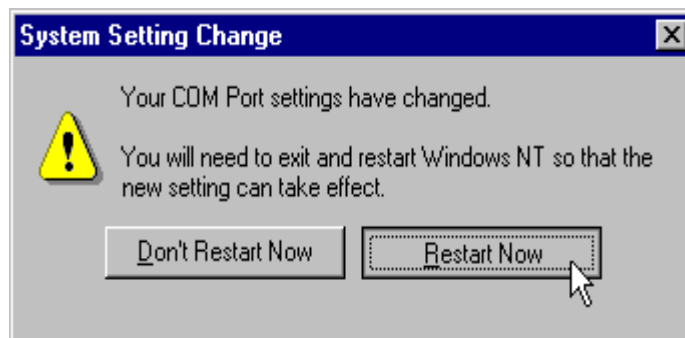


(5) Please go to *Start* > *Settings* > *Control Panel* and double-click on the *Modems* icon.

(6) Select *Don't detect my modem; I will select it from a list* and click *Next*.

**Install New Modem**

Windows NT will now try to detect your modem. Before continuing, you should:

1. If the modem is attached to your computer, make sure it is turned on.

2. Quit any programs that may be using the modem.

Click Next when you are ready to continue.
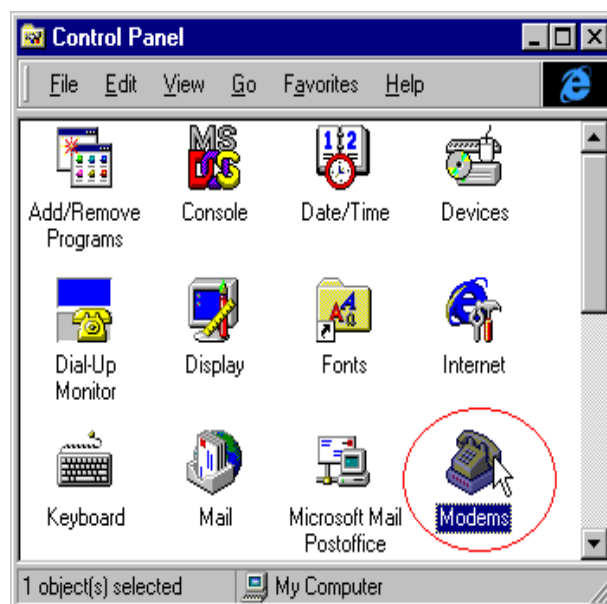
☑ Don't detect my modem; I will select it from a list.

< Back    Next >
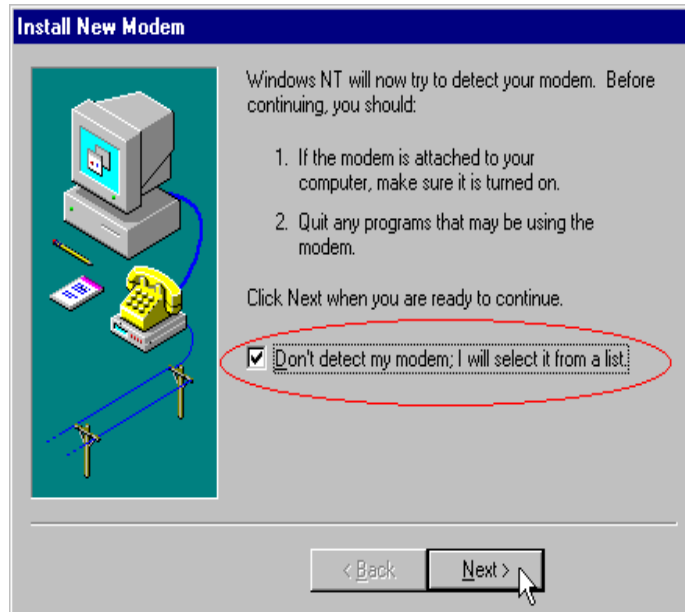
(7) Click on the *Have Disk* button.

**Install New Modem**

Click the manufacturer and model of your modem. If your modem is not listed, or if you have an installation disk, click Have Disk.

Manufacturers:
[Standard Modem Types]
[VoiceView Modem Types]
3X
Aceex
Acer
Alltron

Models
Dial-Up Networking Serial Cable between 2 PCs
Standard  300 bps Modem
Standard 1200 bps Modem
Standard 2400 bps Modem
Standard 9600 bps Modem
Standard 14400 bps Modem
Standard 19200 bps Modem

Have Disk...

< Back    Next >    Cancel

(8)Key in or use *Browse* to select or type in the driver letter of floppy or CD-ROM drive (**A:\** or **D:\**) and click *OK*.

**Install From Disk**

Insert the manufacturer's installation disk into the drive selected, and then click OK.

OK

Cancel

If use floppy, type "**A:\**"

Copy manufacturer's files from:

D:\    Browse...

22
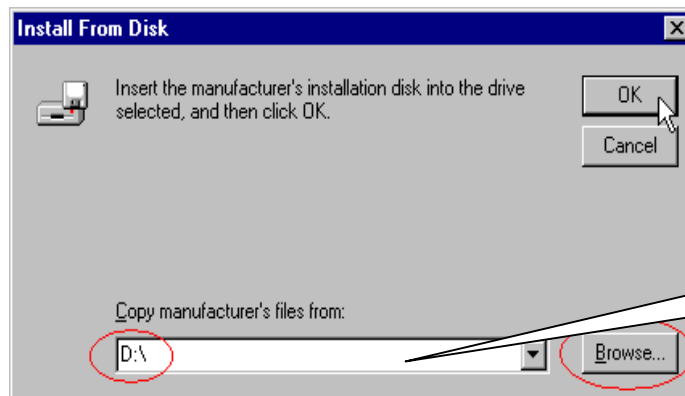
(9) Select *Manufacture*: **Rockwell RSS** and *Models*: **Rockwell External (or Internal) V.90 K56 Voice Modem** and *Next*.
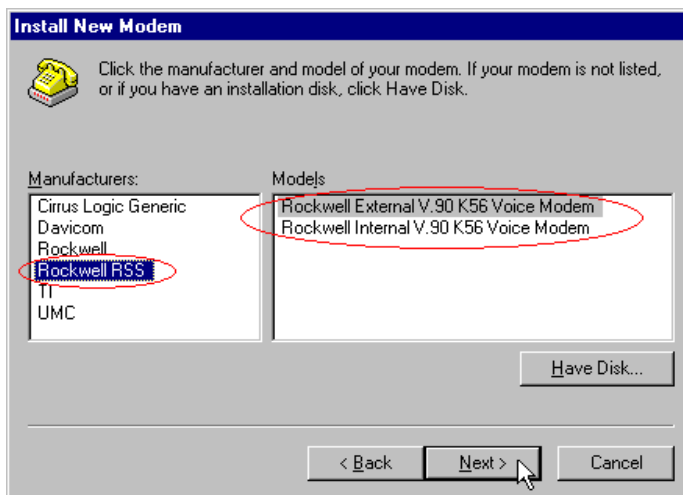


(10) Select COM port depending on your modem and click *Next*.
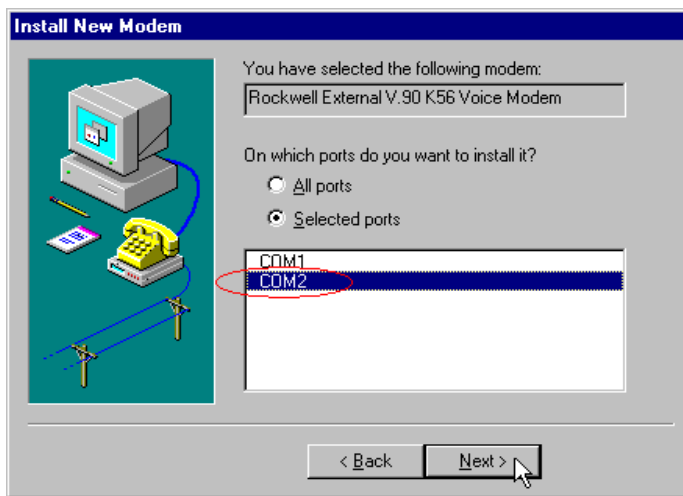


(11) Click on the *Finish* button.
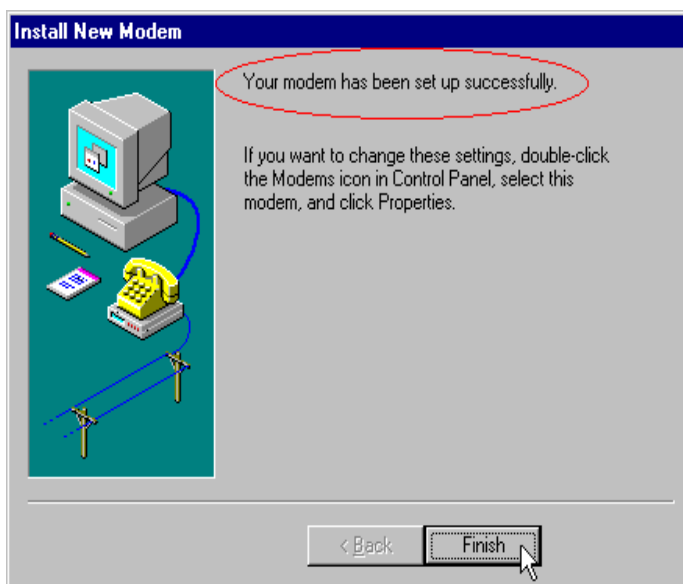
(12) You can see the modem: **Rockwell External (or Internal) V.90 K56 Voice Modem** in the list and click **Close**.
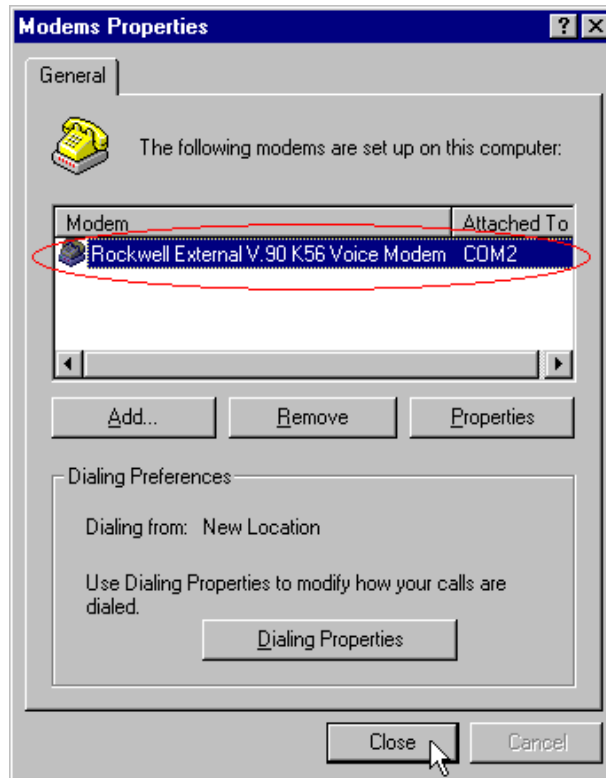


(13) Click **Yes** to configure the **Dial-up Networking**.
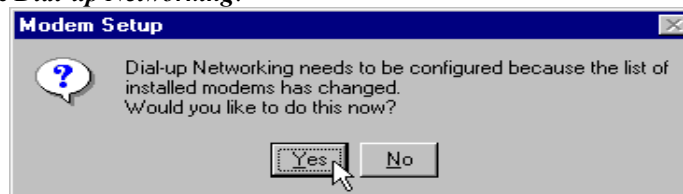


(14) Click on the **Add** button.
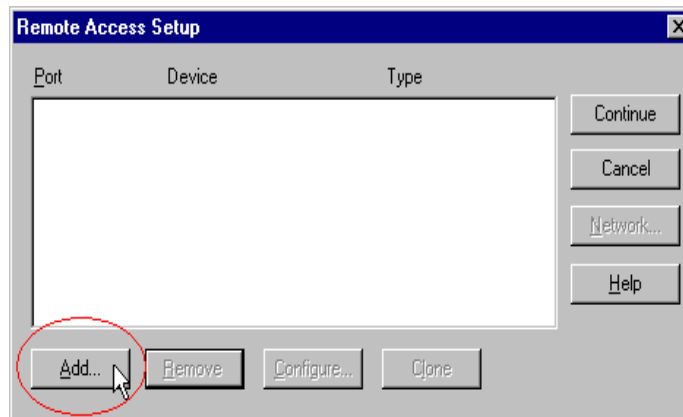


(15) Select **Rockwell External (or Internal) V.90 K56 Voice Modem** and click **OK**.
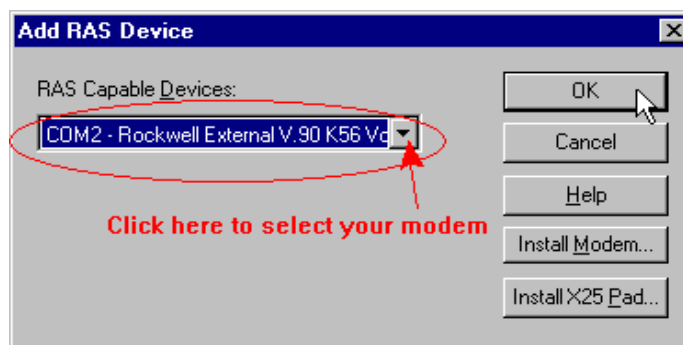
(16) Click on the *Configure* button.
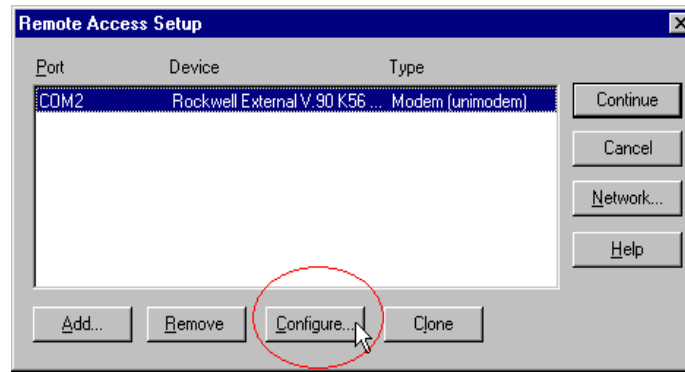


(17) Select *Dial out only* or other options and click *OK*.
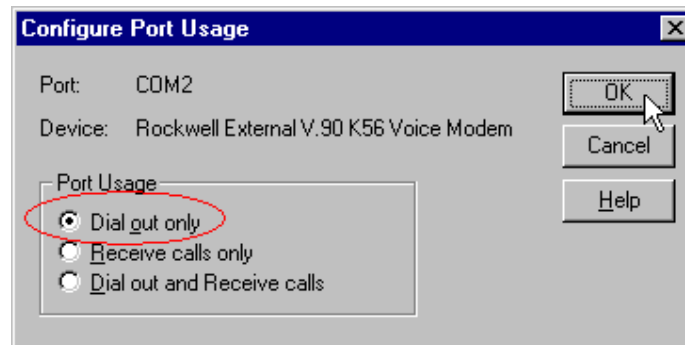


(18) Click on the *Network* button.
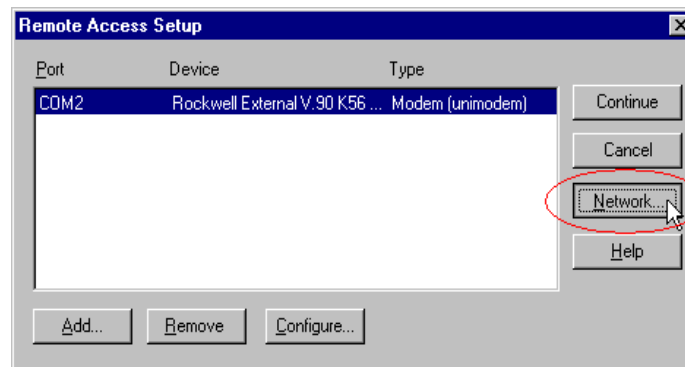


(19) Select *TCP/IP* and click *OK*.
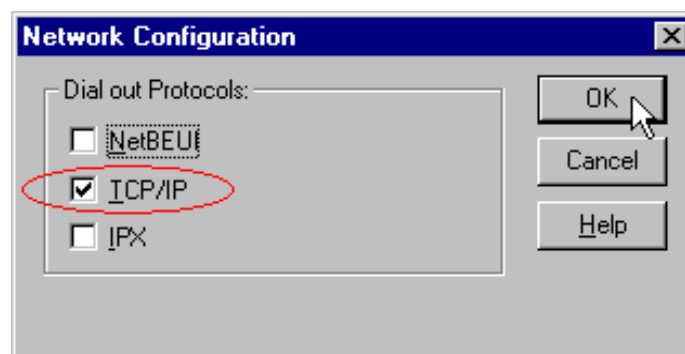
(20) Click on the *Continue* button.
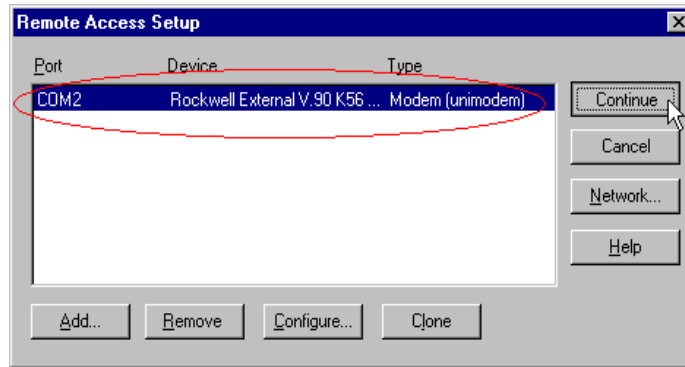


(21) Click on the *Yes* button to restart your computer.
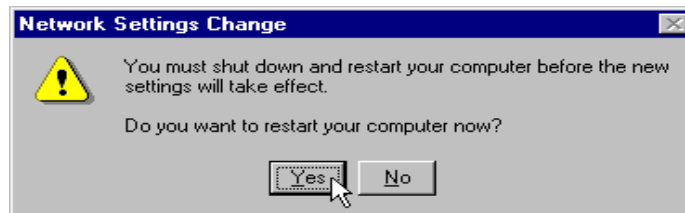


## 3.5. Setup Dial-Up Networking in Windows NT4.0

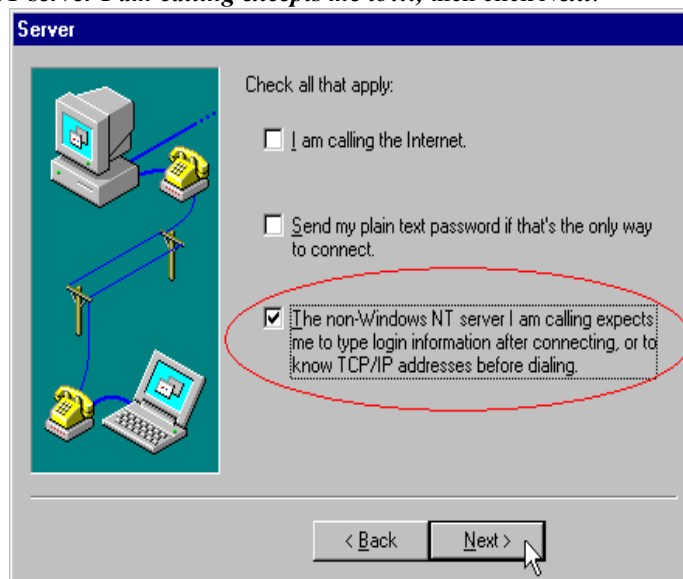(1) Please go to *My Computer* > *Dial-Up Networking*.
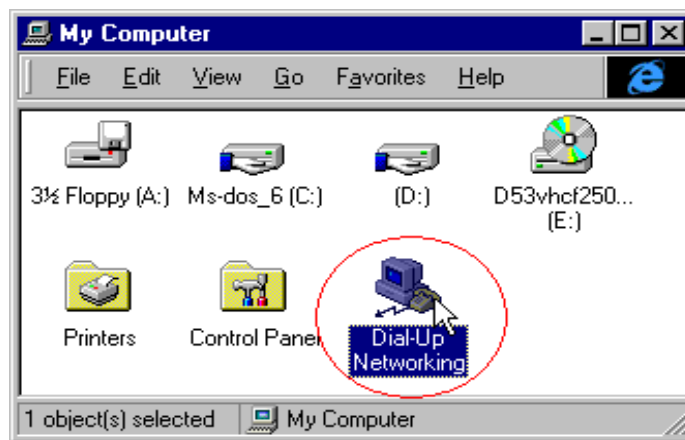


(2) If you never setup the phonebook before, the window will show the message: *The phonebook is empty,* then click *OK*.
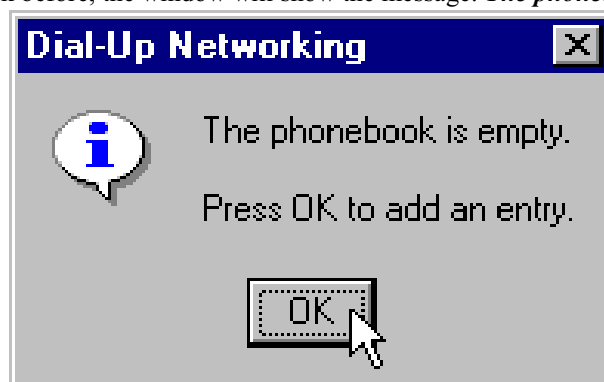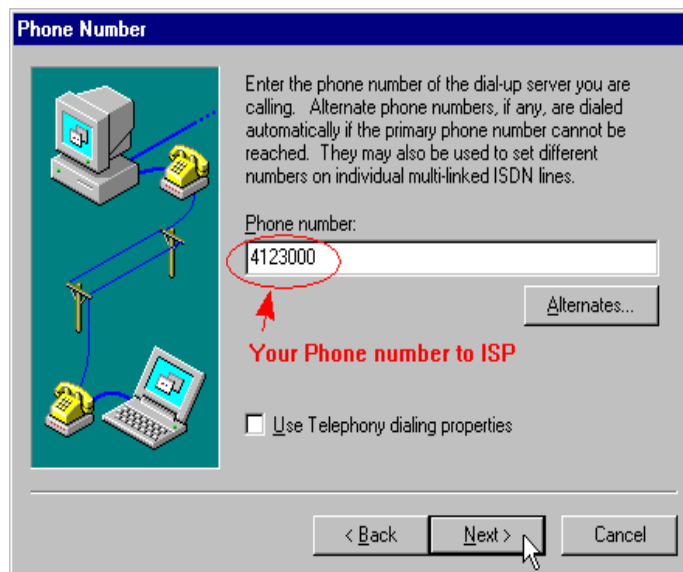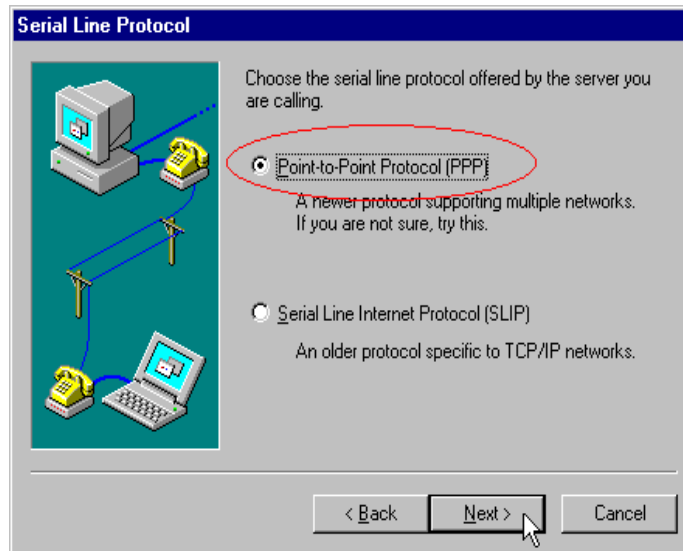
(3) Type in any name you like and click *Next*.
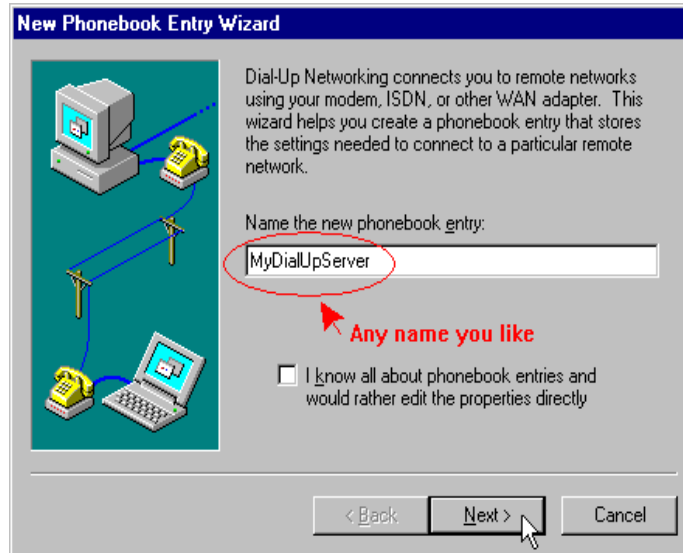


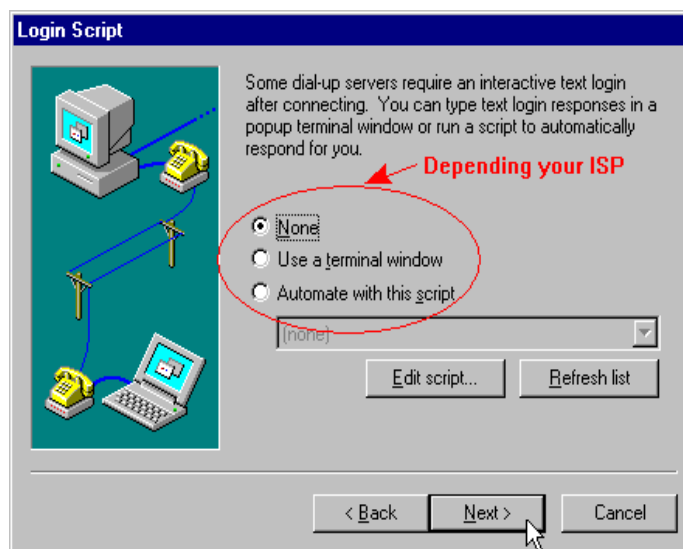(4) Select *The non-Windows NT server I am calling excepts me to…,* then click *Next*.



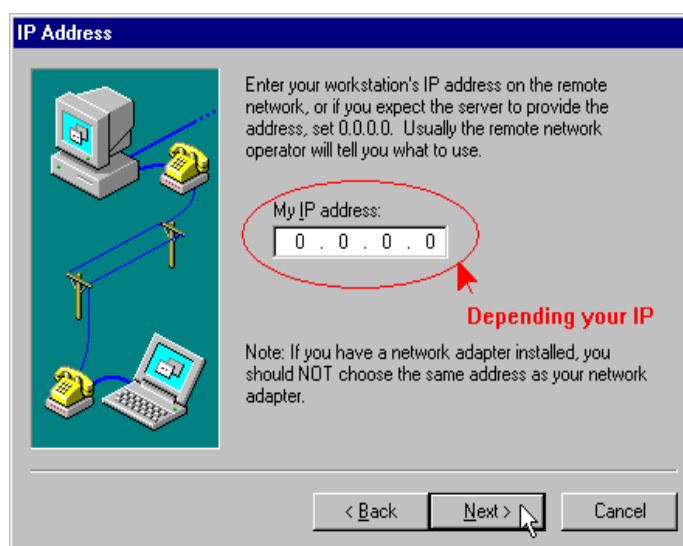(5) Type in the *Phone number* to your Internet Service Provider, then click *Next*.

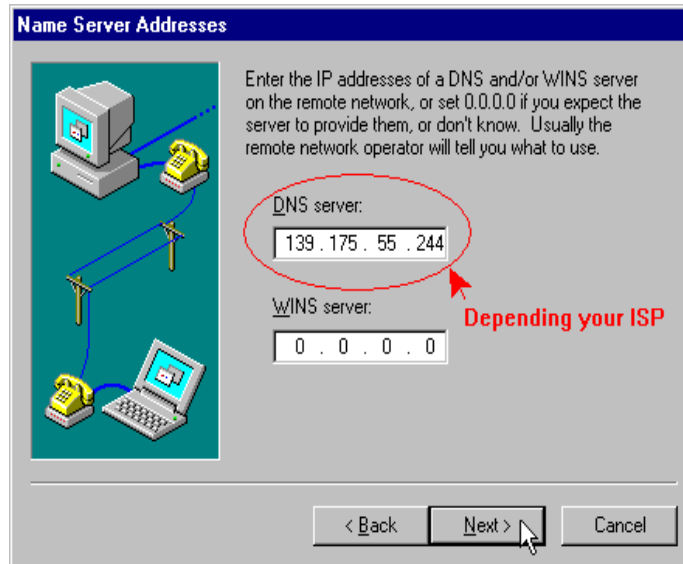(6) Select **Point-to-Point Protocol (PPP)** and click **Nex**t.



(7) Select **None** or **Use a terminal window** depending on your ISP and click **Next**.
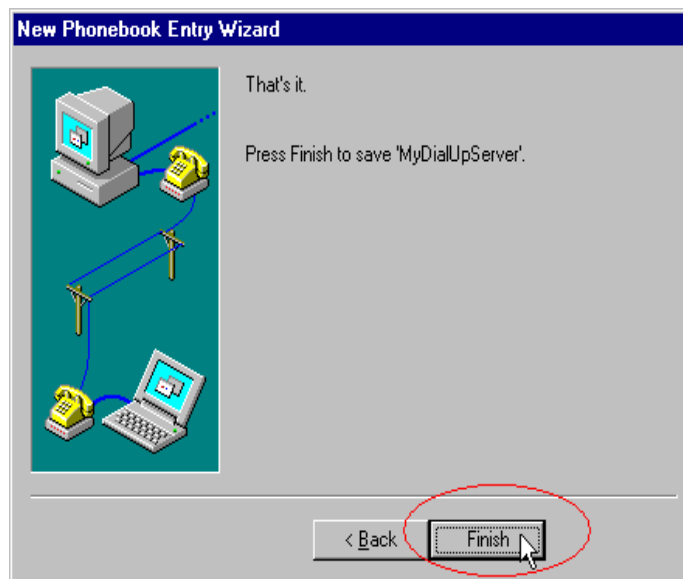


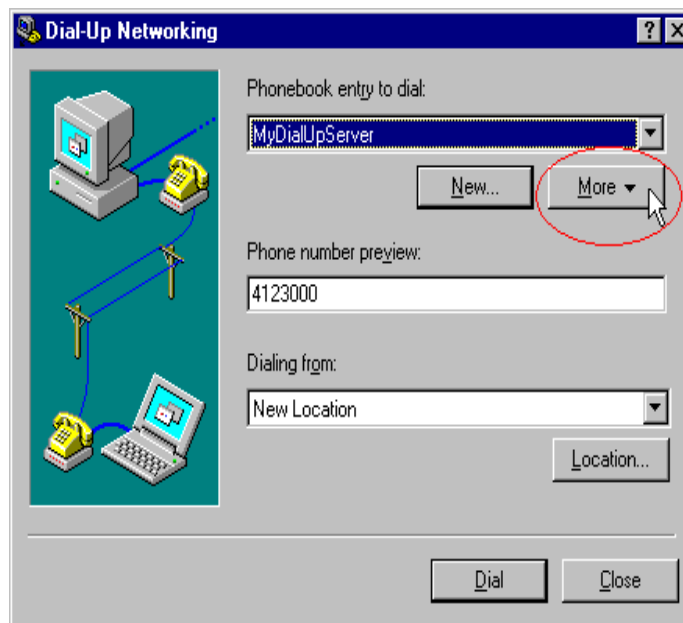(8) If you have fixed IP address, please type in your IP;or you can ignore it and click **Next**.

(9)Type in DNS server for your ISP. If your ISP support dynamic DNS server, you can ignore it and click *Next*.
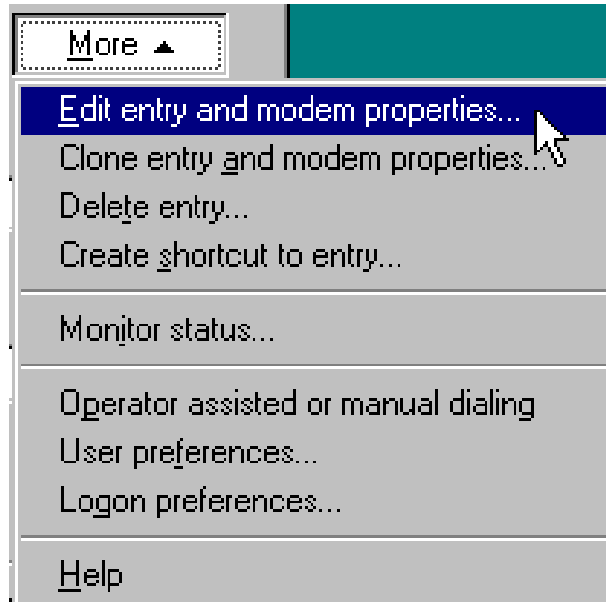


(10) Click *Finish*.



(11) Click on the *More* button.

(12) Select *Edit entry and modem properties*.



(13) Select your modem: *Rockwell External (or Internal) V.90 K56 Voice Modem* and click on the *Configure* button.
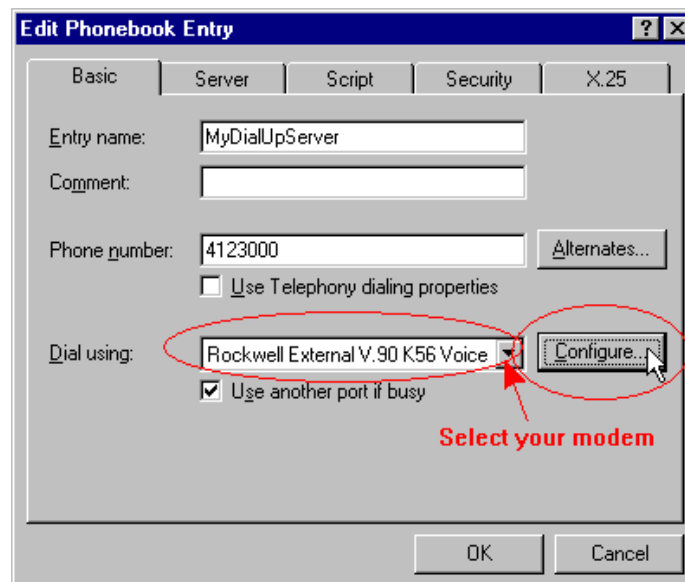


(14) Select *initial speed*: **115200** and select all the options for *Hardware Features*, then click *OK*.
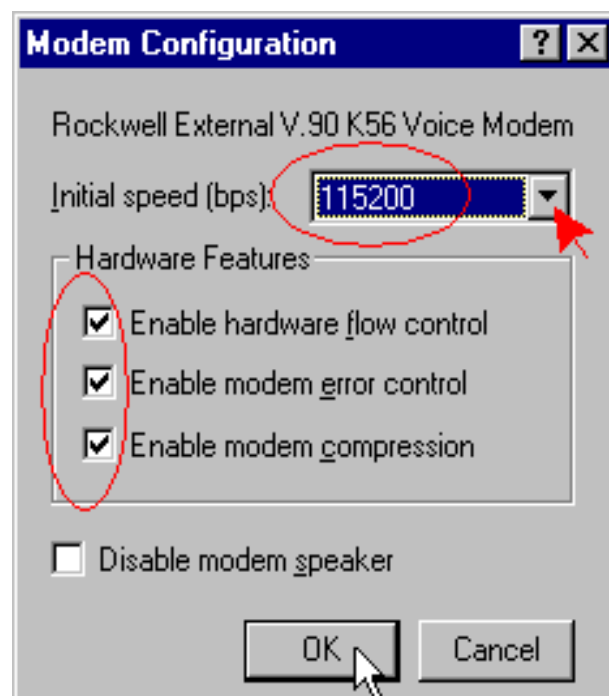
(15) Select **TCP/IP**, **Enable software compression** and **Enable PPP LCP extensions,** then click OK.
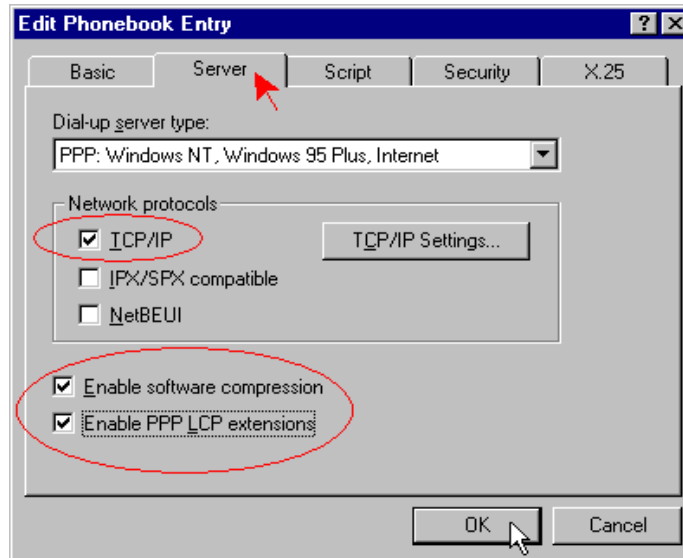


(16) Select **Accept any authentication including clear text**, then click **OK**.
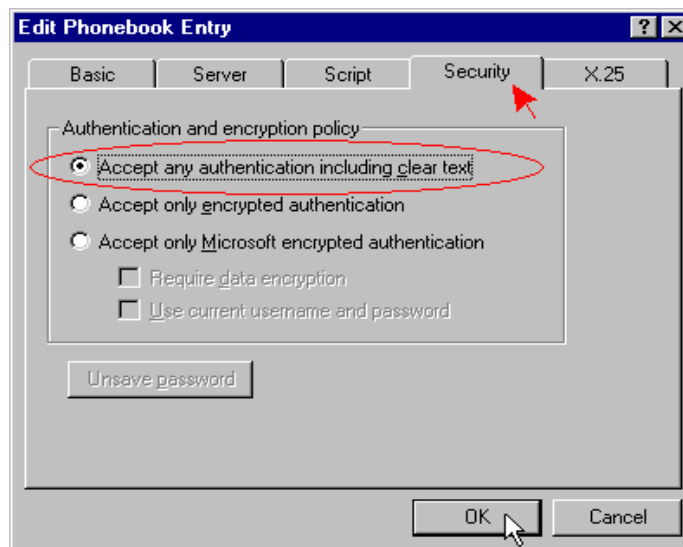


(17) Click **Dial**.

(18) Type in your *User name* and *Password*, then click *OK*.



Then the modem will dial out and connect to the internet.

# *Chapter 4 Trouble Shooting*

## If you are fails to install your modem

Internal modem :
- Make sure the COM port and IRQ Setting are correctly, and it doesn't conflict with another board installed in your computer.
- If your modem is using COM3 or COM4, Windows might not recognize it, and you will get a message such as " Modem does not exist".   Th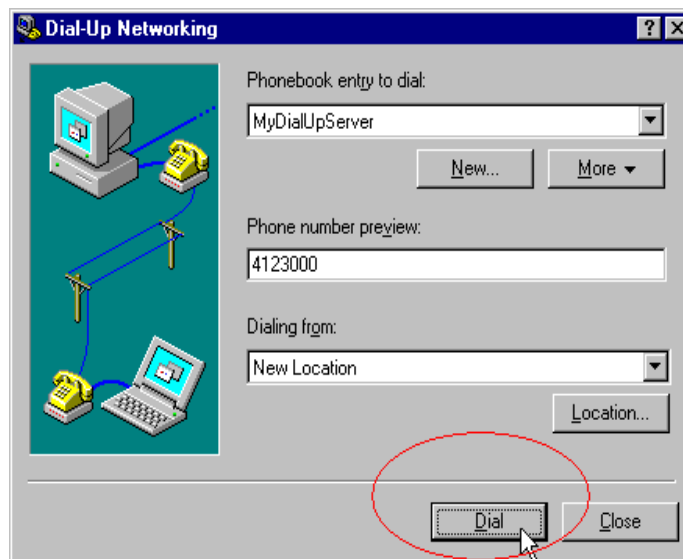e reason is that most PC don't allow COM ports to share the same IRQ line, thus if your mouse is using COM 1, but your modem is using COM 3, the conflict might arise, unless your reconfigured modem to another IRQ line (For example IRQ 5), also you need to tell windows reassigned IRQ-line to take effect.

| Standard COM Port | IRQ | Address |
|---|---|---|
| COM1 | 4 | 3F8 |
| COM2 | 3 | 2F8 |
| COM3 | 4 | 3E8 |
| COM4 | 3 | 2E8 |

External    modem:
- Be sure your RS-232 Cable and Power adapter are connected properly between modem and your PC.
- Make sure AC outlet and modem power-switch is set to on-position.

If above are correctly and the modem LED are not lit, Please contact the dealer or  distributor.

## Modem won't execute AT commands

- The COM port of your software or DTE perhaps set up incorrectly, for example, your software may be configured on COM 1, but your modem may be configured as another COM port (such as COM 2).
- Check RS-232 cable is connected properly, verify modem LED " DTR" is ON, otherwise check above procedure again.
- Be sure you are sending commands at an acceptable baud rate, 300, 1200, 2 400, 4800, 9600, 19200, 38400, 57600 or 115200bps.
- Make sure you are using an acceptable character format, for example : 8 data bits, no parity, one stop bit.
- Type AT&F [ENTER], reset original factory default and try execute AT commands again.

## Modem will not dial-out

- Check your phone cable connected properly into "LINE" jack.
- sending dial tone incorrectly, disable X4.

## Modem will not answer an incoming call

- Check your phone cable connected properly into "LINE" jack.
- By connect a Telephone to the " PHONE" jack. The attached telephone will ring if you try calling from another telephone line.
- Configured the modem to Auto-answer modem.
  Type AT S0=n where n is the number of incoming rings and check light "AA" is on.( External modem)

## No connection after modem dial out

- Remote modem may be not setting to answer mode, if you aren't hearing a high-pitch tone when remote modem answering.
- Perhaps poor-quality or noise telephone lines try another call.

## Data error when modem connection

- Make sure your software data format is match to remote side (for example : 8,N, 1).
- Make sure the modem flow control method is matched to communication software.
- Try another call may be poor quality or noise telephone lines.

## Fax and voice problems

- Be sure the Data Communication is installed and worked properly, otherwise check the mentioned procedure carefully and consult the Fax/Voice manual step by step.

# Chapter 5 FCC Requirements

This equipment complies with Part 68 or 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 all of those 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 should not 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 for your calling area.    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 advance notice isn't practical, 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 changes in it's facilities, equipment, operations or procedures that could affect the proper functioning of your equipment.    If they do, 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 that your disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.    This equipment may not be used on coin service provide by the telephone company.    Connection to party lines is subject to statetariffs.

# Federal Communications Commission
# Radio Frequency Interference Statement.

Note: This equipment has been tested and found to comply with the limits for a lass B digital device pursuant to Part 15 of the FCC Rules.   These limits 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 encouraged to try to correct the interference by one 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 in 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.

## APPENDIX 1:
## How to Change the V.90/K56Flex Protocol for Rockwell 56K ACF Modem

**Note:** This upgrade program is **only for Rockwell 56k ACF modem** (1MB flash ROM).

1. Please see the user manual to install the Modem Driver first and check
   your modem is OK.

2. Please select one file from driver floppy: (Depending on the protocol of your ISP
   and modem)

   "***v90e.exe": for **V.90** protocol and **External** modem.

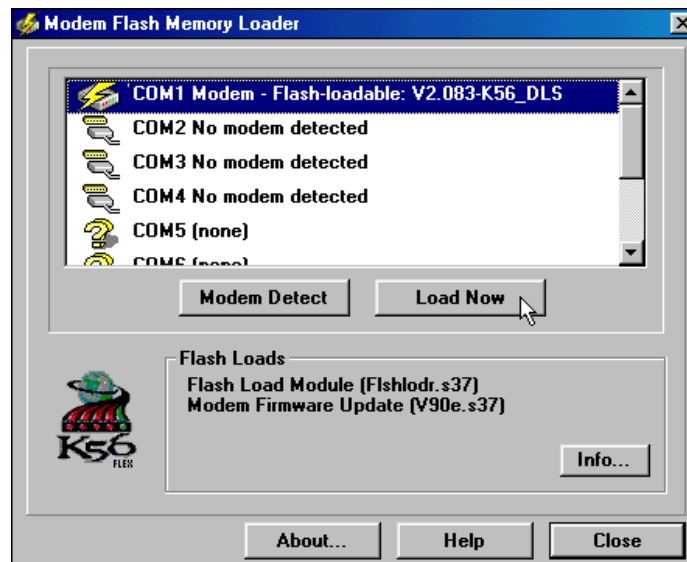   "***v90i.exe": for **V.90** protocol and **Internal** modem.

   "***k56e.exe": for **K56Flex** protocol and **External** modem.

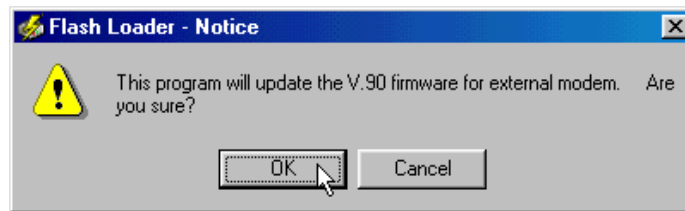   "***k56i.exe": for **K56Flex** protocol and **Internal** modem.

   P.S. "***" is the first three letters for your country.

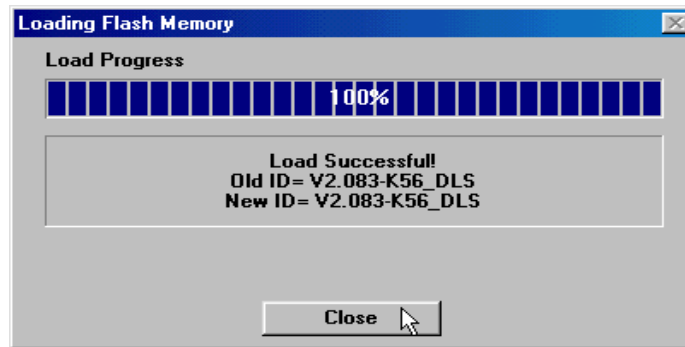   Double-click on the file (upgrade program) and see the procedure as following:

(1) The program will find your modem and click on the ***Load Now*** button.(If the program can not find your modem, please check
   your upgrade program is correct and the modem is working fine. Then run the upgrade program again)
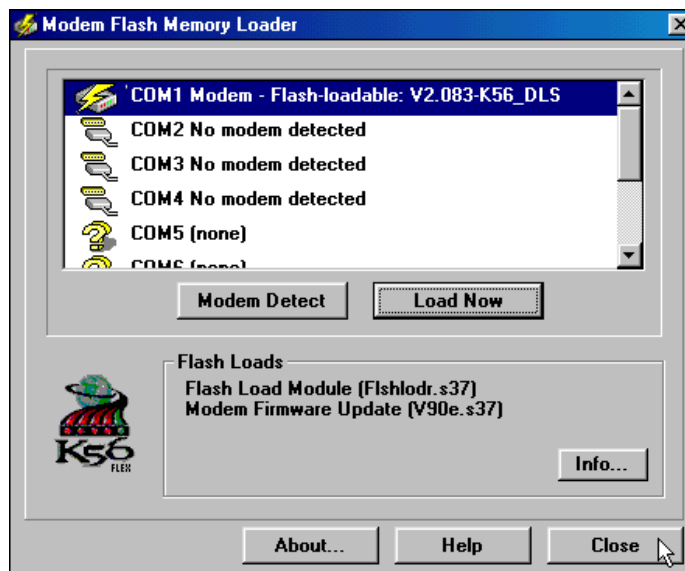
(2) Check the upgrade program is correct and click **OK**.

**Flash Loader - Notice**

This program will update the V.90 firmware for external modem.   Are you sure?

OK     Cancel

(3) When the **Load Progress** display **100%**, click on the **Close** button.

**Loading Flash Memory**

**Load Progress**

100%

Load Successful!
Old ID= V2.083-K56_DLS
New ID= V2.083-K56_DLS

Close

(4) Click on the **Close** button to close the upgrade Window.

**Modem Flash Memory Loader**

'COM1 Modem - Flash-loadable: V2.083-K56_DLS
COM2 No modem detected
COM3 No modem detected
COM4 No modem detected
COM5 (none)
COM6 (none)

Modem Detect     Load Now

Flash Loads
Flash Load Module (Flshlodr.s37)
Modem Firmware Update (V90e.s37)

Info...

K56 FLEX

About...     Help     Close

3. If you can't check AT command after programming, please restart your modem and computer to check again. If the modem is no response, please contact your local dealer for help.