EXHIBIT C

User Manual

User's Manual

PIC100

ISDN PC Card

Uniform Industrial Corp.

Contents

1. BEFORE YOU START 3

1.1 ABOUT YOUR PIC100 3
1.2 WHAT IN IT FOR YOU 4
1.3 BEFORE USING PIC100 4
1.4 ISDN LINE CONNECTION CHARGE 4
1.5 SYSTEM CONNECTION 4
1.5.1 Inserting And Removing Your PC Card 4
1.5.2 Connecting Your PC Card and Interface Cable 5
1.5.3 The ISDN Connection 5

2. INSTALLING PIC100 6

2.1 COMMON INSTALLATION PROCEDURES 6
2.2 INSTALLATION ON WINDOWS 95 6
2.2.1 Card and Socket Service Confirmation 6
2.2.2 PIC100 Installation 7
2.2.3 ISDN Line Connection 9
2.2.4 PC Connection Confirmation 9
2.3 INSTALLATION ON WINDOWS NT 4.0 10
2.3.1 Card and Socket Service Confirmation 10
2.3.2 PIC100 Installation 10
2.3.3 ISDN Line Connection 14
2.3.4 PC Connection Confirmation 14
2.4 INSTALLATION ON MACINTOSH 15
2.4.1 Card and Socket Service Confirmation 15
2.4.2 PIC100 Istallation 15
2.4.3 ISDN Line Connection 15
2.4.4 Host Connection Confirmation 16

3. DATA COMMUNICATION 17

3.1 ACCESS TO INTERNET 17
3.1.1 What You Need 17
3.1.2 Internet Software Configuration 17
3.1.3 Access To Internet On Windows 95 17
3.1.4 Access To Internet On Macintosh 22
3.1.4.1 Mac OS 7.6 22
3.2 RAS (REMOTE ACCESS SERVICE) 23
3.2.1 RAS Server Configuration 24
3.2.2 RAS Client Configuration 28

4. VOICE COMMUNICATION 31

4.1 ABOUT SOFTDIAL 31
4.2 SOFTDIAL INSTALLATION 31
4.3 SOFTDIAL CONFIGURATION 31
4.4 TYPICAL VOICE SERVICES 33
4.4.1 Place An Out Going Call 33
4.4.2 Receive An Incoming Call 33
4.4.3 Mute the Call 33
4.5 FLEXPHONE SERVICES 33
4.5.1 Call Waiting 33
4.5.2 Call Transfer 33
4.5.3 Three Party Conference 34
4.5.4 Call Deflection 34

1. Before You Start

1.1 About Your PIC100

PIC100 is an ISDN (Integrated Services Digital Network) PCMCIA card. It provides not only high-speed data communication but also voice features. For data communication, it is designed to support 64Kbps PPP, 128Kbps ML-PPP, V.110, and V.120. It also provides OCN (Open Computer Network) leased line features. For voice communication, a special dialer application program, called SoftDial, is designed for Windows 95. User can make use of SoftDial to enjoy fantastic voice features such as Flexphone services and BACP (Bandwidth Allocation Control Protocol). PIC100 provides a solution that user is able to send and receive G2/G3 fax, connect to remote analog modem, and enjoy answering machine features. The specification check is shown below.

Items	Specifications	Remarks
ISDN Interface	S/T Interface	
Host Interface	PCMCIA Type II Ver 2.1	
Switch Type	INS-643 (Japan) NET3 (Europe)	
Data Services	• 64Kbps PPP, • 128Kbps ML-PPP, • V.110 (up to 57.6Kbps), • V.120 (with optional V.42bis data compression), • OCN 64Kbps and 128Kbps leased line features.	V.110 57.6Kbps is compliant with NEC proprietary standard.
Voice Services	• Typical Voice services • Flexphone services : Call Waiting, Call Transfer, Three Party Conference, and Call Deflection.	Voice service is only available for Windows 95
Dynamic Bandwidth Control	BACP is provided for • Incoming and outgoin voice calls while in ML-PPP connection • Traffic monitoring to dynamic open and close the addition B channel.	
Advances Analog Features	• SoftFax • SoftVoice	User have to install RVS-COM communication program
Operating System	• Windows 95 • Windows NT 4.0 • Macintosh	Voice service is only available for Windows 95
Application Program Interface	AT Commands	

cause your PC Card and interface cable damaged.

1.5.2 Connecting Your PC Card and Interface Cable

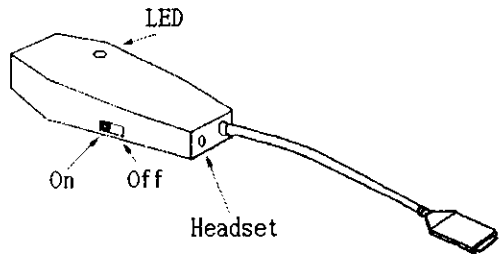
Insert your PIC100 into the PCMCIA slot on your computer. Attach the connector end of the interface cable to the free end of the PC Card. The Card is keyed so that the connector will only fit one way. If the connector does not attach to the card easily, turn it over and try again.

To disconnect your PC Card from the interface cable, squeeze the latches on both sides of the interface cable connector simultaneously. The latches will release the connector from the card allowing to gently pull it out.

Warning: Attempt to force it inserted may cause your PC Card and Computer damaged.

1.5.3 The ISDN Connection

Plug your ISDN line into the RJ45 jack. You may need to adjust the termination resistor if your PIC100 is not the only ISDN device connected to the DSU Interface. You can adjust termination resistor by adjusting the line terminator switch of PIC100 tail box.

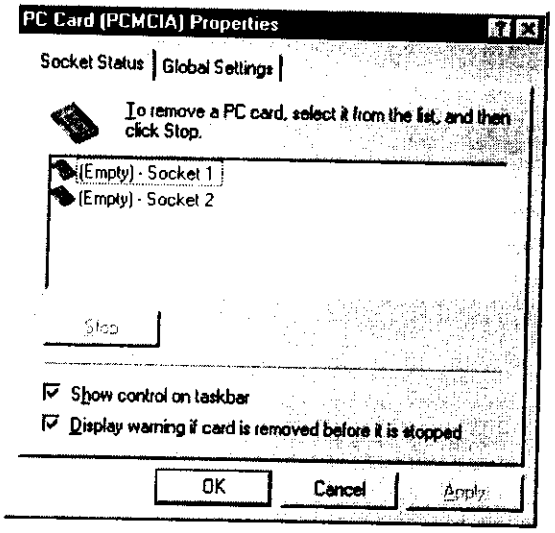


(figure : tailbox.bmp)

Switch Position	System Configuration
ON	1) PIC100 is the only one device 2) more than one ISDN device connected to the DSU, and the PIC100 is at the end of the physical ISDN line.
OFF	more than one ISDN devices connected to the DSU and the PIC100 is not at the end of the physical line.

shown in your computer.

Windows 95 comes with enhanced Card and Socket Service, so you do not have to install any additional software for managing your PCMICA cards. To make sure that Windows 95 32-bit Card and Socket Services are loaded, you check it by clicking on the PC Card (PCMCIA) icon in Control Panel. If Windows 95 has been loaded properly, you should have a PCMCIA wizard which provides you with the updated version of Card and Socket Services.



(figure : PC_Card.bmp)

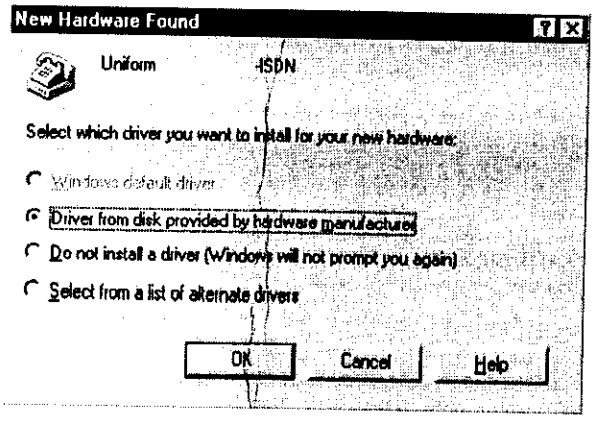
If you can not find PC Card icon in Control Panel, you have to load Card and Socket Services by Add New Hard icon in Control Panel. The detailed procedures, please refer to your computer user manual and Windows 95 on-line help.

2.2.2 PIC100 Installation

Note : Because of a variety of Windows 95 versions, the dialog boxes presented in this section may be straightly different from the ones shown in your computer.

1) Insert the PIC100 into PCMCIA slot. The **New Hardware Found** dialog box will briefly appear.

2) Another box will immediately follow with a list of options for installing the driver for your new hardware. Choose the default button, **Driver from disk provided by hardware manufacture**, and click on **OK**.

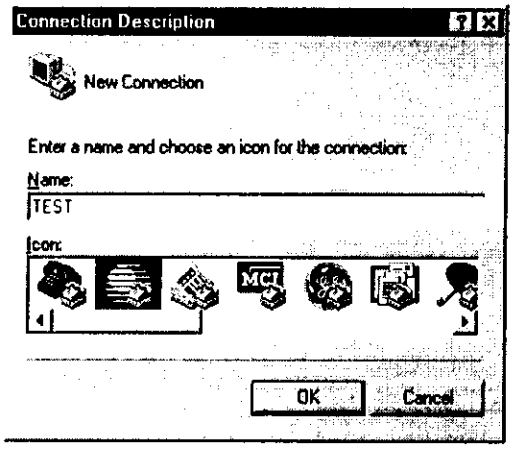


2.2.3 ISDN Line Connection

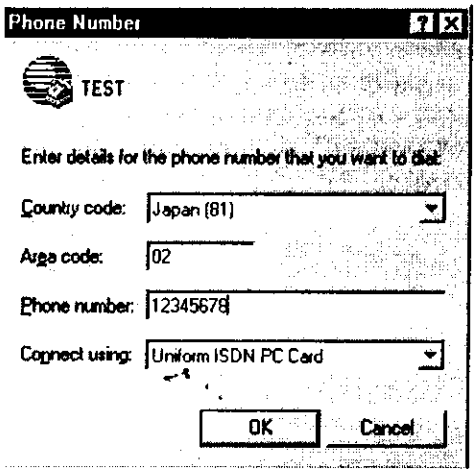
Connect ISDN line to the RJ45 socket of PIC100 tail box. For detailed, please refer to the previous section about ISDN line connection.

2.2.4 PC Connection Confirmation

Open HyperTerminal on Windows 95. Click on Hypertrm icon to make a new connection. Enter the connection name and select the preferred icon. Then click on OK.



Enter the country code, area code, and called telephone number, select **Uniform ISDN PC Card**. Then click on OK.

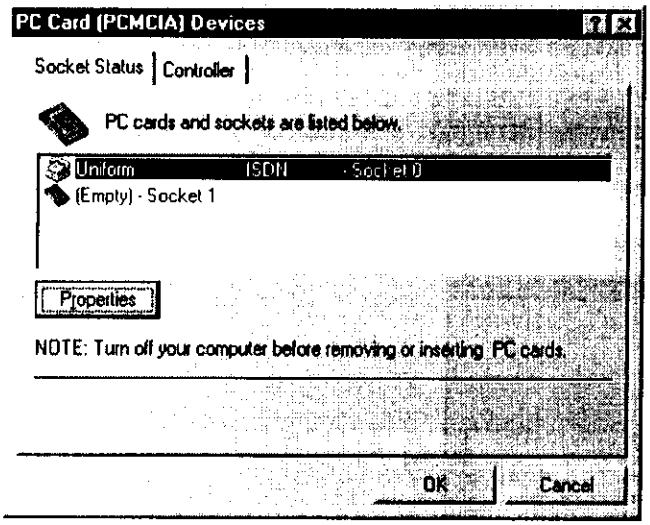


A dialog box labeled Connect appears, click on Cancel. Then, you can use this terminal to verify if the PC connection is working well. Type AT or at, OK will be shown immediately. It means your PC card is configured correctly.

Note : Because Windows NT 4.0 does not support plug and play feature, you have to turn off your computer before removing or inserting PC cards.

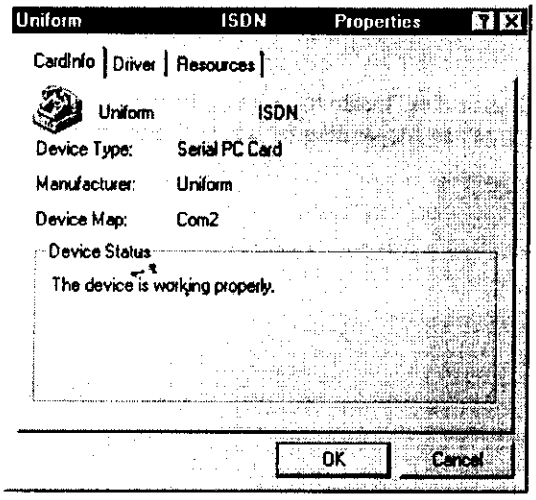
1) Turn off your computer. Insert your PIC100. Then turn on your computer.

2) Click on **PC Card (PCMCIA)** icon in Control Panel. You can see the following box.



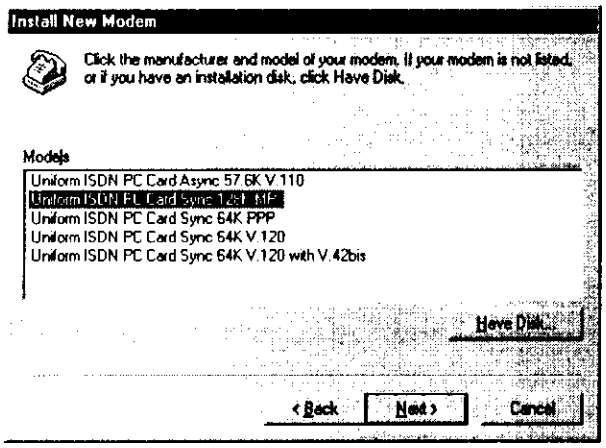
(fig NT_UIC_PC_Card.bmp)

Select **Uniform ISDN PC Card** and press **Properties.** You can read the Device Map and Device Status. The Device Map depends on the current system resource, it may different from that shown in your computer.



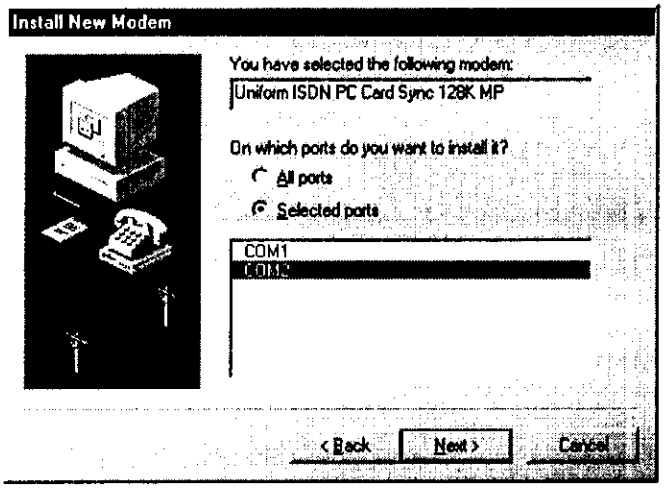
(fig NT_UIC_Property.bmp)

3) Click on **Modem** icon in Control Panel. A box labeled Install New Modem immediately appears. Select **Don't detect my modem; I will select it from a list.**



(Fig : NT_UIC_Model.bmp)

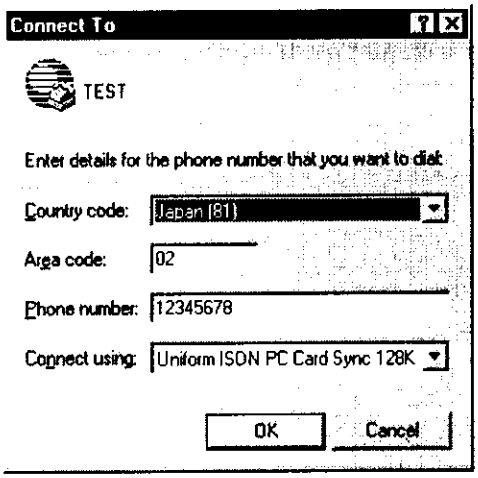
Select the ports as you observed in step (2).



(Fig : NT_Select_Port.bmp)

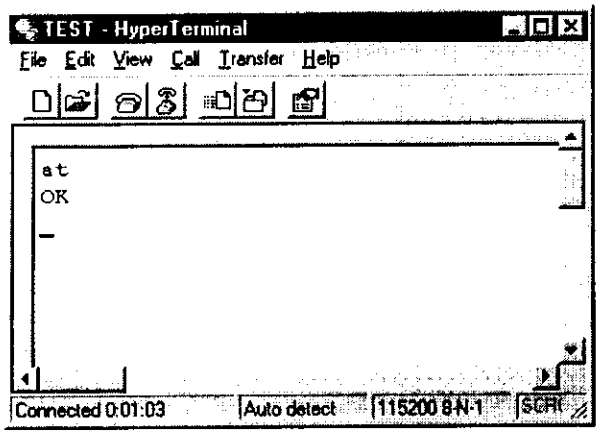
Click on Next Windows NT Registry will automatically be changed to reflect the addition of a new hardware. Then a new box is shown. Press Finish button, the installation is completed.

4) Click on **Modem** icon in Control Panel and press **Properties** button. Select the Maximum speed to 115200.



(Fig : NT_Test.bmp)

A dialog box labeled Connect appears, click on Cancel. Then, you can use this terminal to verify if the PC connection is working well. Type AT or at, OK will be shown immediately. It means your PC card is configured correctly.



2.4 Installation on Macintosh

2.4.1 Card and Socket Service Confirmation

Macintosh PowerBook with Card and Socket Service should comes with Card and Socket Service.

2.4.2 PIC100 Istallation

Insert the PIC100 into PC Card Slot. You can see an icon pops out up on your desktop as below.

2.4.3 ISDN Line Connection

Connect ISDN Line to the RJ45 socket of PIC100 tail box. Please refer to the previous chapter for detailed.

3. DATA COMMUNICATION

3.1 Access To Internet

3.1.1 What You Need

For Internet access, you have to

1) Subscribe the service from ISP (Internet Service Provider) and

2) get WWW browser (Netscape Navigator, Microsoft Internet Explorer and so on)

Note :Your ISP should provide ISDN dial-up connection.

3.1.2 Internet Software Configuration

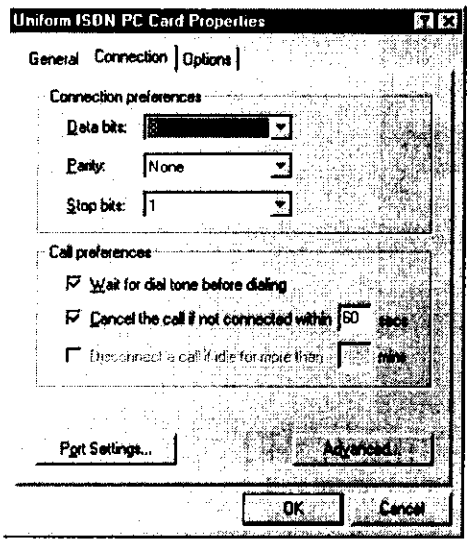
Your PIC100 is compatible with most Internet software packages on the market. The detailed configurations for Windows 95 and Macintosh are provided in the following sections. For other software packages, please refer to their user manual. In general, you can take the following these steps to setup Internet Software.

PPP connection	1) serial port setting 2) initial command setting 3) ISP telephone number 4) PPP user name and password 5) Authentication protocol (PAP or CHAP) 6) Sotfware compression options
TCP/IP protocol stack	1) Local IP address setting 2) DNS (Domain Name System) IP address 3) Domain Name
WWW Browser	4) Mail server IP address 5) News server IP address

3.1.3 Access To Internet On Windows 95

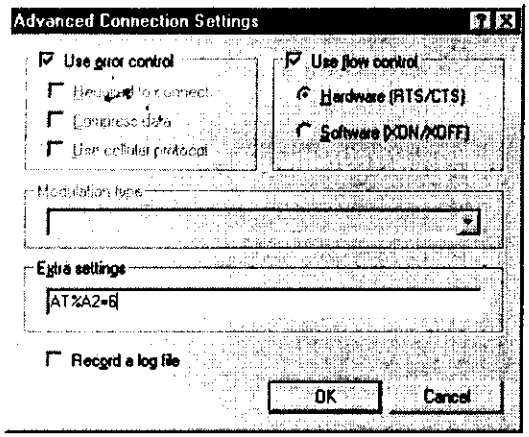
1) First you have to make sure TCP/IP network protocol is properly loaded in your computer by clicking on **Network** icon in Control Panel. If it is already loaded, you can go directly to step (4). If it is not loaded, you can follow step (2) and (3) to install TCP/IP protocol.

2) Click on **Add** in the **Network** dialog box. Select **Protocol** and press **Add**.



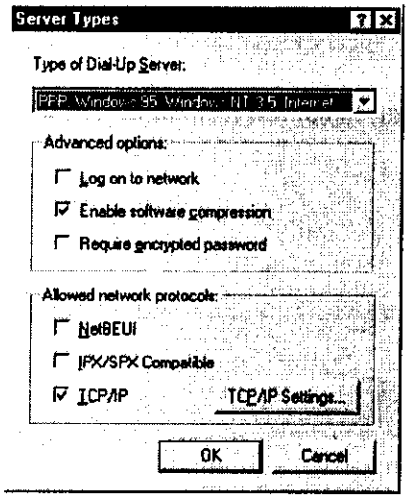
4) Type the initial command in the field labeled **Extra Settings** according to the following table. Here we take 128Kbps ML-PPP as an example. Type **AT%A2=6** in the **Extra Settings** field.

Call Type	Initial Command
64 Kbps PPP	AT%A2=5
128 Kbps ML-PPP	AT%A2=6
Asynchronous V.110	AT%A2=1
OCN 128K Lease Line	AT%A2=10%A6=6
OCN 64K on B1	AT%A2=10%A6=3
OCN 64K on B2	AT%A2=10%A6=5
V.120	AT%A2=2
V.120 with V.42bis	AT%A2=2&U1

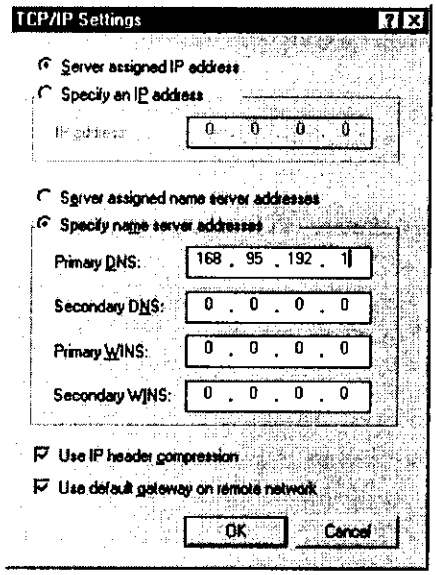


Click on OK, return to the previous dialog box. And Click OK, return to **Make New Connection** dialog box.

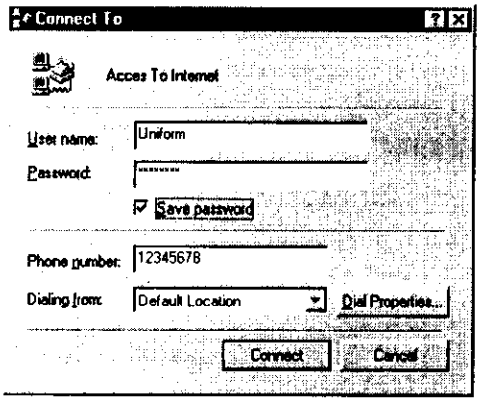
5) Click on **Next** to go to the following dialog box. Enter Telephone number of ISP, Area code, and Country code.



7) Click on **TCP/IP Settings** button. Specify the **name server address** which is provided by your ISP.

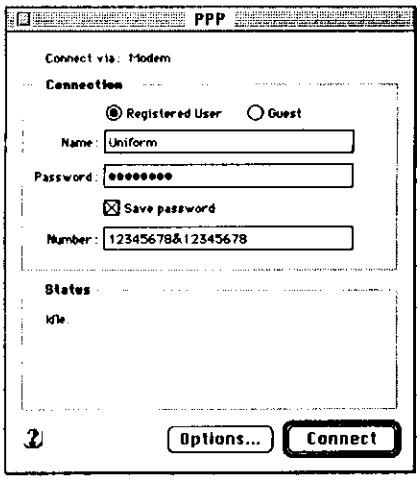


8) Double click on **Access To Internet** connection, enter your **User name** and **Password**. And click on **Connect** button. PIC100 is connecting to your ISP.

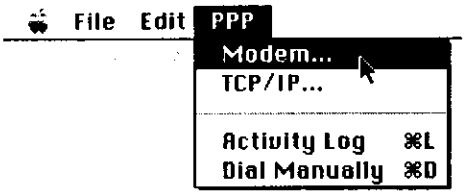


9) Once connection is established, you can open Internet software (Microsoft Internet Explore or Netscape Navigator and so on) to access to Internet.

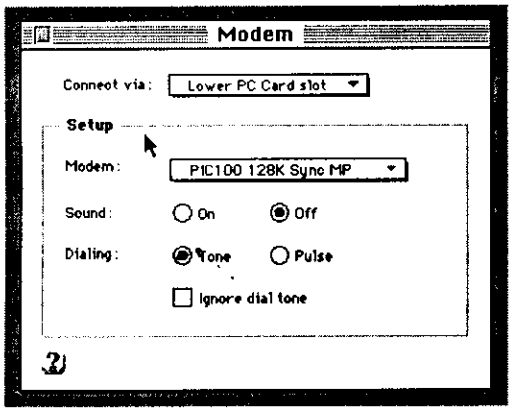
Open **PPP** in **Control Panel**. Enter the user name and password. Type the phone number of your ISP.



Click on **PPP** in the top tool bar, select **Modem**.



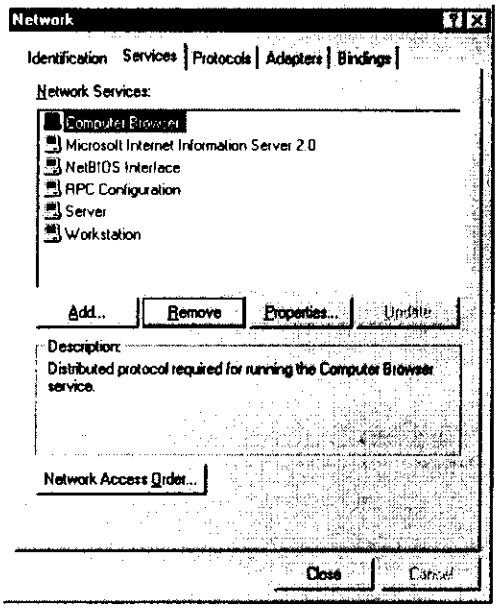
Select PIC100 from the modem list.



Click on **Connect** button in PPP dialog box. Now PIC100 is connecting to your ISP. After the connected is established, open your Internet software to navigate into Internet.

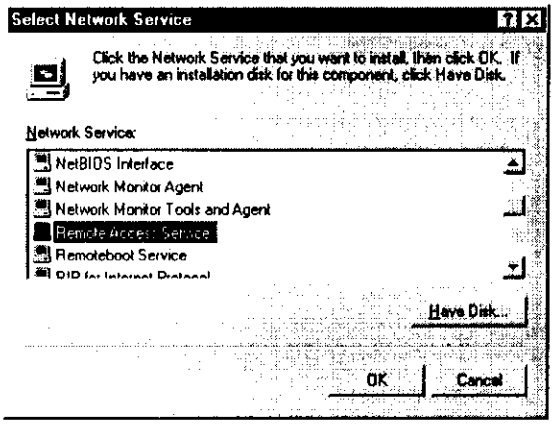
3.2 RAS (Remote Access Service)

The Remote Access Service (RAS) lets workstations at remote sites access network servers transparently, as though they were physically connected to the network. Remote access connection is established over RAS client and RAS server. PIC100 can be used in RAS client side as well as in RAS server side as shown below. The detailed configuration for RAS



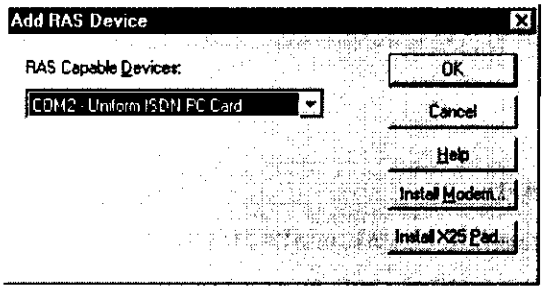
(Fig : NT_Add_Net_Service.bmp)

Select **Remote Access Server** from the list and click on **OK.**



(Fig : NT_Select_Net_Service.bmp)

In the process of RAS setup, a dialog box labeled **Add RAS Device** appears to allow user to select RAS devices. Select **Uniform ISDN PC Card** from the list and press **OK.**



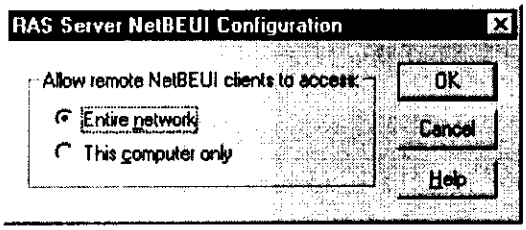
(Fig : NT_RAS_Device.bmp)

5) You can see a box labeled **Remote Access Setup**. Click on **Configure** to setup the port usage.

connection can not be established.

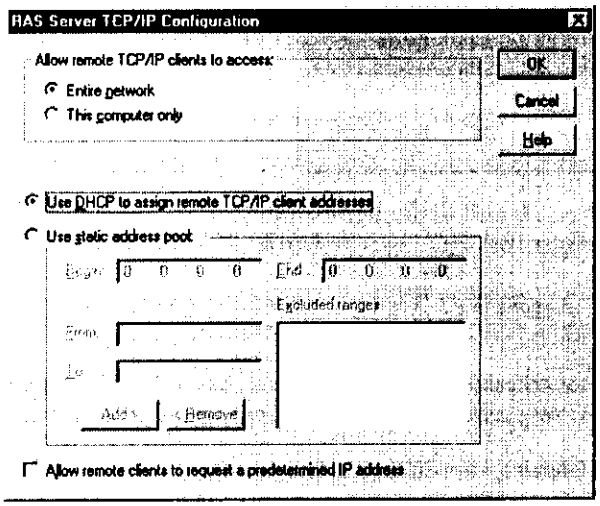
For detialed settings of each network protocol (NetBEUI, TCP/IP, IPX), you can click on the **Configure** button beside it.

Click on the **Configure** button beside NetBEUI, the following box appears. Select **Entire network** if your computer is connected to LAN, otherwise select **This computer only**.



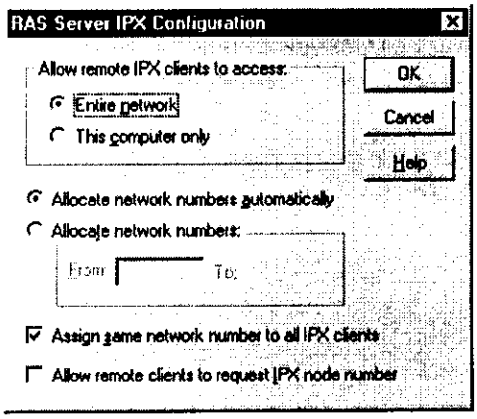
(Fig : NT_NetBEUI_Config.bmp)

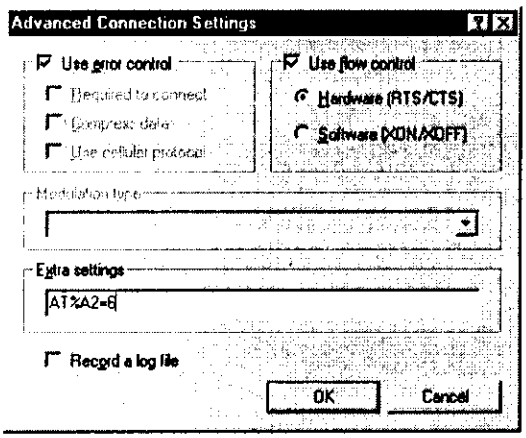
Click on the **Configure** button beside TCP/IP, the following box appears. Select **Entire network** if your computer is connected to LAN, otherwise select **This computer only**. If you select **Use DHCP to assign remote TCP/IP client address**, you have to make sure that there exist a DCHP server running on LAN. If there is no DCHP server installed on network, you can either select **Use static address pool**, or install a DHCP server on your computer. You can refer Windows NT4.0 on-line help about how to install a DCHP server on Windows NT4.0.



(Fig : NT_TCPIP_Config.bmp)

Click on the **Configure** button beside IPX, the following box will appear. Select **Entire Network** if your computer is connected to LAN, otherwise select **This computer only**.





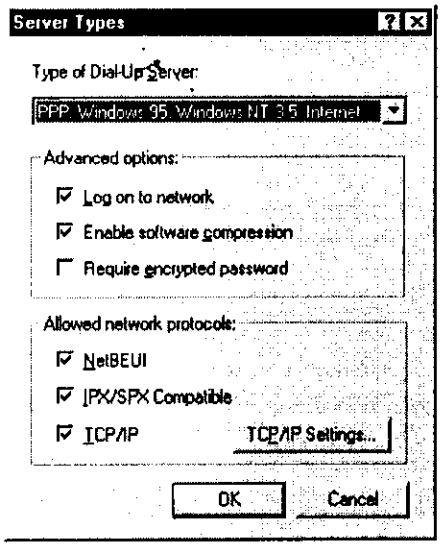
Enter the initial command in the field of Extra Settings according to the following table.

Call Type	Initial Command
64 Kbps PPP	AT%A2=5
128 Kbps ML-PPP	AT%A2=6
Asynchronous V.110	AT%A2=1
V.120	AT%A2=2
V.120 with V.42bis	AT%A2=2&U1

The call type of RAS client should be the same as that of RAS server. Otherwise the connection can not be established.

4) Press **OK** to go back to **Make New Connection** box. Click on **Next**. Type the Area code, Telephone number, and Country code. Then press **Next** to finish connection setup.

5) Check the connection properties and go to **Server Type**. Set the advanced options and allowed network protocols as below.



(Fig : Client_Server_Type.bmp)

4. Voice Communication

4.1 About Softdial

> **Note** : Currently, Softdial is only available for Windows 95.

Softdial is a dialer for PIC100. It is designed to dial a phone number, answer an incoming call, terminate a call, and provide the user interface for Flexphone Services. Softdial does not make use of communication port to control PIC100. Instead, it utilizes a predefined common memory which allows the dialer and PC Card to communicate each other. Therefore, a voice call can be made over one B channel while a data call is performed over the other B channel. Softdail can be opened to wait for the incoming calls. While Softdial is opened, the user can still enter in any communication program to do a data call at the same time. When an incoming voice call arrives, if it is opened, it will pop up to the screen to inform the user.

4.2 Softdial Installation

Run SETUP.EXE in the installation disk and follow the instructions to finish installation procedures.

> **Note**: When you start Softdial for the first time, Softdial may ask you to reset your PC card. It is because the memory allocated for PIC100 is occupied by some other devices. Windows 95 will assign another memory area when you reset your PC Card.

4.3 Softdial Configuration

Start Softdial, and click on **Config** button.

(Fig : SD_CDcfg.bmp)

You can enter the call deflection number in **Directory Number** field. The **Type** and **Condition** fields are described in the last section of this chaper.

> **Note** : It will cause unexpected malfunctions if you enable the service not subscribed.

4.4 Typical Voice Services

4.4.1 Place An Out Going Call

- Enter the called party number by clicking Softdial keypad or using keyboard. And then press **Dail**.

4.4.2 Receive An Incoming Call

- When an incoming call arrives, your computer begins to ring, and Softdial window will pop up to the top screen. Click on **Answer** button to answer or **Hang-up** to reject the call.

> **Note** : If the Softdial is not opened, it will not pop up to the top screen when an incoming call arrives. But you can still hear the ringing sound generated by the computer.

4.4.3 Mute the Call

A click on **Mute** button will change the mute state of the headset. To enable the mute function, you can click on the button (**Mute ON**). At this time, PIC100 stops sending your voice to the remote side. To disable the mute function, click on the same button (**Mute OFF**).

4.5 Flexphone Services

4.5.1 Call Waiting

If a call is already ongoing and the second incoming call arrives, PIC100 makes PC start to ring. You can place the current call on hold and receive the second incoming call by clicking on **Answer** or **Flash**. Once the connection is established, you can switch back and forth between the two call by clicking on **Flash**.

4.5.2 Call Transfer

If an incoming call is already ongoing, you can place the call on hold by clicking on **Transfer** button. Then enter the second phone number and press **Dial**. Once the connection is established, you can disconnect yourself and connect the two parties by clicking on **Flash** button.

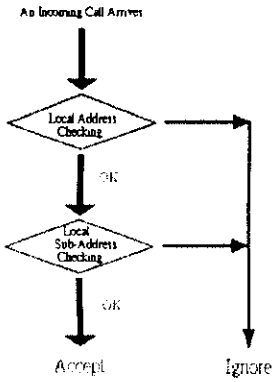
> **Note** : The first call should be incoming call. In Japan, you are only allowed to transfer an incoming call to the third party.

5. Detailed Configuration

5.1 Common Configuration

When your PIC100 is the only one device connected to the DSU, you can use it without setting Local Address and Local Sub-Address. When the more than one devices are connected to the DSU, you had better to set Local Address and Local Sub-Address in the PIC100. Local Address and Sub-Address are used for identifying which device (or TA) to answer the incoming call. Local Address and Local Sub-Address are also sent to the remote side when you make an outgoing call.

When an incoming call arrives, the the following address checking procedure is performed.



(Fig: AddCheck.bmp)

5.1.1 Local Address

User can set Local Address by !N1 commands. When an incoming call arrives, the called party number contained in the incoming SETUP message is compared with the stored Local Address according to the following table.

Called Party Number / Notification / Local Address	None	Yes (matched)	Yes (Not Matched)
None	O	O	O
Yes	O	O	X

5.1.2 Local Sub-Address

User can set Local Sub-Address by !N1 and !N2 commands. When an incoming call arrives, the Called Party Sub-Address contained in the incoming SETUP message is compared with Local Sub-Address according to the following table.

E	Echo
parameter	[n] : 0 command echo inhibited **1 command echo enabled**
example	ATE1

H	Hang up
function	Hang up the call
format	ATH
parameter	None
example	ATH
remarks	Type Escape Command (+++), OK is returned. Then type ATH

I	Identification
function	Interrogate product status
format	ATI[n]
parameter	[n] : 1 Calculate checksum and report answer 2 Compare checksum to stored value and report answer 3 Report Firmware version number 6 Report the ISDN switch type supported
example	ATI3 Report the firmware version number

N	Negotiate Connection Speed
function	Negotiate the user rate in V.110 mode
format	ATN[n]
parameter	[n] : 0 Disable the V.110 user rate negotiation **1 For the incoming call, the PIC100 always accept the V.110 user rate of the calling party.** 2 For the incoming call, the PIC100 always accept the V.110 user rate of the calling party. For the outgoing call, it automatically retry to connect to the peer side by downgrading the user rate.
example	ATN1 Typically you can use the default setting ATN2 If the peer side does not support end-to-end flow control

O	Return to On Line state
function	After typing Escape Command (+++), you can use this command to change the state from On Line Command Mode to On Line

W	Connection Result Code
example	If V.110 connection is established, the following connection code is shown. ATW0 CONNECT 115200 ATW1 CARRIER 38400 PROTOCOL V110 CONNECT 115200 ATW2 CONNECT 38400/V110

Z	Recall User Defined Configuration
function	The user defined configuration in non-volatile memory is recalled to become the active configuration
format	ATZ[n]
parameter	[n] : 0 Recall the user profile 0 1 Recall the user profile 1
example	ATZ Recall user profile 0

&C	Data Carrier Detect (DCD) Options
function	Configure DCD options
format	AT&C[n]
parameter	[n] : 0 DCD always ON **1 ON is on line state**
example	AT&C0

&D	Data Terminal Ready (DTR) Options
function	Configure DTR options
format	AT&D[n]
parameter	[n] : 0 Ignore DTR 1 Go to escape mode if DTR drops **2 According to 108/2**
example	AT&D2

&F	Recall Factory Setting
function	The factory configuration contained in ROM is loaded to become active configuration
format	AT&F[n]
parameter	[n] : 0 Recall factory profile 0 (PPP mode) 1 Recall factory profile 1 (ML-PPP mode)

&W	Write a profile to memory
parameter	[n] : 0 Store as user profile 0 1 Store as user profile 1
example	AT&W0

&Y	Set Power up profile
function	The user profile stored under &W0 or &W1 can be assigned as the default profile which is automatically recalled on power up.
format	AT&Y[n]
parameter	[n] : 0 **Recall from user profile 0** 1 Recall from user profile 1
example	AT&Y0

&Z	Store Phone Number Command
function	Store the desired phone number in location 0 through 9. The format of the stored number is identical to that accepted by the D command
format	AT&Z[n] = [x]{+[y]} store phone number in position n AT&Z[n]? display the phone number stored in position n
parameter	[n] : 0~5 [x] : Called party number [y] : Called party subaddress
example	AT&Z0=123456789 AT&Z0=123456789+123 AT&Z0?

%B	DTE Autobauding
function	Enable or disable DTE autobauding
format	AT%B[n]
parameter	[n] : 0 Enable DTE autobaud 1 Disable DTE autobaud and keep current speed 11~39 Disable DTE autobaud and fix the speed according to parameter n. n=11 300 bps n=12 1200 bps n=13 2400 bps n=14 4800 bps n=15 7200 bps n=16 9600 bps n=17 12000 bps n=18 14400 bps n=19 16800 bps

*D	**Dial a Voice Call**
parameter	[x], [y] and [n] with the same format as those in D command
example	AT*D123456789 AT*D123456789+123 AT*DS0

*E1	**Bearer Capability in incoming Voice Call**
function	This command is used to filter the incoming voice call by Bearer Capability.
format	AT*E1=[n]
parameter	[n] : 0 Accept a call only it has the SPEECH capability 1 Accept a call only it has the 3.1K AUDIO capability **2 Accept a call if it has SPEECH or 3.1K AUDIO.**
Example	AT*E1=2

*G	**Hang Up a Voice Call**
function	Hang up a voice call
format	AT*G
parameter	None
example	AT*G

*K	**Conference Call**
function	This command is used to trigger a conference call. It is with the same function as Hang-Up button in Softdial.
format	AT*K
parameter	None
example	AT*K

*L	**Voice Codec Law**
function	Select voice Codec law
format	AT*L[n]
parameter	[n]: 0 A-law coding **1 μ-law coding**
example	AT*L1
remark	When the ISDN switch type is set to Japan version (INS-Net 64), it is not allowed to change Voice Codec Law into A-law.

*Z	Set/Display Security Caller ID Number
	considered as a match ■ if the stored dial number is shorter than the incoming call then only the right most characters are compared with the stored number, the left most characters are ignore; for example 3500 will match an 837-3500 incoming number. ■ a wild card character ?, will match with any character.
format	AT*Z[n]=[x] store [x] into security caller ID number n in the eeprom, where x = {0,1,..,9,?} AT*Z[n]? Display the stored security caller ID number n AT*Z! Display all security caller ID numbers. AT*Z=! Erase all security caller ID numbers
example	AT*Z1=12345678? AT*Z! AT*Z=!

!A0	Supplementary Service (Flexphone Service)
function	Enable or disable Supplementary Services
format	AT!A0=[n]
parameter	[n] : Call Waiting Call Transfer Three Party Conferece 0 disable disable disable 1 disable disable enable 2 disable enable disable 3 disable enable enable 4 enable disable disable 5 enable disable enable 6 enable enable disable 7 enable enable enable
example	AT!A0=7

!C0	ISDN Switch Type
function	Select ISDN Switch Type
format	AT!C0=[n]
parameter	[n] : 4 EuroISDN 6 Japan INS-Net 64
example	AT!C0=6
remark	After type this command, you have the reset the TA to active the

!T	**No Anwser Timer**
function	Define the No Answer Timer when !Z=0 (No Answer condition is selected).
format	AT!T=[n]
parameter	[n] : Seconds (0~20)
example	AT!T=15

!D	**Call Deflection Number**
function	Set the Call Deflection Number.
format	AT!D=[x]
parameter	[x] : Call Deflection Number with the same format as D command
example	AT!D=12345678

%A2	**Data Call Type**
function	Determine the Data Call Type
format	AT%A2=[n]
parameter	[n] : 1 V.110 2 V.120 5 PPP 6 ML-PPP (Multi-Link PPP) 8 Advanced Analog Features 10 OCN leased line
example	AT%A2=1

%A6	**OCN Leased Line Configuration**
function	OCN Leased Line setting
format	AT%A6=[n]
parameter	[n] : **6 128Kbps (B1 +B2)** 3 64Kbps on B1 channel 5 64Kbps on B2 channel
example	AT%A6=6

			milliseconds)
S25	0~255 default=5	Storable	**DTR Detection** Determine the minimum time that a change in DTR must persist in order to be recognized by PIC100. (unit = 10 milliseconds)

5.4 Factory Settings

The factory settings, **&F0**, **&F1**, and **&F2** are listed in this section.

5.4.1 Factory Setting 0 (&F0) : PPP mode

E1	Command echo enabled	***L1**	Select μ-law
N1	Accept incoming user rate	***M0**	Disable Mute function
Q0	Display result code	**!A0=0**	Disable Supplementary Services
V1	Verbose form response	**!C0=6**	Japan ISDN switch type
W0	Short form result code	**%A2=5**	Set data type to PPP mode
&C1	DCD turns ON in on-line state	**%A6=6**	Set 128Kbps if OCN is enabled
&D2	DTR according to 108/2	**!X=0**	Disable Call Deflection service
&K3	CTS/RTS flow control	**!Z=0**	Set No Answer condition
&U0	Disable V.42bis	**!T=15**	Set No Answer timer to 15 sec
&Y0	Recall from user profile 0	**S0=0**	Disable auto-answer
%B0	Enable DTE autobauding	**S7=30**	Set Wait Timer to 30 sec
***B1=0**	Originate as a SPEECH call	**S12=50**	Set Escape Prompt timer to 1 sec
***E1=2**	Accept SPEECH and AUDIO	**S25=5**	Set DTR detection timer to 50ms
%A7=0	Disable Traffic Monitoring		

5.4.2 Factory Setting 1 (&F1) : ML-PPP mode

E1	Command echo enabled	***L1**	Select μ-law
N1	Accept incoming user rate	***M0**	Disable Mute function
Q0	Display result code	**!A0=0**	Disable Supplementary Services
V1	Verbose form response	**!C0=6**	Japan ISDN switch type
W0	Short form result code	**%A2=6**	Set data type to ML-PPP mode
&C1	DCD turns ON in on-line state	**%A6=6**	Set 128Kbps if OCN is enabled
&D2	DTR according to 108/2	**!X=0**	Disable Call Deflection service
&K3	CTS/RTS flow control	**!Z=0**	Set No Answer condition
&U0	Disable V.42bis	**!T=15**	Set No Answer timer to 15 sec

6. Troubleshooting

6.1 Fisrt To Check

- **Make sure the interface cable is correctly connected to the PIC100**
- **Make sure the ISDN line is correctly connected to DSU**
- **Make sure the line terminator switch in the tail box of PIC100 is located at right position**
- **Make sure your Internet Service Provider (ISP) supports ISDN dial-up connection**
- **Make sure the supplementary services are already subscribed before using them**

6.2 FAQ (Frequently Asked Questions)

- **My computer can not detect PIC100?**
  - ☛ Make sure Card and Socket services are loaed in your computer.
  - ☛ Make sure your computer support PCMICA type II slot.
  - ☛ Make sure the PCMCIA slot works well.

- **Softdial can not be opened?**
  - ☛ When you start Softdial for the first time, Softdial may ask you reinsert the PC card or restart your computer. It is because the memory allocated for the PC card is occupied by some other devices. You have to reinsert the card or restart the computer and then start Softdial again.
  - ☛ Softdial is only designed for Windows 95. Please do not install Softdial in any other platforms.
- **The PIC100 can not connect to ISP at 128K?**
  - ☛ Make sure your ISP provides 128K ML-PPP dial-up connection.
  - ☛ Make sure your PIC100 configured in ML-PPP mode (i.e. AT%A2=6).
  - ☛ There is probability that the PIC100 can not connect at 128Kbps occasionally. It is because there is no B channel available in the router of ISP.

- **Flexphone services can not work?**
  - ☛ Make sure you have subscribed the flexphone serives.
  - ☛ Make sure you have enabled the flexphone serives in Softdial.

- **Traffic Monitoring function does not work in ML-PPP mode?**
  - ☛ Make sure your ISP supports BACP (Bandwidth Allocation Control Protocol). If your ISP does not support BACP feature, the traffic monitoring function can not work even though you enable this feature in PIC100.
  - ☛ There is probability that PIC100 can not reach to 128Kbps occasionally while the traffic is heavy. It is because that there is no B channel available in the ISDN router in the ISP.

- **The PIC100 can not receive any incoming call?**
  - ☛ Make sure your phone number is correctly configured in the PIC100.
  - ☛ Make sure the call deflection service is not enabled. If you enable the call deflection server in unconditional mode, any incoming call will be deflected.

- **The OCN 128K Leased Line feature can not work?**
  - ☛ You have to subscribe this service before using it.
  - ☛ Make sure the call type (AT%A2=10) is correctly configured.

7. Firmware Upgrade

7.1 How To Upgrade PIC100

The newest version of firmware is available on the web side or BBS. You can follow the procedures to upgrade firmware.

- Open the Terminal Communication Program (e.g. Hyper Terminal in Windows 95 or NT4.0)
- Set data speed to 115200 bps, data bit to 8, parity bit to None, and stop bit to 1. Enable CTS/RTS flow control.
- Type **AT%FAPPS**, and then the confirmation message is shown.
- Type **Y** to continue upgrade procedure.
- After few seconds, the prompt character > is shown.
- Start to send ROM file using ASCII protocol.
- After finishing the ROM file downloading, you have to exit the communication program and open it again.

&Y0	Recall from user profile 0	S0=0	Disable auto-answer
%B0	Enable DTE autobauding	S7=30	Set Wait Timer to 30 sec
*B1=0	Originate as a SPEECH call	S12=50	Set Escape Prompt timer to 1 sec
*E1=2	Accept SPEECH and AUDIO	S25=5	Set DTR detection timer to 50ms
%A7=0	Disable Traffic Monitoring		

5.4.3 Factory Setting 2 (&F2) : V.110 mode

E1	Command echo enabled	*L1	Select μ-law
N2	Auto downgrade retrial	*M0	Disable Mute function
Q0	Display result code	!A0=0	Disable Supplementary Services
V1	Verbose form response	!C0=6	Japan ISDN switch type
W0	Short form result code	%A2=1	Set data type to V.110 mode
&C1	DCD turns ON in on-line state	%A6=6	Set 128Kbps if OCN is enabled
&D2	DTR according to 108/2	!X=0	Disable Call Deflection service
&K3	CTS/RTS flow control	!Z=0	Set No Answer condition
&U0	Disable V.42bis	!T=15	Set No Answer timer to 15 sec
&Y0	Recall from user profile 0	S0=0	Disable auto-answer
%B0	Enable DTE autobauding	S7=30	Set Wait Timer to 30 sec
*B1=0	Originate as a SPEECH call	S12=50	Set Escape Prompt timer to 1 sec
*E1=2	Accept SPEECH and AUDIO	S25=5	Set DTR detection timer to 50ms
%A7=0	Disable Traffic Monitoring		

%A7	Traffic Monitoring Function
function	Enable or disable traffic monitoring function while connecting in ML-PPP mode. When this function is enabled, the PIC100 will automatically drop one B channel when traffic is not heavy and automatically add on B channel when traffic becomes heavy.
format	AT%A7=[n]
parameter	[n] : **0 Disable** 1 Enable
example	AT%A7=1

5.3 S Registers

Register	Value	Type	Description
S0	0~255 Default = 0	Storable	**Number Of Ring to Answer** Establish the number of RING result codes after witch PIC100 Answers the call. The value of 0 diables auto-answer mode.
S1	0~255	Non-storable	**Ring Count** S1 is incremented each time the PIC100 sends a RING result code to DTE and is cleared when the call is answered or cleared.
S2	0~127 default=43	Non-storable	**Escape Sequence Character** Used to define the escape character; escape process is disabled if the value is greater than 127
S3	0~127 default=13	Non-storable	**Carriage Return Character** Used to define carriage return (CR) character
S4	0~127 default=10	Non-storable	**Line Feed Character** Used to define line feed (LF) character
S5	0~127 default=8	Non-starable	**Backspace Character** Used to define backspace (BS) character
S7	1~50s default=30	Storable	**Wait Time For Connection** Specifies the maximum waiting time between end of dialing process and completio of connection. Value of 0 means PIC100 waits indefinitely. (unit = 1 second)
S12	0~255 default=50	Storable	**Escape Sequence Prompt Time** Determine prompt delay after PIC100 receive an escape sequence. Value of O means the guard time is not checked. (unit = 20

!C0	**ISDN Switch Type**
	switch type setting.

!N1	**Local Directory Number Assignment**
function	Assign the Local DN
format	AT!N1=["x"]{+["y"]}
parameter	[x] and [y] are with the same formats as in those under D command
example	AT!N1="123456789+123"

!X	**Call Deflection Type**
function	Enable or disable the Call Deflection service. And select the Call Deflection type.
format	AT!X=[n]
parameter	[n] : **0 Disable** 1 Call Deflection Type 1 2 Call Deflection Type 2 3 Call Deflection Type 3 4 Call Deflection Type 4
example	AT!X=1
remark	The meaning of Call Deflection type is described in Chapter 4

!Z	**Call Deflection Condition**
function	Define the Call Deflection Condition
format	AT!Z=[n]
parameter	[n] : 0 Deflect the call if no answer within [!T] seconds 1 Deflect the call unconditionally 2 Deflect the call if user is busy
example	AT!Z=1
remark	The meaning of Call Deflection condition is described in Chapter 4

*M	**Voice Mute Funciton**
function	Voice Mute feature
format	AT*M[n]
parameter	[n]: **0 Set Mute OFF** 1 Set Mute ON
example	AT*M1

*R	**Retrieve a Call**
function	This command is with the same function as Flash button in SoftDail
format	AT*R
parameter	None
example	AT*R

*T	**Trasfer a Call**
function	This command is with the same function as Transfer button in SoftDial
format	AT*T
parameter	None
example	AT*T

*X	**Set/Display Billing Accumulator and Dates**
function	There are two billing accumulators in the eeprom, indexed as 0 and 1. Index 0 manages billing for data call, index 1 manages billing for voice call.
format	AT*X[n] = [mm]-[dd]-[yy] Store month-day-year into billing accumulator n and reset billing amount to 0. AT*Xn? Display the data and billing amount of the billing accumulator n.
example	AT*X0=03-12-1997 AT*X0?

*Z	**Set/Display Security Caller ID Number**
function	Set and display security caller ID number. There are twenty 30-character long, security caller ID number in the eeprom indexed from 0 to 9. When the incoming caller ID number is compared to the stored numbers, a match is defined as: ■ if stored number is empty, any incoming number is

%B	DTE Autobauding
	n=20 19200 bps n=21 21600 bps n=22 24000 bps n=23 26400 bps n=24 28800 bps n=25 31600 bps n=26 32000 bps n=27 33600 bps n=28 38400 bps n=31 57600 bps n=36 115200 bps n=38 230400 bps n=39 460800 bps
example	AT%B39

%FAPPS	Flash Firmware Upgrade Command
function	Upgrade the firmware in Flash.
format	AT%FAPPS
parameter	None
example	AT%FAPPS
remark	Before issuing the command set your terminal package to 115200 bps, N, 8, 1. And wait until PIC100 give you more instructions.

*A	Answer a Voice Call
function	Answer an incoming voice call
format	AT*A
parameter	None
example	AT*A

*B1	Bearer Capability in Voice Outgoing Call
function	Set Bearer Capability in voice outgoing call
format	AT*B1=[n]
parameter	[n] : 0 **Originate as a SPEECH Call** 1 Originate as a 3.1K AUDIO Call
example	AT*B1=0

*D	Dial a Voice Call
function	Dial a Voice Call
format	AT*D[x]{+[y]} or AT*DS[n]

&F	**Recall Factory Setting**
	2 Recall factory profile 2 (V.110 mode)
example	AT&F1
remark	The detailed information of factory profile 0, 1, 2 is shown in the section of Factory Settings.

&K	**Flow Control**
function	Enable or disable flow control
format	AT&K[n]
parameter	[n] : 0 Disable flow control **3 Enable hardware flow control (CTS/RTS)** 4 Enable software flow control (XON/XOFF)
example	AT&K3

&U	**Data Compression in V.120 mode**
function	Enable or disable V.42bis data compression
format	AT&U[n]
parameter	[n] : 0 **Disable V.42bis data compression** 1 Enable V.42bis data compression
example	AT&U1
remark	V.42bis data compression running over V.120 will be adopted as an ITU-T standard.

&V	**Display Configuration**
function	Display Configuration
format	AT&V[n]
parameter	[n] : 0 Display the active profile, stored profile 0, and stored profile 1. 3 Display stored phone numbers 4 Display data port setting 5 Display voice port setting
example	AT&V0

&W	**Write a profile to memory**
function	The active profile is stored in the non-volatile memory as user profile 0 or 1.
format	AT&W[n]

O	**Return to On Line state**
	Mode.
format	ATO
parameter	None
example	ATO

Q	**Display Result Code**
function	To enable or disable result code
format	ATQ[n]
parameter	[n] **0 Display result code** 1 Do not display result code
example	ATQ1

S	**S Register Command**
function	Read or Write S Registers
format	ATS[n]=[x] Write Sn register ATS[n]? Read Sn Register in decimal form ATS[n]! Read Sn Register in hex form
parameter	For detailed information, please refer to S Register section
example	ATS0=1 ATS0?

V	**Response Code Format**
function	Set response code format
format	ATV[n]
parameter	[n] : 0 Numeric form response **1 Verbose form response**
example	ATV1

W	**Connection Result Code**
function	Set the format of connection result code
format	ATW[n]
parameter	[n] : **0 Short format** 1 3 line format (Hayes format) 2 1 line format (Microcom format)

Called Party Sub-Address / Notification / Local Sub-Address	None	Yes (matched)	Yes (Not Matched)
None	O	X	X
Yes	O	O	X

5.2 AT Commands

5.2.1 AT Command Description

A	**Answer**
function	Manual answer
format	ATA
parameter	None
example	ATA

D	**Dial**
function	Dial Number
format	ATD[x]{+[y]} or ATDS[n]
parameter	<x> : Called Party Number, any numeric digit 0~9,maximum length is 32 <y> : Called Party Sub-address, any numeric digit 0~9, maximum length is 10 [n] : Speed Dial the number stored under &Z, n = 0~4.
example	ATD123456789 ATD123456789+123 ATDS1

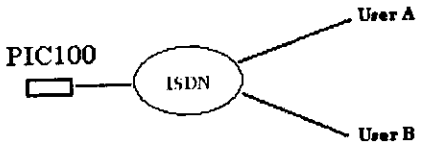
E	**Echo**
function	Echo command
format	ATE[n]

4.5.3 Three Party Conference

If a call is already ongoing, you can place the current call on hold by clicking on **Conference** button. Then enter the second phone number and press **Dial**. Once the connection is established, you can start conversation among the three parties by clicking on **Flash** button.

4.5.4 Call Deflection

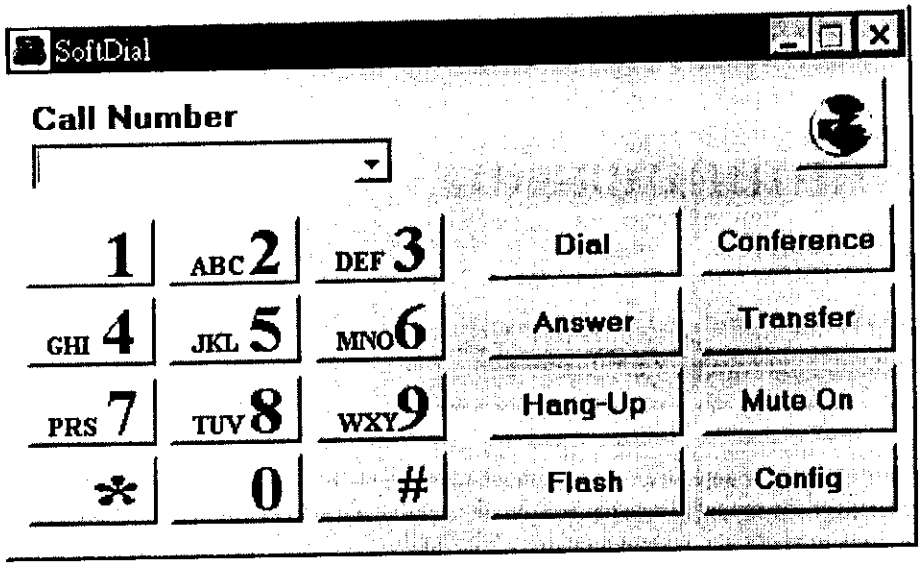
The call deflection service allows you to deflect the incoming call to the third party. Before enabling this service, you have to configure the call deflection type and condition which are described as below. Here is an example. When PIC100 receives an incoming call from User A, it first checks the call deflection condition.



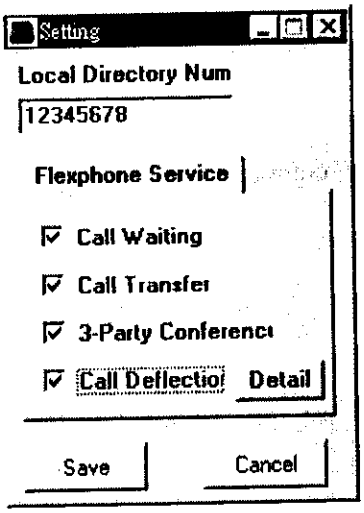
- **No Answer** : If you does not answer the call before the deflection timer expiration, PIC100 will deflect the call to User B.
- **Unconditional** : PIC100 will deflect the call to User B unconditionally.
- **User Busy** : PIC100 will deflect the call only if you are busy.

Before call deflection is completed, the network may send a Call Deflection Tone (CDT) to User A and User B. Generation of CDT depends on the call deflection type you have configured. The deflection types are shown in the following table.

Deflection Type	CDT sent to User A	CDT sent to User B
CD1	No	No
CD2	Yes	No
CD3	No	Yes
CD4	Yes	Yes



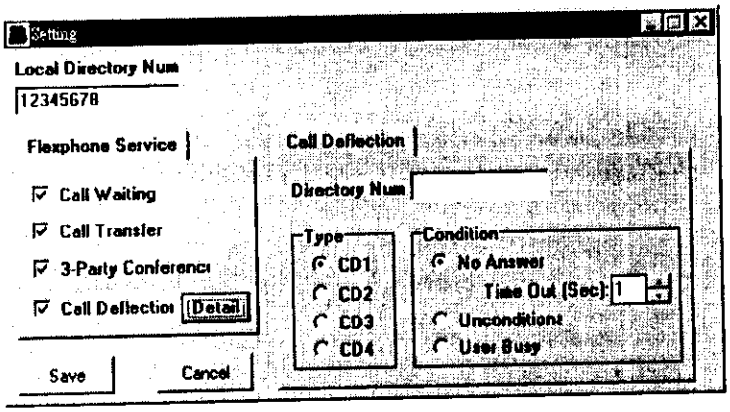
(Fig : SD_main.bmp)



(Fig : SD_conf.bmp)

The settings are described as follows.

- **Local Directory Num** : Enter your phone number.
- **Flexphone Services** : Select the flexphone services you have subscribed. If you enable Call Deflection service, more detailed items can be configured by clicking on the **Detail** button.

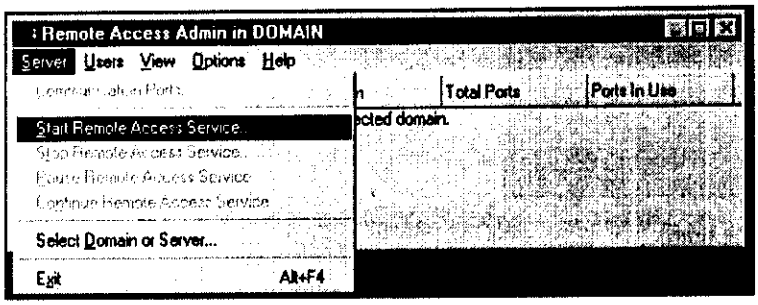


Press **OK** to finish the connection property setting. For now, RAS client setup is completed.

(Fig : NT_IPX_Config.bmp)

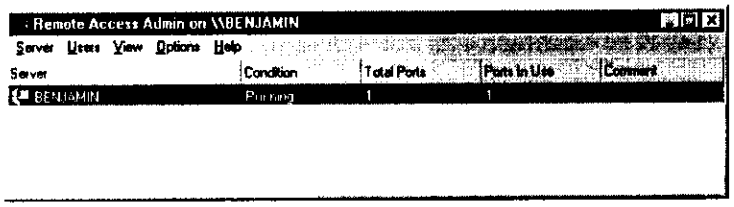
After finishing the detailed configuration of network protocols, press **OK** to go back to Remote Access Setup box. Click on **Continue** to go on setup procedure. After that, the dialog box labeled Network is shown, click on **OK** to complete the setup procedure. Windows NT4.0 will instruct you to restart the computer.

6) Click on **Start**, go through **Program, Administrative Tools**, and **Remote Access Admin**. Click on **Server** and select **Start Remote Access Service**.



(Fig : NT_Start_RAS.bmp)

Enter the server name and press **OK**. You can see the following box.



Click on **Users** and open **Permissions**. Select **Grant dialin permission to user**. You can use **User Manager for Domain** in **Administrative Tools** to configure the logon-user properties. For now, the RAS server setup procedure is completed.

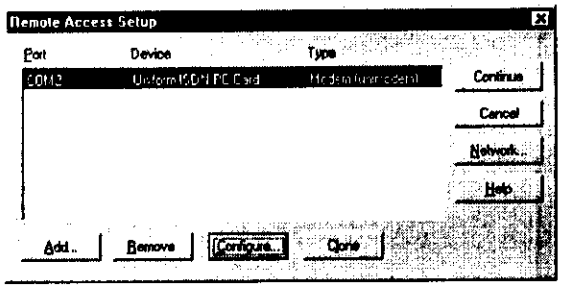
3.2.2 RAS Client Configuration

The detailed configuration of RAS Client is presented in this section. You can setup a RAS client on Windows 95 or Window NT4.0 (server or workstation). We just provides the setup procedure on Windows 95.

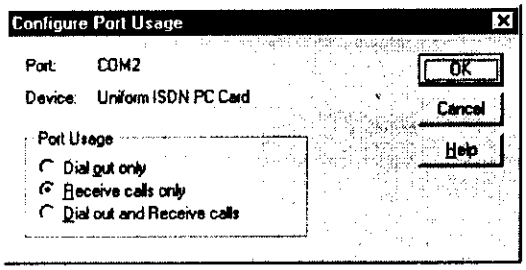
1) Install PIC100 on Windows 95 (see Chapter 2 for detailed information).

2) Click on **Network** in Control Panel. If you want to access NetWare File server, you have to install **Client for NetWare Networks** and **IPX/SPX-compatible Protocol**. If you want to access Internet through RAS server, you have to install **TCP/IP protocol**.If you want to run NetBIOS applications over IPS/SPX-compatible protocol, you have to install **NETBIOS support for IPX/SPX-compatible protocol**.

3) Go to **Dial-Up Networking**, click on **Make New Connection** icon. Type the connection name and then select **Uniform ISDN PC Card** from the modem list. Click on **Configure** button. A box labeled Uniform ISDN PC Card is shown. Select **Connection** and go to **Advanced**. You can see the following box.

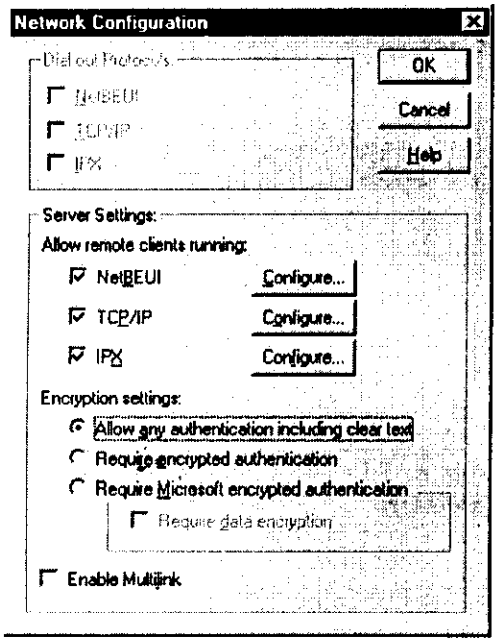


(Fig : NT_RAS_Setup.bmp)



(Fig: NT_RAS_Port_Usage.bmp)

Press **OK** and go back to **Remote Access Setup** box. Click on Network to configure network options. It is recommended to enable **NetBEUI**, **TCP/IP**, and **IPX**.



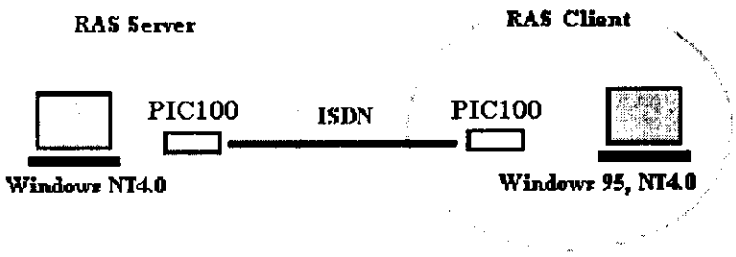
(Fig : NT_Net_Config.bmp)

There are three kinds of encryption settings listed:

- Allow any authentication including clear text (PAP, CHAP, or MS-CHAP)
- Require encryption authentication (CHAP)
- Require Microsoft encryption authentication (MS-CHAP)

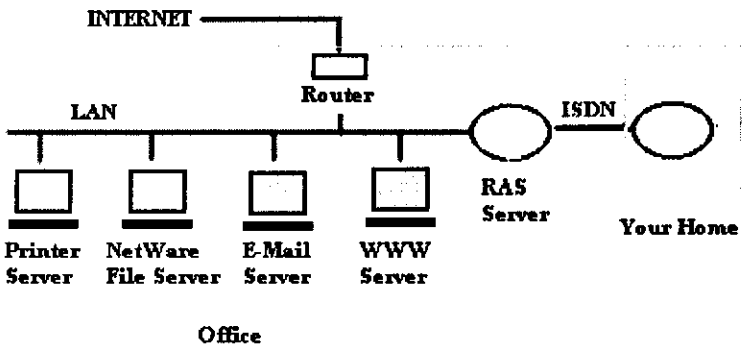
Typically, you can select the first item to allow any authentication protocol including clear test. If you select the second or the third item, the RAS client should also enable the same authentication protocol. Otherwise, the RAS

server and RAS client is described in the following sections.



(Fig: RAS_C_S.bmp)

A typical system connection is presented below.



(Fig: RAS_System_Connection)

By making use of this system, you can work at home just like in your office. You can access NetWare File server, Network printers. Furthermore, if your office network is connected to Internet through leased line, you can also access to Internet.

3.2.1 RAS Server Configuration

The detailed configuration of RAS Server on Windows NT4.0 is described in this section. User can follow the instructions to setup a RAS server on Windows NT4.0.

1) Install PIC100 on Windows NT4.0 server. You can follow the instructions described in Chapter 2.

2) If there is no LAN card installed in your computer, you have to install a LAN card on Windows NT4.0 server. For detailed information, you can check your LAN card user manual.

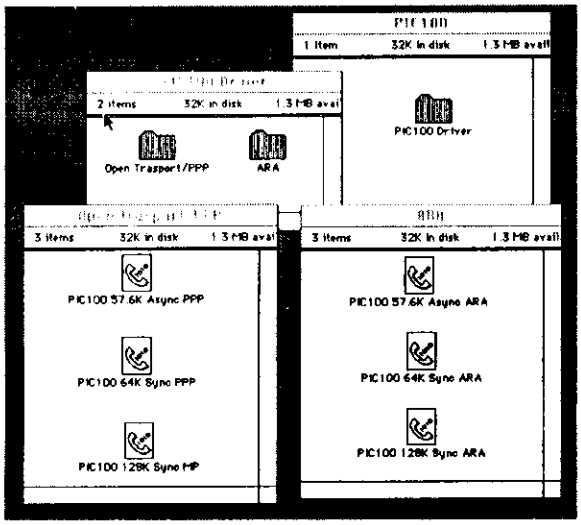
3) Check if Remote Access Service is installed in your computer by clicking on **Network** icon and entering into **Services**. If Remote Access Service is already loaded, you can find it in the list of Network Services. If no, you can follow the step (4) and (5) to load Remote Access Service.

4) Press **Add** in the dialog box, another box labeled **Select Network Service** appears.

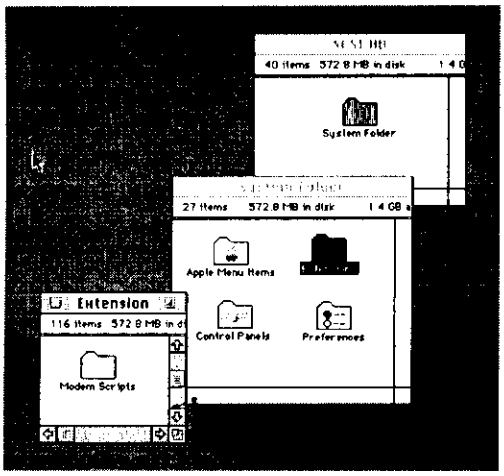
3.1.4 Access To Internet On Macintosh

3.1.4.1 Mac OS 7.6

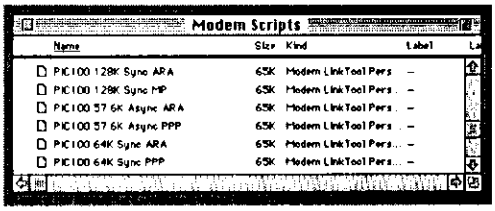
Insert the installation disk labeled **for Macintosh**. Click on the floppy disk icon and go to **Open Transport /PPP** and **ARA** directories.

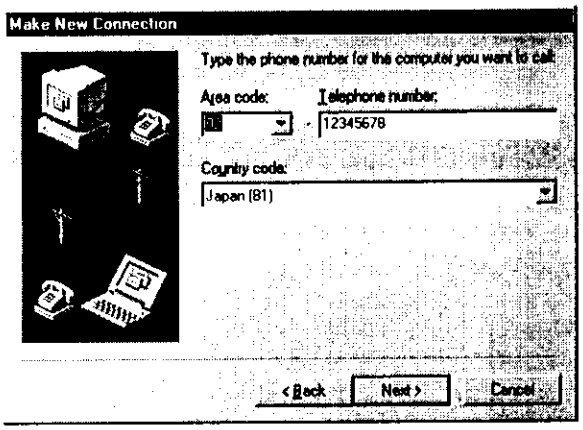


Copy all the files in these two directories to Modem Script directory in Extension of System folder.



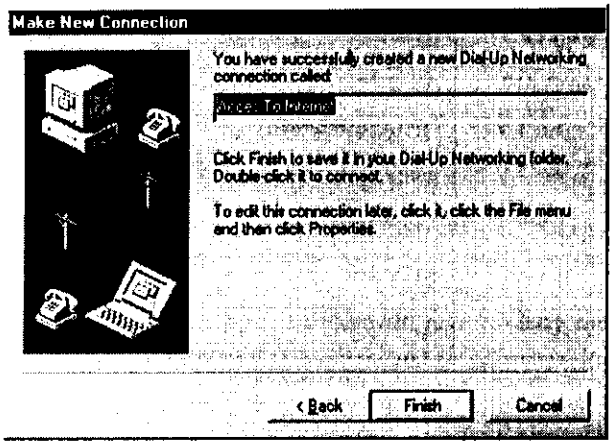
After that, you can see PIC100 driver files in Modem Script.



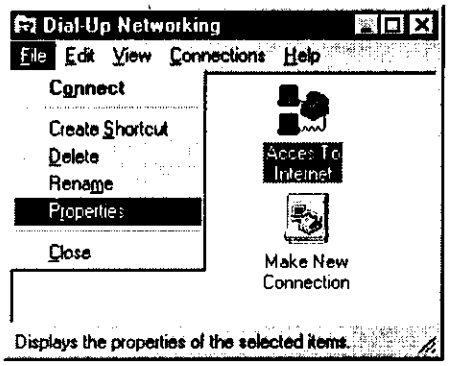


Note : Two phone numbers are needed to make a 128K ML-PPP call. If you enter just one phone number, the PIC100 will regard that two numbers are the same. If two numbers are different, you have to enter two phone numbers delimited by & (e.g. 12345678&12345679).

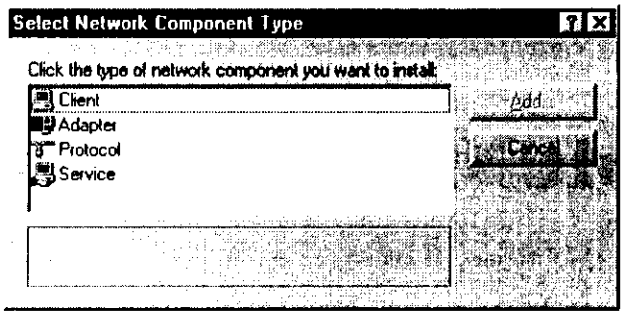
Then click on **Next** button. The following dialog box appears. Click on **Finish** button.



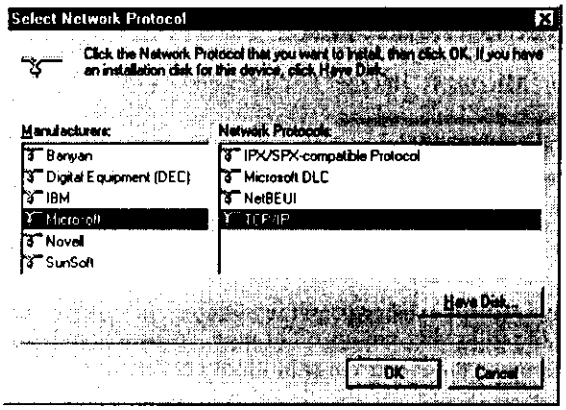
6) Select **Access To Internet** connection and open its properties.



Click on **Server Type** button, you can see the following dialog box. Select only **TCP/IP** network protocol, disable **Log on to network** as shown below. If your ISP uses CHAP (Challenge Authentication Protocol), you have to enable **Require encryted password**. Otherwise, you should disable this option.

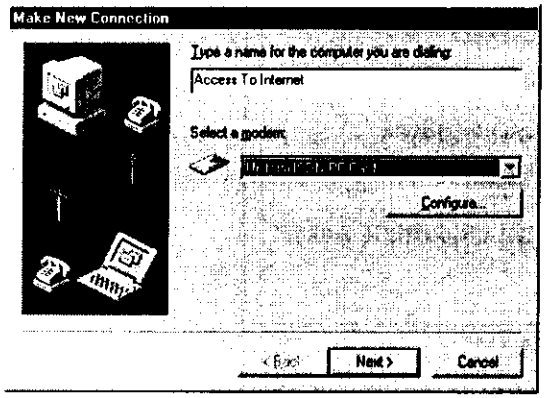


3) Go to **Microsoft** and select **TCP/IP**, then press **OK**. To complete installation, Windows 95 will instruct you to restart computer.



4) Open **My Computer** and click on **Dial-Up Networking** icon.

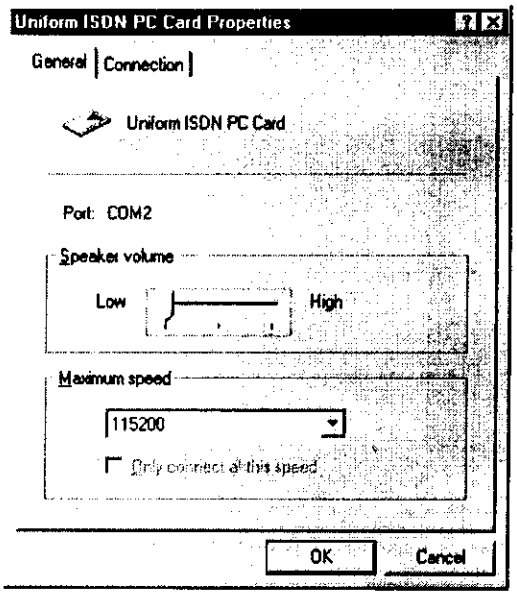
5) Click on **Make New Connection** icon. Type your connection name and select **Uniform ISDN PC Card** from the modem list.



3) Click **Configure** button, a dialog box appears. Go to **Connection** and click on **Advanced**.

2.4.4 Host Connection Confirmation

Macintosh OS does not come with modem terminal program in the package. If there is a terminal program installed in your computer, you can follow the steps for MS Windows to confirm your host connection.



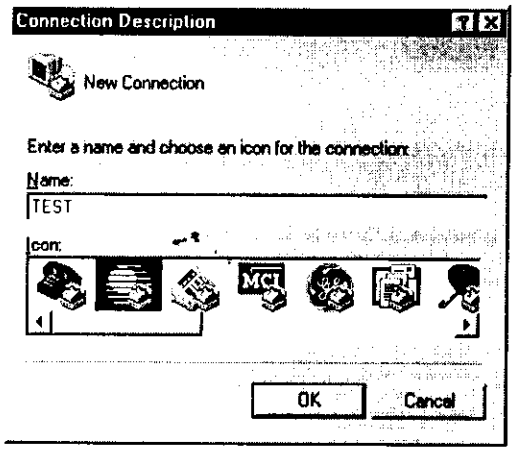
(Fig : NT_Max_Speed.bmp)

2.3.3 ISDN Line Connection

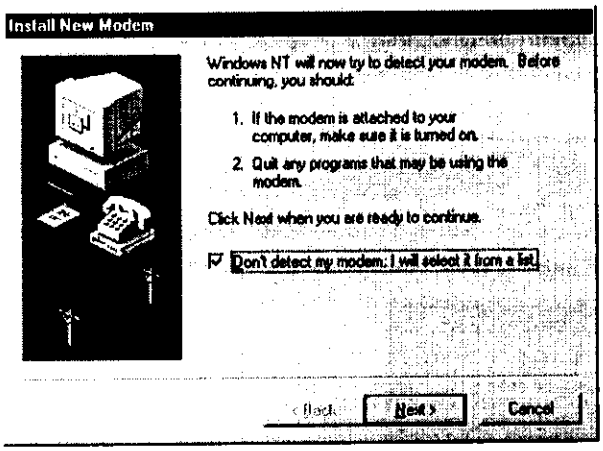
Connect ISDN line to the RJ45 socket of PIC100 tail box. For detailed, please refer to the previous section about ISDN line connection.

2.3.4 PC Connection Confirmation

Open HyperTerminal on Windows NT to make a new connection. Enter the connection name and select the preferred icon. Then click on OK.

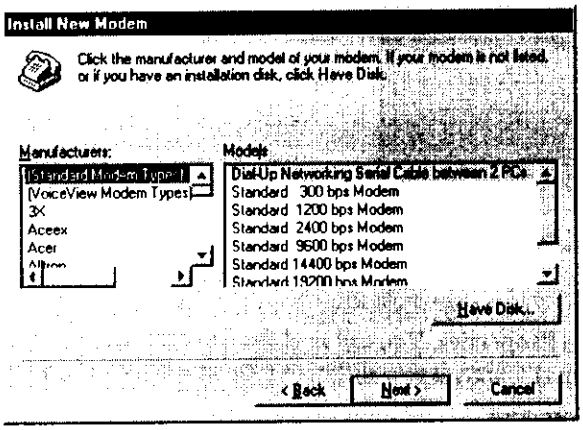


Enter the country code, area code, and called telephone number, select **Uniform ISDN PC Card**. Then click on OK.



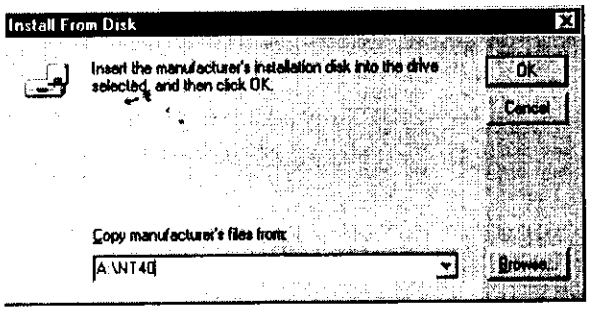
(Fig : NT_Install_New_Modem.bmp)

Press Next the following box is shown..



(Fig : NT_Have_Disk.bmp)

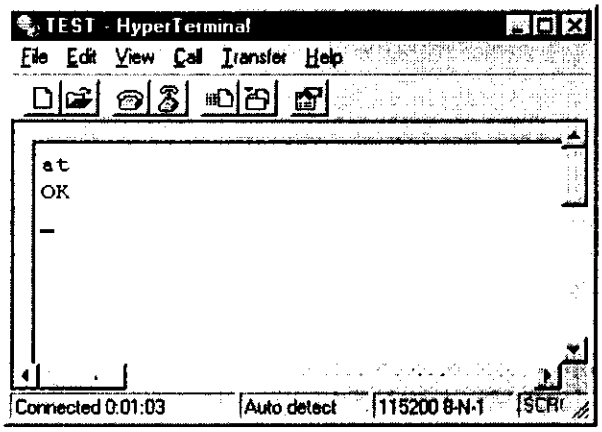
Click on **Have Disk**. After you insert the installation disk, locate the area in the dialog box labeled Copy manufacture's file from, and type A:\NT40 or B:\NT40 (depending on which floppy drive you are using).



(Fig : NT_Install_From_Disk.bmp)

Click on **OK**. You can see that a list of devices in the Models area. Select the proper device and click on **Next**.

Note : RAS server and RAS client have to use the same call type. Otherwise, the connection can not be established.

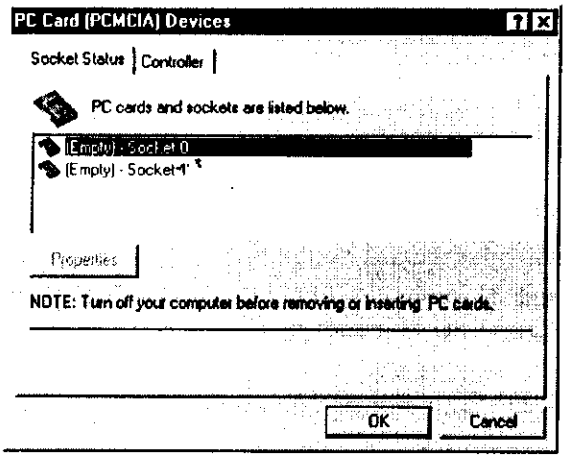


2.3 Installation on Windows NT 4.0

2.3.1 Card and Socket Service Confirmation

Note : Do not insert PC card into your computer at this moment.

Windows NT 4.0 comes with the Card and Socket Service, so you do not have to install any additional software for managing your PCMICA cards. To make sure that Windows NT 4.0 32-bit Card and Socket Services are loaded, you check it by clicking on the PC Card icon in Control Panel. If Windows NT has been loaded properly, you should have a PCMCIA wizard which provides you with the updated version of Card and Socket Services.

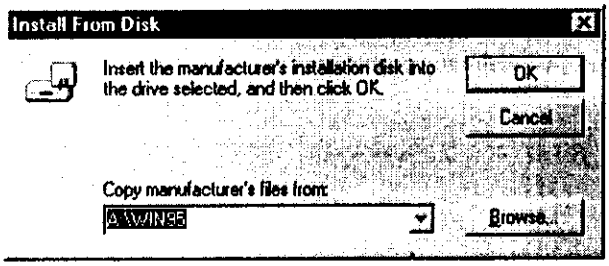


(figure : NT_PC_card.bmp)

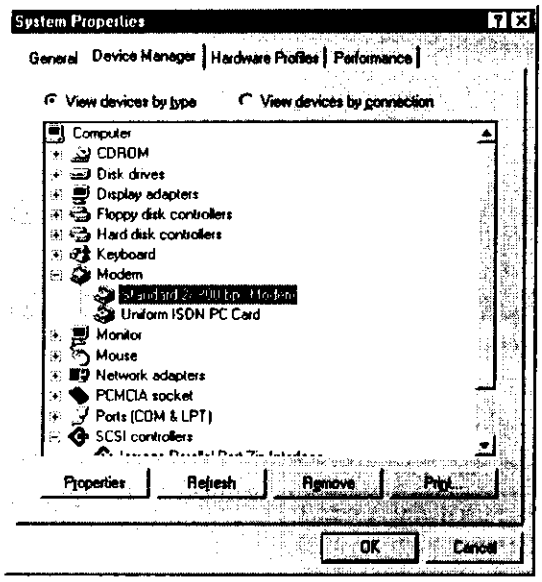
If you can not find PC Card icon in Control Panel, you have to load Card and Socket Services by Add New Hard icon in Control Panel. The detailed procedures, please refer to your computer user manual and Windows NT on-line help.

2.3.2 PIC100 Installation

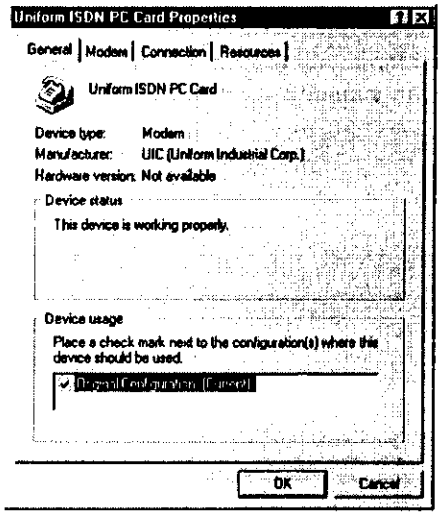
3) A new windows labeled **Install from Disk** will appear instructing you to insert the manufacture installation disk into floppy drive. After you insert the disk, locate the area in the dialog box labeled Copy manufacture file from , and type in A:\win95 or B:\win95 (depending on which floppy drive you are using). Then click OK. The installation program should find the MDMUIC.INF file. Then Windows 95 Registry will automatically be changed to reflect the addition of a new hardware.



4) To verify that the card is configured and working correctly, click on System icon in Control Panel. Go into Device Manager in the System Properties box. Find Modem in the list of devices, and click on it. You can find **Uniform ISDN PC Card** is in the list as shown below.



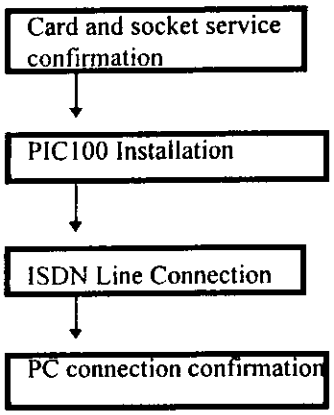
Double Click on **Uniform ISDN PC Card**, you can get the Device Status. Now your PIC100 is correctly installed.



2. INSTALLING PIC100

2.1 Common Installation Procedures

This section describes the common installation procedures. You can follow these procedures to setup PIC100 on your computer.



Check if there is card and socket service installed in your computer. If no, install it on your computer

Intall PIC100 on your computer

Connect ISDN line and PIC100 tail box

Make sure PIC100 works well on your computer

Card and Socket Service

Card and Socket Service is a universal driver for PCMCIA cards. It allow you to use a variety of PCMCIA cards. When a new card is inserted, Card and Socket Service automatically recognize and enable it. It allow you to hot swap, that is , cards can be installed and removed while your computer is powered. It also help resolve conflicts that sometimes arise between cards that wish to share the same resources. Thus, if your computer does not have Card and Socket Service installed, you must install it before you installing PCMCIA cards.

Some of the installation procedures depend on which platform you are using. The following sections describe the complete procedure for Windows 95, Windows NT 4.0 and Macintosh.

2.2 Installation on Windows 95

2.2.1 Card and Socket Service Confirmation

Note : Do not insert PC card into your computer at this moment.

Note : Because of a variety of Windows 95 versions, the dialog boxes presented in this section may be slightly different from the ones

1.2 What In It For You

Your PIC100 contains the following items.

- One PIC100 PCMCIA Card
- One 4-inch interface cable terminated by a box
- A headset for voice service
- Three Installation disks, two for MS Windows and one for Macintosh.
- One PIC100 User Manual

1.3 Before Using PIC100

You have to prepare the following items before using PIC100.

- Subscribe the ISDN (INS NET 64) service
- Personal Computer with Windows 95 or Windows NT 4.0, or Macintosh with PCMCIA V2.1 (JEIDA V4.2) Type II slot.

1.4 ISDN Line Connection Charge

The connection charge depends on how long you connected to B channel and how many B channels you used. If you use two B channels at the same times, the connection charge is doubled.

When you want to terminate the connection, you have to make sure ISDN line connected is terminated by checking the LED on the tail box. If the color of LED keeps orange, one B channel is active. If the LED keeps flashing in orange color, two B channels are connected. If the color is LED is green, it means no B channel is active.

For ML-PPP connection, you can enable the traffic monitoring feature to dynamically open and close the additional B channel depending on the current traffic throughput. By this way, PIC100 can automatically close on B channel in low traffic condition. And open the additional B channel in high traffic condition. However if you want to enable this feature you have to make sure the remote party, ISDN router or TA also implements BACP (Bandwidth Allocation Control Protocols) feature.

1.5 System Connection

1.5.1 Inserting And Removing Your PC Card

Your PIC100 will fit into any Type II or Type III PCMCIA slot. Slide the card straight into the slot as suggested by your system manufacture. The card should fit in only one way, typically with the logo facing up. If the card does not fit into the slot easily, do not attempt to force it.

Warning: Attempt to force it inserted may cause your PC Card and Computer damaged.

When removing your card, gently pull it straight back, or use the eject button. Do not try to remove the card by pulling on the interface cable.

Warning: Attempt to remove the card by pulling on the cable may

5. DETAILED CONFIGURATION 35

5.1 COMMON CONFIGURATION 35
5.1.1 Local Address 35
5.1.2 Local Sub-Address 35
5.2 AT COMMANDS 36
5.2.1 AT Command Description 36
5.3 S REGISTERS 48
5.4 FACTORY SETTINGS 49
5.4.1 Factory Setting 0 (&F0) : PPP mode 49
5.4.2 Factory Setting 1 (&F1) : ML-PPP mode 49
5.4.3 Factory Setting 2 (&F2) : V.110 mode 50

6. TROUBLESHOOTING 51

6.1 FISRT TO CHECK 51
6.2 FAQ (FREQUENTLY ASKED QUESTIONS) 51

7. FIRMWARE UPGRADE 53

7.1 HOW TO UPGRADE PIC100 53