

# ISDN Adapter Quick Installation

## 1. BEFORE INSTALLATION

**NOTE:** Only use the accessories and connection cables attached with the ISDN adapter package.

With problems, please refer to the help file of **Manual** in the provided CD.

**Checklist:** Before installation, you need to check:

Package Contents	You also Need...	ISDN Adapter Series
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> ISDN adapter</li> <li><input checked="" type="checkbox"/> Installation CD</li> <li><input checked="" type="checkbox"/> RJ-45 cable</li> <li><input checked="" type="checkbox"/> Quick Installation</li> <li><input checked="" type="checkbox"/> RJ-11 cable (voice model only)</li> <li><input checked="" type="checkbox"/> USB cable (USB TA only)</li> <li><input checked="" type="checkbox"/> RJ11-BTS phone adapter (UK only)</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Subscribe an ISDN BRI line from your local telephone company</li> <li><input checked="" type="checkbox"/> Prepare a NT1 device (for S/T interface only).</li> <li><input checked="" type="checkbox"/> Get an Internet access account for Internet access.</li> </ul>	<p>The ISDN 128K adapter series include the types with the respective O/S support</p> <ul style="list-style-type: none"> <li>☞ ISDN PCI Card: Win95, Win98(VxD &amp; WDM), WinNT, Win2000</li> <li>☞ ISDN PCMCIA Card: Win95, Win98, WinNT, Win2000</li> <li>☞ ISDN USB TA: Win98, Win2000</li> </ul>

## 2. HARDWARE INSTALLATION

### Step 1: Terminator Setup ( for ISDN S/T interface adapter)

**NOTE:** Please ignore this step and proceed to Step 2 if you get the ISDN adapter with U interface.

**Option 1:** for ISDN PCI Cards and USB TA

⇒ ISDN S/T interface adapter has two jumpers: JP1 and JP2. The default setting of the jumpers is terminator enabled. **Only one** ISDN S/T device connected to the NT1 can be set to the terminator enabled.

**Option 2:** for ISDN PCMCIA Cards

⇒ ISDN PCMCIA adapter dose not provide terminators setup, the default setting is OPEN. If there are other ISDN devices connected to the NT1 with ISDN PCMCIA adapter, you may need one of other ISDN devices as terminator.

### Step 2: Installing the ISDN 128K adapter

**Option 1:** for ISDN PCI Cards

⇒ Turn off your computer and remove the lid. ⇒ Press the ISDN 128K adapter into a spare PCI slot, and secure it with screws. ⇒ Put on the lid.

**Option 2:** for ISDN PCMCIA Card

⇒ Insert the ISDN PCMCIA card into a spare PCMCIA Type II slot.

**Option 3:** for ISDN USB TA

⇒ Please attach the ISDN USB TA to the USB port of your computer with the USB cable.

### Step 3: Analog device connection (for voice model)

⇒ Attach the RJ-11 jack of your ISDN adapter to current analog devices with the RJ-11 cable.

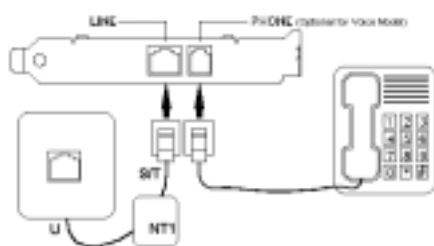
### Step 4: ISDN connection

**Option 1:** for S/T interface

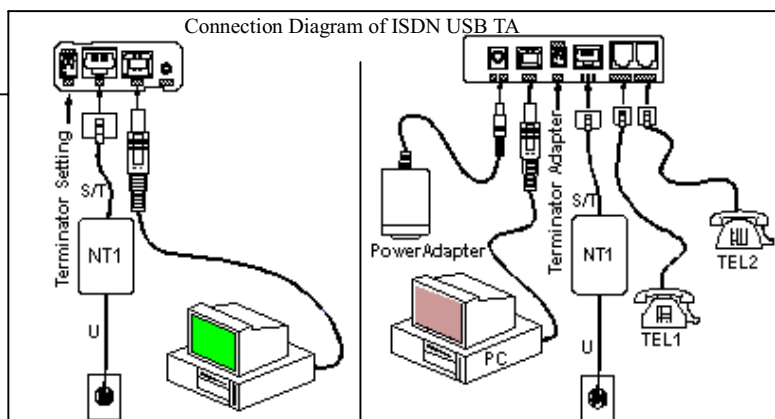
⇒ Connect the S/T interface adapter and NT1 with RJ-45 cable, and insert the ISDN BRI line into the correct NT1 socket.

**Option 2:** for U interface

⇒ Directly attach the ISDN BRI line to the RJ-45 jack on the U interface adapter with the RJ-45 cable. Please kindly be informed that even RJ-45 connector has 8 pins and RJ-11 has 4 or 6 pins, but you can still plug the cable from wall jack with RJ-11 connector into the RJ-45 jack on the U interface adapter. The U interface adapter can work.



Connection Diagram of ISDN PCI Card



Connection Diagram of ISDN USB TA

## 3. SOFTWARE INSTALLATION

### 3.1 Software Installation for Windows 95

**Installing and Configuring the Drivers:** After hardware installation, start Windows 95.

⇒ Insert the provided CD into the disk drive and run the **ISDN100.INF** file in the subdirectory \CARD\WIN95 (for PCI card) or \PCMCIA\WIN95 (for PCMCIA card) from the installation CD. Follow the onscreen instructions to complete the installation.

⇒ **To set up (or change) ISDN configuration**, click Start → Settings → Control panel → System → Device Manager → ISDN Card → ISDN PC Adapter (or ISDN PCMCIA Card), Properties → Settings. Please fill the information in the text boxes.

◆ **Switch Type** Choose the country for your location, or select an appropriate ISDN switch type in your country.

◆ **Codec** A-Law for the European telecommunication standard, and u-law for the US standard.

◆ **Dial Standby Time** Suggest leaving it as the default value.

◆ **MSN (POTS)** is used for ISDN switches supporting MSN (Multiple Subscriber Number) service. It is only for the voice model and determines the telephone number associated with the POTS interface.

**If you want your analog device to ring when receiving an incoming call, please keep this field blank.**

◆ **SPID-1** and **SPID-2** only for some US users. Please check with your telephone company if necessary.

◆ **PTP-Mode & X.25 D-Channel:** Leave the two checkboxes unselected unless specified.

⇒ After configuring the switch type, restart your computer. After restart, you can connect a standard analog telephone set into RJ-11 jack for “voice” model and be sure to hear the dial tone from the telephone handset.

⇒ Please check the property of connection icon in Dial-Up Networking folder.

**Optional 1:** If you see the “set additional devices” in the general subwindows or “MultiLink” tab, it means your Windows 95 support NDISWAN interface, and has the ISDN Accelerator Pack 1.1 (MSISDN11.EXE) or Dial-up Networking 1.2 (MSDUN12.EXE) installed, proceed to Application Setup.

**Optional 2:** If not, you need to update the Dial-Up Networking to support 2B channel (MLP) connection and NDISWAN Miniport interface. Please install the Win95 MSISDN11.EXE (version 1.1 or above) upgrade pack. You can get the file from the provided installation CD from Microsoft web site. **Run the MSISDN11.EXE or MSDUN12.EXE program** and follow the installation instructions. After finish, please reboot your PC.

#### **Application Setup:**

After driver installation, you can execute the applications based on the WinISDN and CAPI interfaces. The following are the instructions to connect your ISDN through the NDISWAN Miniport Adapter:

**NOTE:** You **must** install the Microsoft ISDN Accelerator Pack 1.1 (MSISDN11.EXE) or later version (eg. MSDUN12.EXE) before install the NDISWAN Miniport driver.

#### **Adding NDISWAN Miniport driver:**

⇒ Select Start → Settings → Control Panel → Network → Add → choose Adapter, Add → Have Disk. Open the **iinwan95.inf** file from the subdirectory \CARD\WIN95\NDISWAN (for ISDN PCI card) or \PCMCIA\WIN95\NDISWAN (for ISDN PCMCIA card) in the installation CD, and click OK.

⇒ Win95 will find one compatible device. Click OK. Wait for Windows copying files.

⇒ Click OK, you will see an ISDN Configuration window. Because you have installed the ISDN NDISWAN driver, the ISDN Accelerator Pack will request for the ISDN service information. Click Next.

⇒ Select “Automatic” for Switch protocol, click Next.

⇒ Leave the Phone number and SPID fields blank. Click Next, Finish, and then reboot the system.

**NOTE:** To configure the Dial-Up Networking to access Internet, please refer to Manual in the provided CD.

### Configuring the NDISWAN adapter

⇒ There are four parameters need configuring by clicking Start → Settings → Control Panel → System → Device Manager → Network Adapters → ISDN adapter, Properties.

**The MSN1 and MSN2** are used for filtering the incoming call in separated ISDN port1 (ex. IINWan95-Line01) and ISDN port2 (ex. IINWan95-Line02). For example, if you want ISDN port 1 to receive telephone number 12345 only, you can enter 12345 into MSN1. The subaddress works as an extension number only when your local ISDN switch provides this function. Normally, leave these fields blank.

**The Calling Party 1 and Calling Party 2** are used to indicate the ISDN switch (PTT) that this call is made from this telephone number and bills the communication cost based on this telephone number. Be noticed that MSN1 and Calling Party 1 are reserved by ISDN port1, the MSN2 and Calling Party 2 are reserved by ISDN port2.

## 3.2 Software Installation for Windows 98

There are two types of Windows 98 drivers (**VxD** and **WDM**) at the installation CD. Both installation programs can install the ISDN driver, virtual COM port, and NDISWAN Miniport driver.

### **VxD Installation for ISDN PCI Card ONLY:**

- ⇒ Start Windows 98. Insert the provided CD into your CD-ROM drive.
- ⇒ When Windows 98 detects an ISDN PnP card and requests for driver, and run the **ISDN98** file from the CARD\WIN98 subdirectory of installation CD. The installation program will auto-process the necessary installation steps (including the NDISWAN Miniport driver installation, so you need NOT to install the ISDN pack MSISDN11.EXE). The driver configuration and application setup are the same with Windows 95; please refer to section 3.1 for details.

### **WDM Installation for PCI PCMCIA Cards and USB TA:**

- ⇒ After hardware installation, power on the computer and start Win98. Windows 98 should auto-detect a new PnP card and request for its driver. Please click “Next”.
- ⇒ Select “Search for the best driver for your device”, click “Next”.
- ⇒ Then insert ISDN 128K installation CD into the appropriate disk drive, and run the **ISDN98.INF** file under CARD\WIN98WDM (for PCI card) **or** PCMCIA\WIN98 (for PCMCIA card) **or** USB\WIN98 (for USB TA) subdirectory from the provided CD. Windows 98 will auto-process the necessary installation steps. The ISDN adapter, two virtual COM ports, and NDISWAN Miniport driver will be installed. During the NDISWAN Miniport driver installation, Windows 98 will request for configuring the ISDN pack. Please click “Next” for this ISDN pack.
- ⇒ Reboot Windows 98 to enable the driver and settings.

**NOTE:** The ISDN pack is included in Windows 98 as default, so you do not need to install the ISDN pack again.

- ⇒ After restart, there is a small icon in the system taskbar. This icon can indicate the ISDN line status (D, B1, and B2 channels).
- ⇒ With cursor pointing to this icon, it will show application name, driver version, and the monitored ISDN card. Right-click the icon, there are 4 or 5 options in the context menu: **Configuration, Linetest, Log, and Exit**. Select Configuration and follow the steps below.
- ⇒ Installing ISDN device in WDM type, you couldn't check ISDN device by pressing "More Information" in \Control Panel\ Modems. Because the device becomes a virtual Com Port after installation, you couldn't check them from the modem path. If check the ISDN device via Control Panel\ Modems\ More Information, it will show "Port couldn't open". It is normal response.

### ISDN Configuration

⇒ When you select the configuration option, it shows the current ISDN devices in Windows 98 with ISDNDevice-XX name. The two ISDNDevice ports are under NDISWAN ports, two virtual com ports are under COM Port, and POTS port if you choose our ISDN adapter with POTS (A/B) feature (“voice” model only).

⇒ Highlight the ISDNDevice-XX and click Properties.

<b>Alias Name</b>	Displays the ISDN device name and you may change the name. Because this WDM driver supports multi ISDN devices in Windows 98, it is easy to make notes with alias name for each ISDN device.
<b>ID</b>	Displays the CAPI application ID and also shows the error reason if ISDN driver is not able to run.
<b>Interface</b>	Shows the ISDN interface (S/T or U interface) of ISDN device.
<b>BUS</b>	Shows the PC bus type (ISA or PCI bus) of ISDN device.
<b>Type</b>	Shows this ISDN device is an internal card or external device, and Active or Passive type.
<b>POTS Port</b>	Shows how many POTS port supported by this device.
<b>Provide Tone Resource</b>	Shows TONE provided or not of ISDN device. Shows the resource assigned by Windows 98 to ISDN device.
<b>SWITCH</b>	Shows the ISDN switch type. This field is changeable.
<b>SPID1/2</b>	Show the SPID1 and SPID2. Both fields are changeable if you select the US type ISDN switch in SWITCH field such as NI1.
<b>PTP mode</b>	Set the ISDN line as point to point mode, you may set TEI value also if phone company specifies the TEI value to you. Otherwise, let it as default (blank).
<b>X.25 on D</b>	Enable driver to provide X.25 on D channel service and specify the TEI value also. Please leave it as default (blank) if it is not available in your ISDN service list.
<b>MSN List</b>	Click this and input MSNs to be a MSN list. If your local ISDN line provider does not provide this service, please leave it blank.

⇒ Highlight ISDNDevice-XX-LineXX and click Properties, you get the configuration items as below.

<b>MSN</b>	Select it from the MSN List as above item. Then when you make a call through this port, this number will be sent to ISDN phone company for the bill. You may also enable the filtering function to the incoming call. This means the incoming call will be matched with this number and accept the incoming call if match correctly.
<b>SAD</b>	Sub-address, it is almost the same as MSN. It depends on the ISDN phone company. It may provide the service or not.
<b>Protocol</b>	Select the outgoing protocol and incoming protocol when make a call or receive a call through this port. There are three protocols supported, HDLC, X.75 Transparent, and V.120. Or leave it as auto-detection for incoming call, it means driver will detect one of protocols depended on remote device. If you want to use our MLPPP and MLPPP+BOD function for outgoing call, you need to check “Enable Multilink PPP” and click “Advance” to select the second NDISWAN port and configure the second channel as below.

To check the “Enable BOD” to enable MLPPP+BOD function with two default parameters, data flow rate (1 Kbytes/sec) and Inactivity timeout (5 minutes). The system will start to establish the second channel if the average data flow of the first channel exceeds 1 Kbytes/sec during the past five minutes. At the 128K data connection, If the average data flow lower than 1 Kbytes/sec during past 5 minutes, the system will disconnect one B channel. During the 128K data connection if the user want to make a voice call or receive an incoming voice call, the system will automatically disconnect one B channel to set up the analog voice connection.

To add another NDISWAN port for second channel and click “Edit” to configure it. The Call No. is the remote telephone number, Call Sub Addr. is the sub-address (leave it blank if phone company does not provide this), MSN and SUB for bill as above.

For the MLPPP and MLPPP+BOD of incoming call, it almost the same as outing call, except the filter function. The called number of incoming call should match the MSN and/or SAD before accepting this call if filter is ON. Please refer below figure

⇒ Click the POTS and Properties if you get the ISDN board with POTS (A/B) port.

⇒ Click 1 under POTS section and Properties.

Select a number from the MSN List for MSN. Then when you make a call through this POTS (A/B) port, this number will be sent to ISDN phone company for bill. You may also enable the incoming call filtering function. This means the incoming call with be matched with this number and driver will ring the telephone device if match correctly. Sub-address (SAD), it is almost the same as MSN. It depends on the ISDN phone company with/ without the service.

### **Application Setup**

The application setup is the same as in Windows 95 section. User can use CAPI, NDISWAN, virtual COM port and others to access ISDN driver. But for WDM driver, it provides more flexible configuration to enable multi-link and bandwidth on demand functions.

### 3.3 Software Installation for Windows NT 4.0

#### Installing and Configuring the Drivers::

- ⇒ After hardware installation, turn on your computer and start Windows NT. If your Windows NT has installed the PNPISA, Windows NT should detect an ISDN card and request for the driver, please check "Do not install a driver" and follow the instructions below.
- ⇒ For ISDN PCMCIA card ONLY, if you have ISDN PCI card, please proceed to next step.
  - 1) Double click the Devices Icon in the Control Panel ,highlight PCMCIA and click Startup button.
  - 2) Select Boot and click OK.
  - 3) Highlight Pcmcia and click Start.
  - 4) Now, the statue of Pcmcia is Started and Boot.
- ⇒ Double click the Network Icon in the Control Panel.
- ⇒ When prompted with Network Setup Wizard, check Wired to the network and click Next.
- ⇒ Click Select from list, and then click Have Disk.
- ⇒ Option 1: For ISDN PCI card, specify the path \Card\ Winnt of the installation CD.  
Option 2: For ISDN PCMCIA card, specify the path \PCMCIA\ Winnt of the installation CD.
- ⇒ Highlight " ISDN 128K PC Adapter" (or "ISDN 128K PCMCIA Adapter"), and click OK.
- ⇒ Windows will find the Network Adapter, and click Next.
- ⇒ When prompted with Network Protocols, check "TCP/IP Protocol" , and click Next.
- ⇒ Option 1: If you have Remote Access Service (RAS) installed, just click Next to proceed to the next step to install ISDN.  
Option 2: If not, click Select from list.  
Highlight "Remote Access Service" and click OK, and then click Next.  
(The RAS is provided by Microsoft, so you may need to prepare the Installation disks or CD of Windows NT to continue.)
- ⇒ Click Next to install selected components.
- ⇒ If prompted with Windows NT Setup window, insert your Windows NT installation CD and then enter the drive letter of your CD-ROM drive. Click Continue.
- ⇒ When prompted to select ISDN Driver Bus Location, select the media type and bus number corresponding to your ISDN type
- ⇒ Check "Use FIFO buffers (require 16550 compatible UART)" and click OK.
- ⇒ When prompted to confirm DHCP server use, click Yes if your ISP support the function.
- ⇒ When prompted to Add RAS Device, click OK.
- ⇒ When prompted, if you do not see the ISDN ports with the device name of IINWANNT, just click Add to add both IINWANNT devices.
- ⇒ Highlight the ISDN1 and click Configure to set the parameter (Port Usage) to the ISDN1port for "Dial out only", "Receive calls only", or "Dial out and Receive calls", and click OK.
- ⇒ If you select "Dial out only" and then click network, you will get a window like below. Select the protocol you want. If you need to access Internet, select "TCP/IP" usually.
- ⇒ If you select "Receive calls only", or "Dial out and Receive calls" and then click network, you will get a window like below. Please check your ISP or network administrator for TCP/IP settings. With the checkbox "Allow any authentication including clear text" selected in Encryption settings, click OK.
- ⇒ Select the ISDN2 and repeat the same steps above, and then click Continue.
- ⇒ After successful installation, click OK.
- ⇒ You need to restart your computer now.
- ⇒ The IRQ and IO can be configured manually if necessary. However Auto configuration is recommended even if your BIOS does not support PnP. In the ISDN Configuration box, you can fill the "calling party number" and "calling party subaddress" from NDISWAN Setting tab. If your telephone company offers the MSN service, you can use these parameters to get the bill of your respective MSN ISDN telephone number. All of the other parameters please refer the section for Windows 95 and 98 installation.

### **Configuring an Access Account over ISDN**

- ⇒ Select Start → Programs → Accessories → Dial-Up Networking. Enter the name of the new Dial-Up account and click “Next”. Enter the server type and details of your ISP and click “Next”. Select IINWANNT and click “Next”. Enter the phone number of your ISP and click “Next”. Click “Finish”.
- ⇒ To configure server settings or dialing properties, click “More” and select the item you want to change from the pull-down menu. Click “Dial” to make a connection with server over ISDN. Different from Windows95 Dial-up-Networking, these parameters (phone number, dial using port, server type, and security) are located in “Edit entry and modem properties” when click “More”. In the “Security” sub-window, check “Accept any authentication including clear text” enabled.
- ⇒ For Multilink PPP connection (128Kbps), please follow the steps below.

Step1: Click “More” and select “Edit entry and modem properties”.

Step2: Under the Basic tab, set “Dial using” to Multiple Lines.

Step3: Click Configure and check IINWANNT(ISDN1) and IINWANNT(ISDN2) enabled.

Step4: Select IINWANNT(ISDN1), click “Phone numbers”, and enter the first phone number. Then click Add, and click OK.

Step 5: Select IINWANNT(ISDN2), click “Phone numbers”, and enter the first phone number. Then click Add, and click OK.

Step 6: You are now ready to make 2B connection with server. Please ensure that your ISP or remote server does support 128K MLP and the function has been enabled for you by the remote server.

### **Accessing the Outside World over Dial-Up Networking**

After configuration, you are ready to make a connection with your server. Double click the Dial-Up Networking icon, select the name configured above in the phone book entry, and click “Dial”. The system will dial and connect to your ISP at either 128k or 64k depending on your setup. The server will verify your login name, password, and register you on the server.

When double-click the small icon of Dial-Up Networking at Windows taskbar, the Dial-Up Networking Monitor will show the connection status including connection speed, server type, etc. You are able to use the Internet tools to access the Internet or network tool to access remote network.

With problems after connecting such as the line is dropped or you cannot access the Internet/ remote network, please review your network settings with your ISP or network administrator.

### 3.4 Software Installation for Windows 2000

#### **Installing and Configuring the Drivers:**

- ⇒ After hardware installation, power on your computer and start Windows 2000. Windows 2000 should auto-detect a new device and requests for its driver. Click “Next”.
- ⇒ Select “Search for a suitable driver for your device”, and click “Next”.
- ⇒ Insert the provided CD into appropriate disk drive
  - Option 1: For ISDN PCI card, run the ISDNLINK.INF file from the subdirectory \CARD\WIN2K from the installation CD.
  - Option 2: For ISDN PCMCIA card, run the ISDNLINK.INF file from the subdirectory \PCMCIA\WIN2K from the installation CD.
  - Option 3: For ISDN USB TA, run the ISDNLINK.INF file from the subdirectory \USB\WIN2K from the installation CD.
- Windows 2000 will auto-process the necessary installation steps. Follow the onscreen instructions to complete the installation. After installation, you need NOT to reboot system.
  
- ⇒ A small icon for providing the ISDN monitor (log), ISDN line test tool and driver configuration functions will appear in the system tray. If you do not see the small icon, you may run the LINKSTS.EXE program (enclosed in installation CD).
- ⇒ With the cursor pointing to the icon, it will show application name, driver version, and the monitored ISDN adapter.
- ⇒ Right-click the small icon, there are 4 or 5 options in context menu, Configuration, Linetest, Log (ISDN monitor), and Exit. The detailed description is the same with WDM of Windows 98 section. Please refer it for more information.

#### **Network and Dial-up Connections**

- ⇒ Double-click “My Computer” → “Control Panel” → “Network and Dial-up Connections” → “Make New Connection”, and then click “Next”.
- ⇒ Select the Network Connection Type ( for example, Dial-up to private network), and click “Next”.
- ⇒ Select one from the three options according to your status and click “Next”.
- ⇒ Enter the phone number (the information should be provided by your ISP), and click “Next”.
- ⇒ When prompted to choose Connection Availability, choose one and click “Next”.
- ⇒ Type the name for this connection, and click “Finish”.
- ⇒ Enter User Name and Password (the information is provided by your ISP), and click “Dial”.
- ⇒ Wait for verifying username and password and registering your computer on the network.
- ⇒ When the connection is complete, there appears a connection icon in the system tray.
- ⇒ You can monitor the status of connection by double-click the connection icon.

Enjoy the Internet resource with ISDN super speed!!!