



# ***BT Digital Access USB***

User Guide for Windows XP Home  
and Windows XP Professional

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## Foreword

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### Characteristics of the BT Digital Access USB

The BT Digital Access USB is an ISDN *Hot Plug & Play* adapter designed to be used with computers equipped with USB ports and Windows 98, Windows Me, Windows 2000 Professional, Windows XP Home or Windows XP Professional.

The BT Digital Access USB can also be used with Mac OS. For more information relative to using the equipment in this environment, please consult the documentation **User Guide for Mac OS**.

The BT Digital Access USB allows you to establish a connection at 64 or 128kbps (such as an Internet connection) or with two sites simultaneously (at 64kbps). The D channel is part of the service that manages the ISDN signalling.

The BT Digital Access USB features a virtual communication port, which allows any communication software to control the adapter. It includes modem software for faxes up to 14.4kbps, hands-free telephony, and file transfers using the V.32bis and V.32 protocols which are compatible with analogue modems.

It includes a CAPI 2.0 driver for software using this standardised ISDN interface.

The BT Digital Access USB complies with the NDISWAN specifications for using Microsoft **Dial-Up Networking** which is used to access the Internet.

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### Knowledge required

In this User Guide, we assume that you are already familiar with the Windows XP user interface, commands and utilities. If necessary, please refer to the Windows manual or the Windows on-line help. The illustrations in this guide are based on a standard Windows XP installation.

Prior knowledge of telecommunications is not necessary when using the BT Digital Access USB and its manual. However, basic notions about ISDN and the Internet would be helpful.

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### Technical documentation

This Guide contains practical information to help you install and use the BT Digital Access USB under Windows XP Home or Windows XP Professional. For the purpose of this document, these operating systems are referred collectively to as 'Windows XP'.

If you use the BT Digital Access USB with Windows 98, Windows Me, Windows 2000 or with Mac OS, please consult the User Guides for these systems provided on the CD-ROM.

Electronic documentation in PDF format is provided on the BT Digital Access USB CD-ROM; notably:

- The **User Guide for Windows XP** (this manual);
- The **User Guide for Windows 2000 Professional**;
- The **User Guide for Windows 98 and Windows Me**;
- The **User Guide for Mac OS**;
- A set of **Frequently Asked Questions** (FAQs);
- An installable version of **Adobe Acrobat** to view the documentation.

To view and/or print the document(s), proceed as indicated below:

1. Insert the BT Digital Access USB CD-ROM in the computer. The document viewer program starts automatically, if permitted by the computer's configuration. If the document viewer does not start automatically, you can start it by selecting **Start->Run** and typing **D:\btsetup**, where 'D' represents the CD-ROM drive.
2. Click on the document you wish to consult (the file opens automatically).
3. You can then view the document on screen or choose to print the file.

After the software has been installed, this User Guide can be accessed from the **Start** menu using **Start->All Programs>BT Digital Access USB>User Guide**

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## Technical Support

This User Guide contains practical information that will help you to install and use the BT Digital Access USB. We hope that it will allow you to get up and running quickly and simply.

However, should you experience trouble with the installation, please first consider the points below:

- If you are not sure that you have correctly carried out the installation, do not hesitate to uninstall the BT Digital Access USB drivers (see page 18), and to repeat the installation from the beginning.
- Consult the "Frequently Asked Questions" (FAQs) document on the CD-ROM. See the previous section, "Technical Documentation", for details on how to view/print this document.
- Refer to the "Identifying and Solving Problems" chapter on page 47. If you still can't solve the problem using this chapter, don't worry. Carefully note what you are doing and what happens. Then contact the appropriate Helpdesk, as outlined in your Welcome Pack, and provide them with this information. They will either assist you directly or put you in contact with the appropriate department to help you.

## CAPI 2.0 Interface

The BT Digital Access USB software includes CAPI 2.0 drivers. This is important when you want to access certain ISPs. Other software such as video telephony, ISDN fax etc. also use CAPI drivers.

### Have you connected your computer to an ISDN or BT Highway line before?

If you have, there could be a compatibility issue if you install BT Digital Access USB software on a computer that already has an ISDN adapter installed. (An adapter may be an ISDN terminal adapter, PCI card, PC card or PCMCIA card.)

You can find out if you have one of these devices installed by using the “**Check for another adapter**” button in the BT Digital Access USB Document Viewer. This check will advise you if it finds an adapter with CAPI drivers already installed. The document viewer should start automatically when you insert the CD into the PC. If it doesn't, click **START→RUN** and then type **d:\btsetup** (where *d* represents the drive letter of your CD-ROM drive) and press **Enter**.

If the check indicates that the CAPI drivers are present on your PC then either:

**do not install** the BT Digital Access USB software as we **recommend** that you use the existing ISDN adapter in preference

or

**you must uninstall** and **unplug/remove** the existing ISDN adapter (following the manufacturer's instructions) **before** installing the BT Digital Access USB software

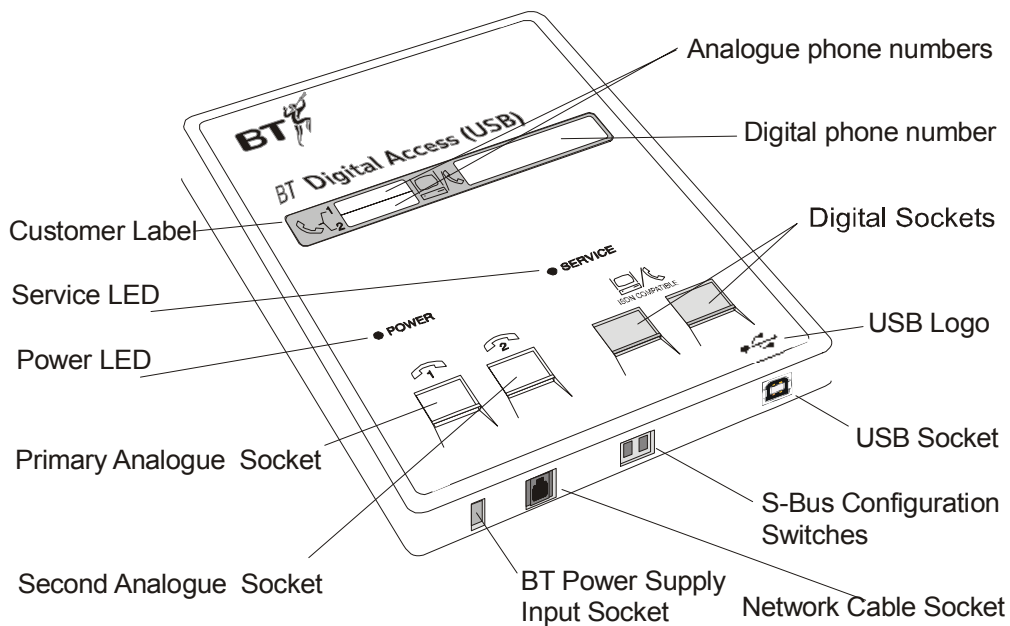
*Note: If you believe you have uninstalled your ISDN adapter but the check indicates otherwise, it may be that the uninstall process did not complete successfully. Please refer to your ISDN adapter instructions.*

# The BT Digital Access USB



If you already have an ISDN device (e.g. Terminal Adapter, ISDN card etc.) installed on your PC, we recommend you continue to use this in preference to the BT Digital Access USB. If you choose to use the BT Digital Access USB, please refer to the “CAPI 2.0 Interface” in the User Guide on the CD on page 41 before connecting your USB cable.

Before starting the installation check that your BT Digital Access USB service is operational by listening for dial-tone on a telephone plugged into one of the analogue (white) sockets. Exit any open applications (after saving any data) on your computer.

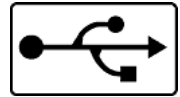


**Please follow the installation steps specified in this user guide.**

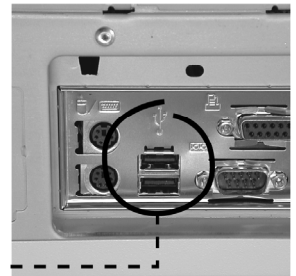


# Installing the BT Digital Access USB Software

1. With your computer switched on, insert the BT Digital Access USB Installation CD into your CD-ROM drive. After a few seconds you will see the BT Digital Access USB Document Viewer. If the document viewer doesn't start automatically then click **START→RUN** and type **d:\btsetup** (where *d* represents the drive letter of your CD-ROM, you may need to use an alternative) and press **Enter**.
2. If you haven't already done so, check for previously installed ISDN Adapters. You can also access all User Guides from here. After you have checked for other ISDN adapters and you are ready to proceed with the installation, click on the **Close** button.
3. If you have decided to continue with the installation of the BT Digital Access USB software, connect your computer to the BT Digital Access unit. You should not switch off the computer when you connect the BT Digital Access USB to it. Your USB cable can be identified by the connectors at each end which have the USB logo marked on them, (see right).
4. Plug the connector with the square end into the USB socket of the BT Digital Access USB unit. The USB socket is on the bottom edge of the BT Digital Access unit on the right-hand side. The socket is aligned with the USB logo on the front of the case. The connector is plugged in with the USB logo on the cable visible (i.e. facing towards you).
5. Connect the other end of the USB cable with the flat connector to one of the computer's USB sockets. The picture opposite shows a typical double USB socket on a PC, but it can vary from computer to computer. For example, portable PCs tend to have only one socket, and some desktop PCs have the USB sockets on the computer monitor. *Note: You can also connect the BT Digital Access USB unit to a hub connected to your computer.*

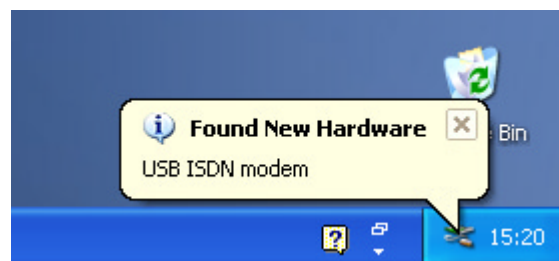


**Back panel of the PC**



**USB sockets**

A message is displayed to indicate the device has been detected.

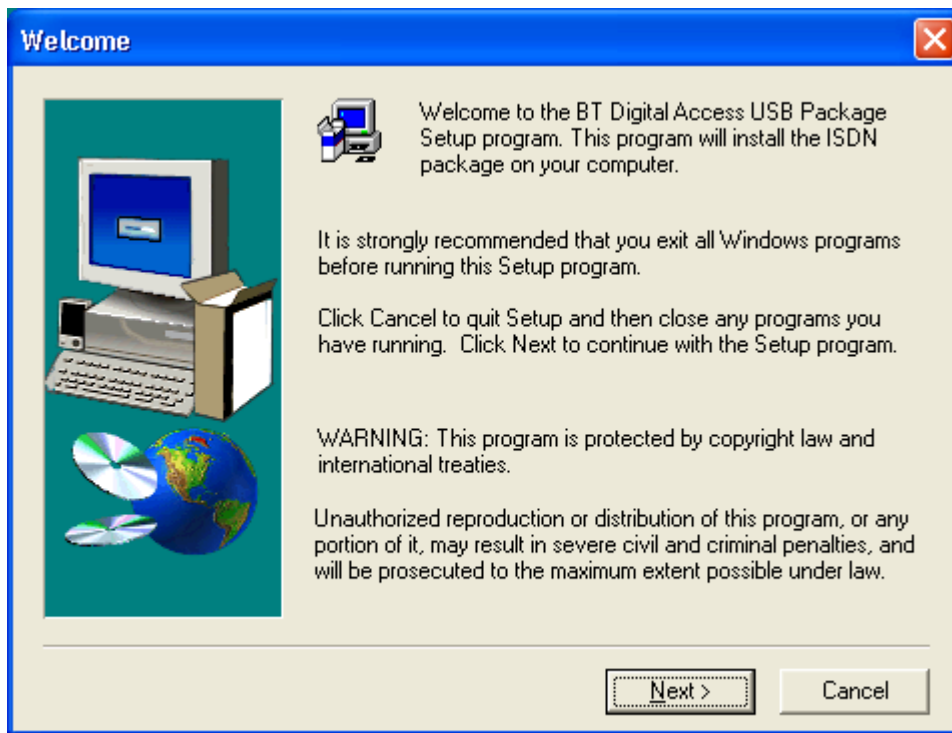


Once you have connected your computer to the BT Digital Access USB unit, with a USB cable, the second stage of the installation process is initiated automatically. This stage installs the BT Digital Access USB drivers onto your computer.

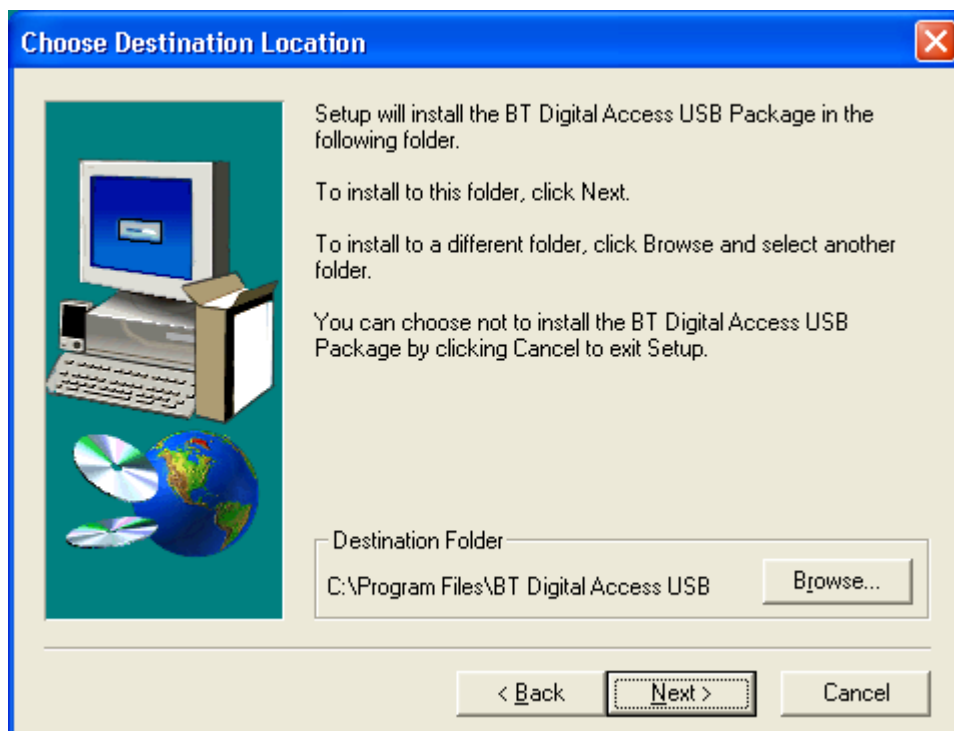
The **Found New Hardware Wizard** is automatically launched when you connect to the BT Digital Access USB for the first time.



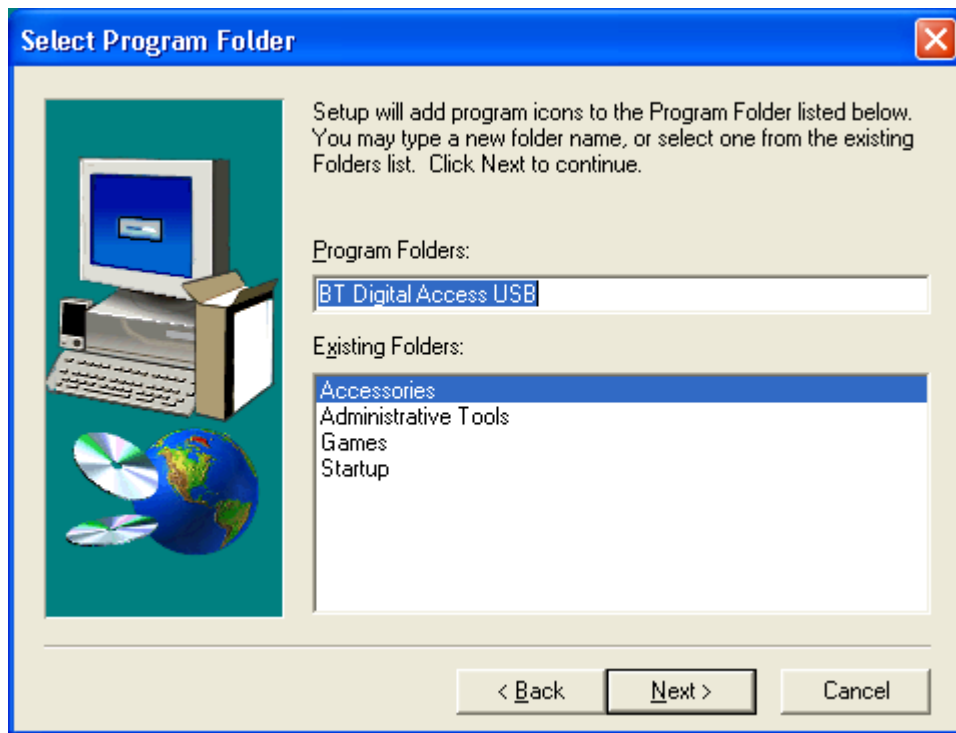
- When you see this screen, insert the BT Digital Access USB Installation CD into your CD-ROM drive, if not already there. The document viewer may start – if you don't need to access a User Guide then it can be closed (by clicking the CLOSE button) without affecting the installation.
6. Confirm that 'Install the software automatically (Recommended)' button is selected and click **Next** to continue. This will install the hardware and the BT Digital Access USB package setup program will now begin.



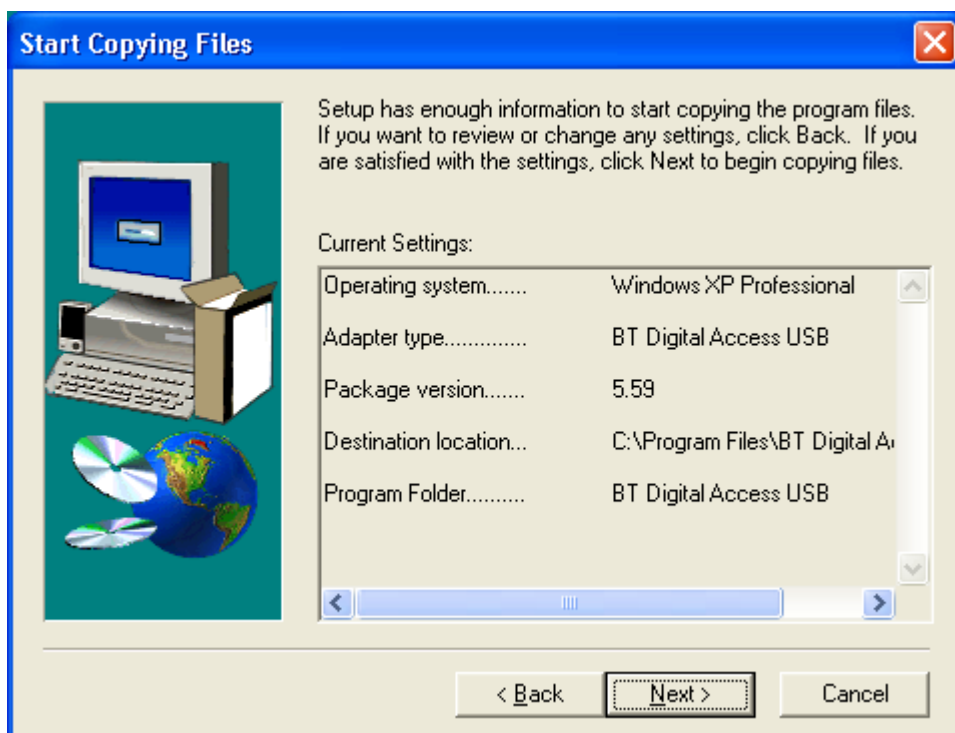
7. Click **Next** to continue.



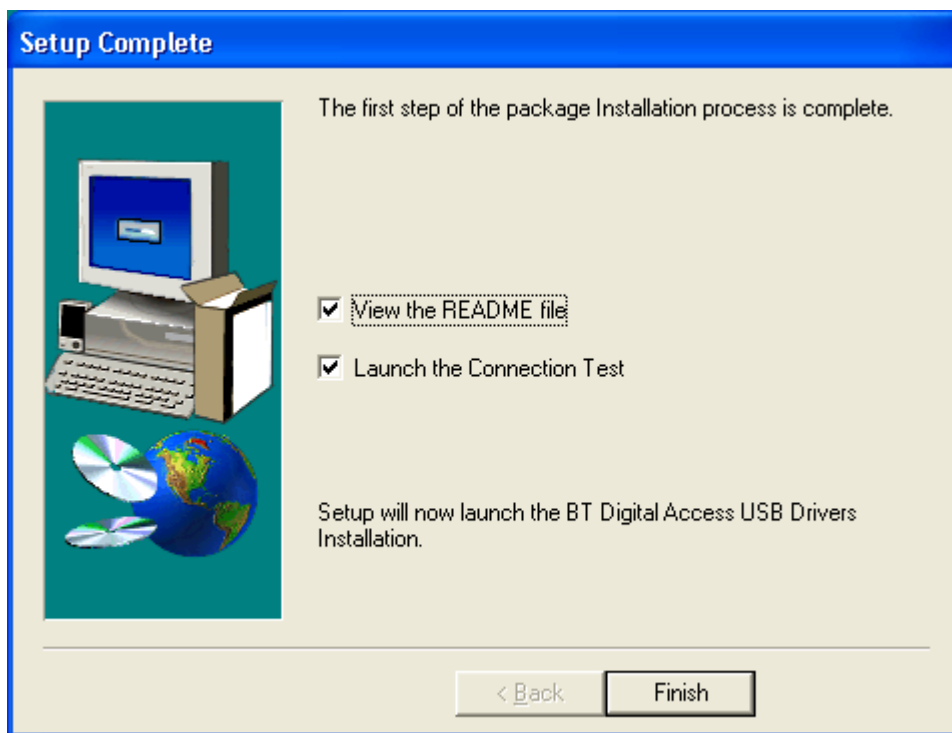
8. To install the BT Digital Access USB package into the default directory (recommended), click **Next**. To install elsewhere, click **Browse**.



9. To install the BT Digital Access USB package into the default Program Folder (recommended), click **Next**, or type an alternative name for the Program Folder and then click **Next**.



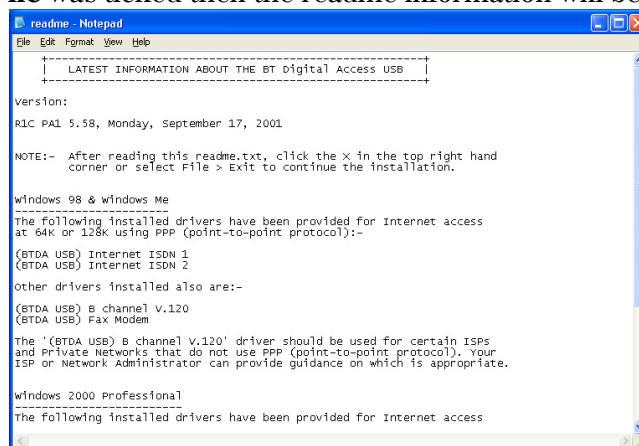
10. Click **Next** to begin copying the necessary files.



11. To read the latest product information prior to release, leave the **View the README file** ticked. Leave the **Connection Test** ticked to test that the installation was successful, by making an outgoing call using the Digital Access USB device.

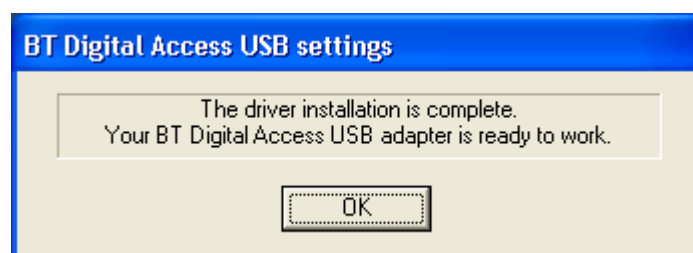
Click **Finish** and the installation will copy files and configure the system

If the **View Readme File** was ticked then the readme information will be displayed :

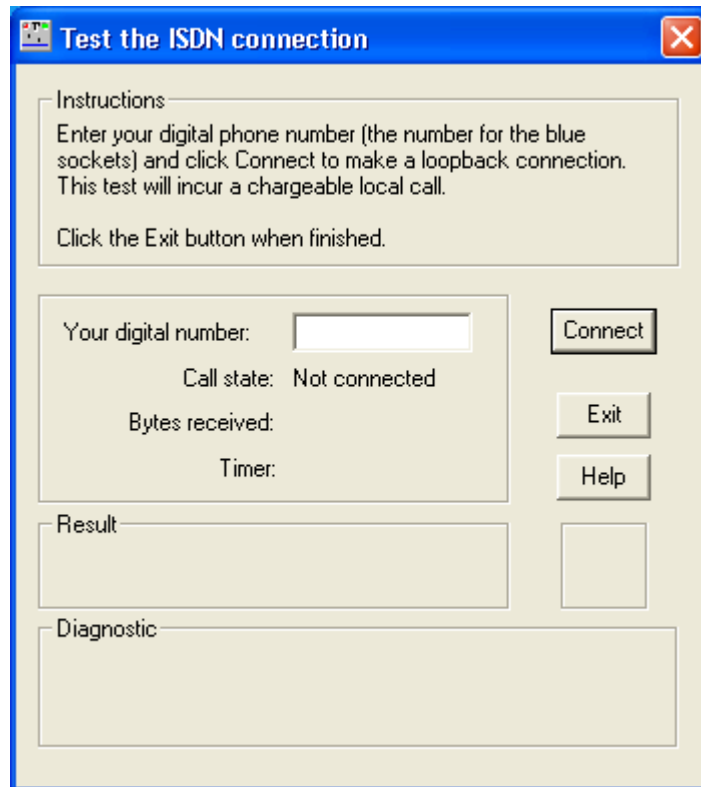


12. After reading the Readme.txt, click the **X** in the top right hand corner or select **File, Exit** to continue the installation.

The installation program will copy files, configure the system and will momentarily display messages and will finish with the following screen.



13. Click **OK**. If the **Connection Test** was ticked during the installation, the following will appear: -



14. Enter your digital phone number (the number for the blue sockets) and click connect to make a loopback connection. Additional information on the test is given in “Configuration Function Check” on page 19.

If the test is successful, a smiley face will appear - the BT Digital Access USB has been successfully installed. If the test is unsuccessful, an unhappy face appears. If this happens, first check that the digital phone number has been correctly entered and try again. If this does not help, click the **Help** button on the Loopback Test – the ‘List of ISDN Disconnect Reasons’ gives the likely causes of common problems.

Click **Exit** to exit from the Connection Test.

Once the installation procedure has been successfully completed, the BT Digital Access USB will be operational. You can now set up your Internet connection (see “Introduction to Internet Connections” on page 20).

## Installation Summary

You have just installed the BT Digital Access USB, its software and drivers. The adapter is now operational, and you can define the initial settings and set up your Internet access. However we recommend you read to the end of this chapter first, to make sure you are familiar with the new software installed on your PC.

## Software Installed

For your information, these are the main changes that have occurred in your configuration after installing the BT Digital Access USB:

1. In the **All Programs** submenu in Windows' **Start** menu, a **BT Digital Access USB** folder has been created (see below). This group contains the shortcuts to the BT Digital Access USB's program tools.



- **B and D channels tracer:** allows you to view or save in text format the last events that occurred on the D channel (the call set-up and monitoring channel) as well as data packets transmitted on the B channel (this facility is intended for technicians, and may be useful should you need to contact technical assistance).
- **Connection log viewer:** provides overall statistics and a detailed record of all connections sent or received (correspondent, time, duration, etc.).
- **Connection test:** tests the operation of the BT Digital Access USB. This is the loopback test you may already have carried out (see “Configuration Function Check” on page 19).
- **Display panel:** displays the status of exchanges between the BT Digital Access USB adapter and the ISDN network at any given time, enabling you to identify and solve issues (see “Identifying and Solving Problems” on page 47). This tool also has a help facility.
- **Read me:** indicates any changes that may have occurred since the User Guide was published. We recommend that you print and read it.
- **Settings:** configures the BT Digital Access USB ISDN address (see “Configuration of the ISDN address” on page 42), selects and adjusts the ISDN communication port (see “ISDN Communication Port Settings” on page 37), modifies the default profiles, installs/uninstalls the ISDN drivers, adjusts the sound of the associated telephony feature (see “Sound” on page 45) and displays configuration information. This tool includes a help facility.

- **User Guide:** provides access to this document.
- **Uninstall the BTDA USB Package:** uninstalls the BT Digital Access USB software from your computer.

2. A BT Digital Access USB icon has been added to the System tray (see below).



**BT Digital Access USB icon**

The BT Digital Access USB icon changes to indicate the status of the line, with a green dot indicating that a USB call is in progress, and a red dot indicating that data is being transmitted. By double-clicking on the icon you can start the Display Panel (see above). An explanation of the different icon images is given in “BT Digital Access USB Icon” on page 17.

3. Hardware devices have been added to your system. In order to see them, click on **Start→Control Panel, Performance and maintenance, System, Hardware** tab and on the **Device Manager** button.

- **ISDN drivers** have been added. If you select this, you will see one device: **BT Digital Access USB**.
- Two other devices have also been added: **ISDN driver** and **ISDN CAPI 2.0 driver**. These devices are normally hidden. In order to see them, open the **View** menu and select **Show hidden devices**. The **Non-Plug and Play Drivers** type appears. If you deploy it, the two devices will be visible.
- In the Network adapters, the **BT Digital Access USB** has been added.
- Two **ISDN communication ports (COMn)** have been added to the **Ports (COM & LPT)** type.
- The **(BTDA USB) Fax Modem and (BTDA USB) B channel V.120** have been added under **Modems**. The fax modem is a virtual modem associated with the ISDN communication port; it is used to manage the following protocols: V.17, V.21, V.23, V.27 ter, V.29 for the fax, and V.32 and V.32 bis for data transmission with the modem. The V.120 virtual model is used for certain ISPs which do not support PPP access.

*Note: other virtual modems can be added (see “ISDN Communication Port Settings” on page 37).*

4. A **BT Digital Access USB** folder has been created on your hard drive, in the **Program Files** folder. This folder contains all the files necessary for the functioning of the BT Digital Access USB. You will never need to access this folder directly. Make sure that you do not move it or modify its name or contents as this could compromise the functioning of the BT Digital Access USB.

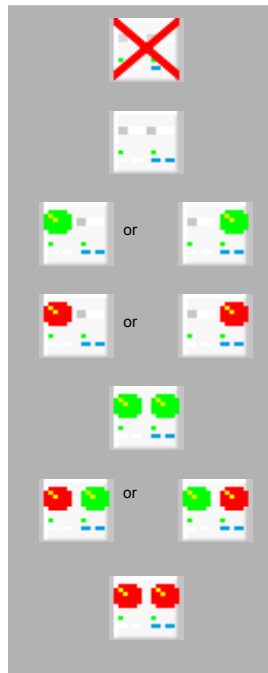


## BT Digital Access USB Icon

The BT Digital Access USB software includes an icon in the Windows system tray which indicates the status of the drivers and the Digital Access line. The icon represents the BT Digital Access USB unit and changes to indicate that calls are being made.

Note that the icon does not indicate whether any calls are being made from the analogue phones or other ISDN Terminal Adapters (TAs).

*Note: When two channels are in use it may be that they are both being used for the same connection, e.g. a bonded 128kbps Internet connection or a two channel videophone call, or it could be that two separate, simultaneous calls, e.g. a fax transmission and a 64kbps Internet connection are in progress.*



BT Digital Access USB cable is unplugged

BT Digital Access Drivers are working – no calls in progress

One call is in progress.

One call is in progress and data is being transmitted.

Two channels are in use.

Two channels are in use and data is being transmitted on one.

Two channels are in use and data is being transmitted on both

## Disabling/Enabling the BT Digital Access USB Icon

The icon can be enabled/disabled from the **Options** tab of **ISDN Display** program. Select **Start** → **All Programs** → **BT Digital Access USB** → **Display Panel** and then click on Options. If the 'Keep an icon in the task bar' box is ticked then the icon will be displayed, and if it is left clear then it will not.

## Uninstalling the BT Digital Access USB Software



Before uninstalling the BT Digital Access USB software, please ensure that all other users of the PC have logged off. This will prevent any programs they are running from interfering with the uninstall, and also will avoid the risk of them losing unsaved data when the computer is restarted at the end of the uninstall process.

Should you have to remove the BT Digital Access USB software, unplug the USB cable, click on **Start →All Programs→BT Digital Access USB→Uninstall the BTDA USB Package**. This will lead you through a complete uninstallation of all of the drivers. After this has completed you will need to reboot your computer.

Occasionally, the uninstall process will report that it cannot delete the BT Digital Access USB folder. This happens if it finds any additional files in the folder, for example saved traces from the B and D Channel Tracer. You can then choose to delete the files and directory manually using Windows, or to leave the files as they are.

# Configuration Function Check

The Configuration Function Check allows you to check that your configuration (computer, BT Digital Access USB device, and digital line) is operational and that digital calls can be made and received. The method used by this tool is simple: since your line has two channels, the BT Digital Access USB uses one of the channels to transmit a call, which it will receive on the other channel. For this reason it is called a 'loopback test'.

*Note:*

- *To check the configuration you must have no other calls in progress on the line – incoming or outgoing.*
- *If the connection is successful, you will be billed for one local call charge unit.*

The test is carried out as follows:

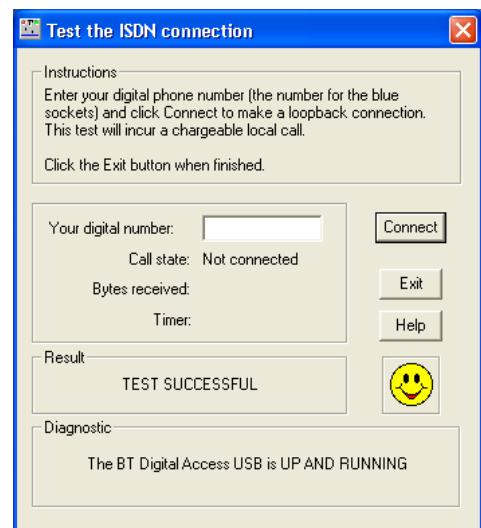
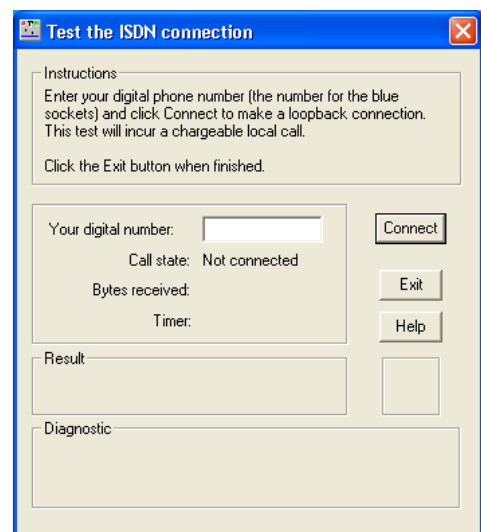
1. Click on **Start→All Programs→BT Digital Access USB→Connection test**. The Test the ISDN connection window is shown here:

2. Type in your digital phone number. This is the number associated with the blue sockets on the BT Digital Access USB box.

Click on the **Connect** icon. The timer displays a countdown. The connection should be made and bytes are transmitted over the line.

3. When the timer reaches zero, the test result and the diagnostic are displayed. If the digital configuration is operational the displayed test result will be "TEST SUCCESSFUL".

4. Click on **Exit** to exit.



*Note: if the test fails, take a note of the diagnostic message which indicates the reason for the failure. Click on the Help button to check the diagnostic message against the "List of ISDN Disconnect Reasons". If necessary, refer to the "Identifying and Solving Problems" chapter on page 47. The test will fail if the digital phone number has been typed incorrectly.*

# Introduction to Internet Connections

This chapter provides guidance on accessing the Internet using your BT Digital Access USB.

The connection test confirms that the BTDA USB Software is working – the next step is to configure the computer to connect to the Internet. For this you need an account with an Internet Service Provider (ISP). There are differences in the way that ISPs expect their users to configure their computers – the USB software supports most, if not all, of these, so if you experience problems you should contact your ISP for advice.

What you need to do depends on whether you already connect to the Internet from your PC, or whether you are a new Internet user.

- If you are a new Internet user then you should follow the instructions given by your ISP – most provide a CD that configures the computer for you. If you don't have an ISP yet then there are plenty to choose from – many advertise in magazines or on TV, and others give away CDs. When your ISP software asks you to select which modem to use the choice depends on the way that they configured their service. Choose either **ISDN channel (BTDA USB) Internet ISDN** if the ISP supports PPP, **Modem - (BTDA USB) B channel V.120** if the ISP only supports V.120, or anything that includes 'ISDN' if you are not presented with the above choices.
- If you already use a modem to connect to the Internet from your computer then you can either change your dial-up to use the BTDA USB, or create a new one. The new dial-up can be created manually (see the instructions later in this chapter), or can be created by re-running the ISP CD (see above).

---

## Changing a Dial-up to Use BT Digital Access USB

Before changing anything contact your ISP (either the support page on their web site or their help-line) to find out what settings are needed for ISDN access. Most ISPs use the same phone number for modem and ISDN access, but some require a different number. Some support 128kbps access whereas others only support 64kbps.

If your ISP uses Windows Dial-up Networking for their Internet access then you can change the necessary settings by right-clicking the dial-up icon in the Network Connections folder and selecting **Properties**. (*Click on Start→Connect To→Show all connections to open the Network Connections folder*). If your ISP uses an alternative method to access the Internet then they will normally provide a settings area in which you can change the configuration – if in doubt, ask your ISP for help.

---

## Creating a new Dial-up

If your ISP uses Windows Dial-up Networking to access the Internet then you can use the following instructions to set up a new dial-up. You will need to know the settings that your ISP requires before you start. You should then set up your Internet Browser to use this new dial-up (refer to the browser's help information if you need guidance on how to do this).

These guidelines are provided for both a single channel 64kbps connection and a bonded channel 128kbps connection.

The more detailed guidelines that follow are for Internet connections made using Windows Dial-up networking in PPP (point-to-point protocol) or V.120. If your ISP uses a connection method other than Windows Dial-Up networking please contact them for advice.

To make an Internet connection, the BT Digital Access USB NDISWAN miniport network driver must be installed. This is installed by default when you load the BT Digital Access USB software. However, if you are in doubt about the installation of this driver, refer to “Drivers” on page 44.

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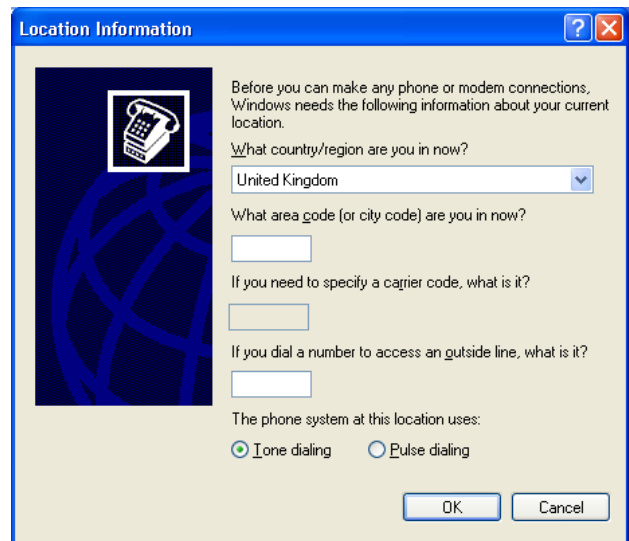
## Internet Connection at 64kbps or 128kbps

The following provides more detailed guidelines on setting up a new Internet connection using BT Digital Access USB. The first time you set up an internet connection Windows XP will start by asking for the location information for your computer.

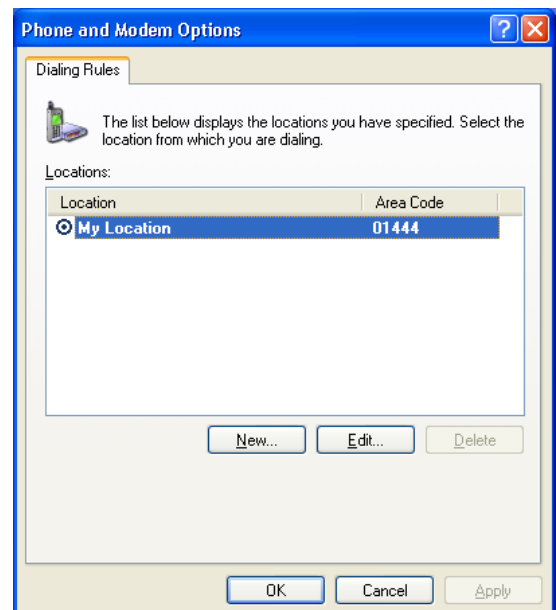
1. Click on **Start → All Programs→Accesories→Communication→New Connection Wizard**

2. Either The **New Connection Wizard** will appear (in which case please jump to step 4), or the **Location Information** window will appear (see right).

Enter the area code part of your phone number in the **area code** box and click **OK**.



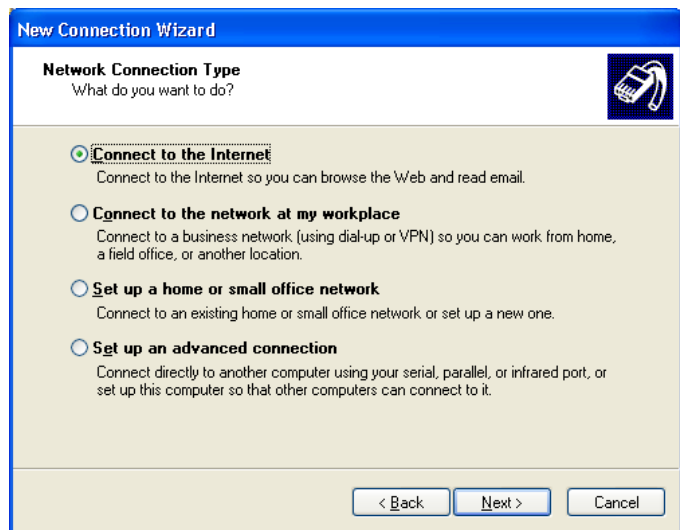
3. The **Phone and Modem Options** window will appear. Click **OK**



4. On the **Welcome to the New Connection Wizard** click **Next**.

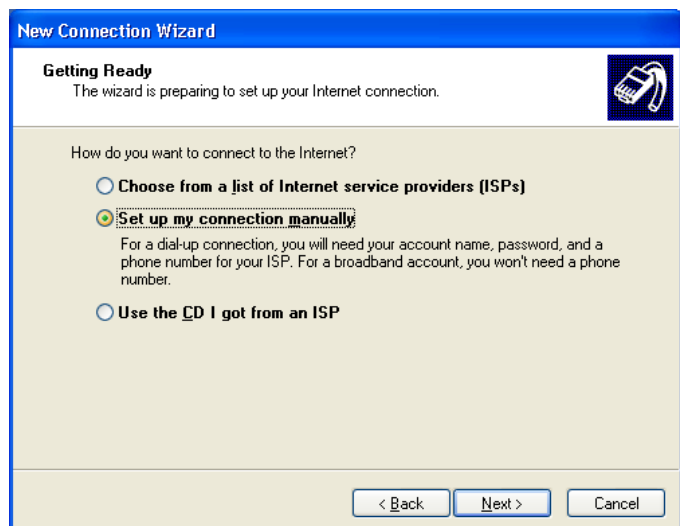


5. Select **Connect to the Internet** type, and then click on **Next**.

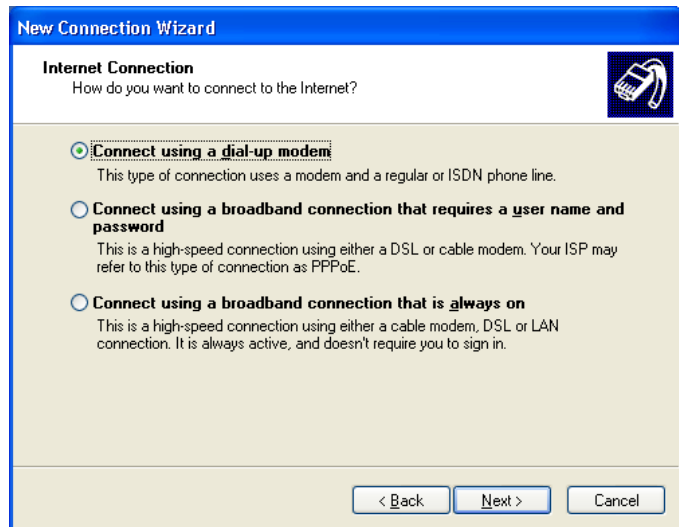


6. Select **Set up my Connection Manually** and click on **NEXT**

The information you need for this (e.g. phone number to dial, username, password, etc) will have been provided to you by your ISP. You will need this information to hand.

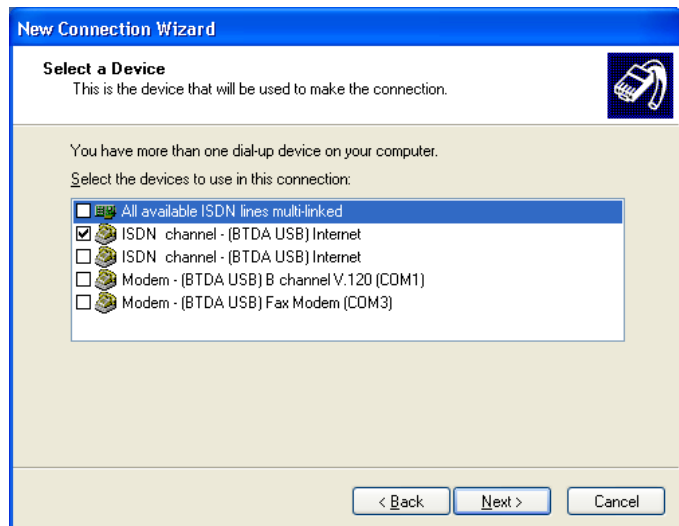


7. Select **Connect using a dial-up modem**, and then click on **Next**.



8. In the **Select a Device** window deselect **All available ISDN lines multi-linked** by clicking in the box if it is ticked.

If your ISP supports PPP access (which most do) select the first **ISDN Channel (BTDA USB) Internet** (by clicking in the box so a tick appears) for a single channel 64kbps connection (ISDN speed for accessing the Internet or a remote network). For a 128kbps connection select both **ISDN Channel (BTDA USB) Internet** devices by clicking in each box so a tick appears.



If your ISP supports only V.120 access then select the **Modem – (BTDA USB) B channel V.120** device by clicking in the box so a tick appears (only 64kbps access will be possible in this case).

*Note: do not select (BTDA USB) Fax Modem, this is not necessarily a good option for an Internet connection, since this modem will only allow a connection at 14.4kbps.*

*Notes on 128kbps connections:*

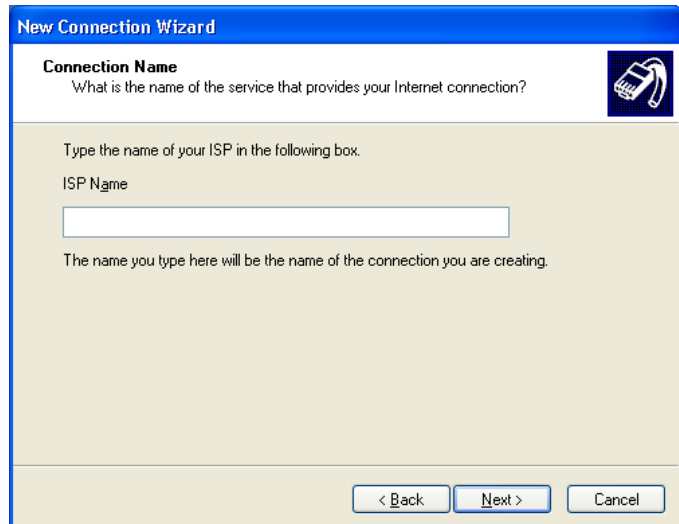
- *A 128kbps connection can only be made if the remote access server that you are dialing into supports it.*
- *When making a 128kbps connection, you are making two calls, and hence you will be billed for two calls.*
- *As both available channels of your line are being used, you will not be able to make or receive other calls (a telephone call, for example). You may be able to rent a service from your telecom operator that allows the caller to leave a message if they contact you when your line is engaged on a 128kbps call.*

Click on **Next**.

9. In the **ISP Name** field enter a meaningful name by which you will refer to this connection in the future.

Click on **Next**.

This name plays no role in the actual connection. Its only purpose is to identify the file which is created on your system. You can therefore choose any name you like, though we recommend that you choose a name which will remain clear to you (such as the name of the ISP).

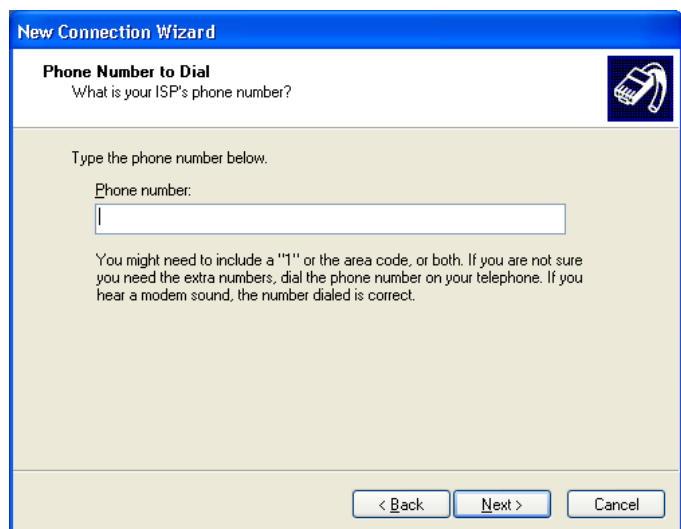


The screenshot shows the 'New Connection Wizard' window with the 'Connection Name' tab selected. The title bar reads 'New Connection Wizard'. Below the title bar, the tab is labeled 'Connection Name' with a subtitle 'What is the name of the service that provides your Internet connection?'. The main area contains the instruction 'Type the name of your ISP in the following box.' followed by a text input field labeled 'ISP Name'. Below the field, it says 'The name you type here will be the name of the connection you are creating.' At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

10. In the **Phone number** field, enter the number provided to you by your ISP.

The number should include the area code

Click on **Next**.



The screenshot shows the 'New Connection Wizard' window with the 'Phone Number to Dial' tab selected. The title bar reads 'New Connection Wizard'. Below the title bar, the tab is labeled 'Phone Number to Dial' with a subtitle 'What is your ISP's phone number?'. The main area contains the instruction 'Type the phone number below.' followed by a text input field labeled 'Phone number:'. Below the field, it says 'You might need to include a "1" or the area code, or both. If you are not sure you need the extra numbers, dial the phone number on your telephone. If you hear a modem sound, the number dialed is correct.' At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

11. In the **User name** field, enter the user name assigned by your ISP.

Enter your connection password in the **Password** and **Confirm password** fields. Click on **Next**.

*Note:* The wording used by the many ISPs can be different. The following expressions are also sometimes used to identify the user name: "login", "user id", "client account", "connection identifier", etc.

When you enter your user name and password, do not forget that these are case-sensitive, ie. you must use uppercase, lowercase, or a mixture as given by the ISP.



The screenshot shows the 'New Connection Wizard' window with the 'Internet Account Information' tab selected. The title bar reads 'New Connection Wizard'. Below the title bar, the tab is labeled 'Internet Account Information' with a subtitle 'You will need an account name and password to sign in to your Internet account.' The main area contains the instruction 'Type an ISP account name and password, then write down this information and store it in a safe place. (If you have forgotten an existing account name or password, contact your ISP.)' followed by three text input fields: 'User name:', 'Password:', and 'Confirm password:'. Below these fields are three checked checkboxes: 'Use this account name and password when anyone connects to the Internet from this computer', 'Make this the default Internet connection', and 'Turn on Internet Connection Firewall for this connection'. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.



12. The final window of the **Internet Connection Wizard** appears.

Click on **Finish**



## Establishing the connection

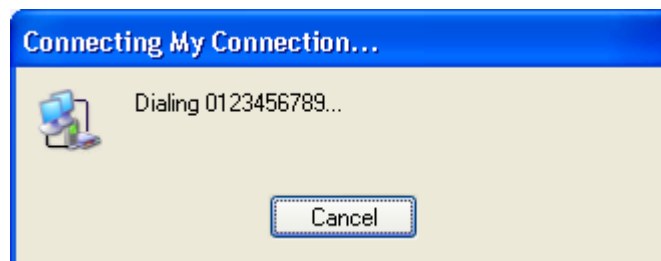
1. Click on the connection which you have created (click **Start** → **Connect To** → **the name of the connection you created**). The corresponding connection window opens:

2. The system will remember your user name. If you do not want to have to enter your password each time you establish a connection, check the **Save Password** box.

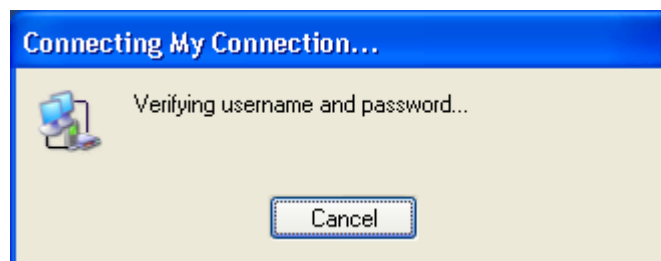
*Note: If Save Password is selected it will allow any person who gains access to your computer to connect to the Internet using your account.*



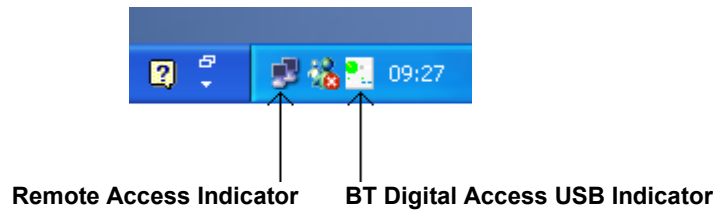
3. Click on **Dial** (you needn't worry about the other parameters). The system dials.



4. When the call is received by your ISP, your identification parameters are verified.

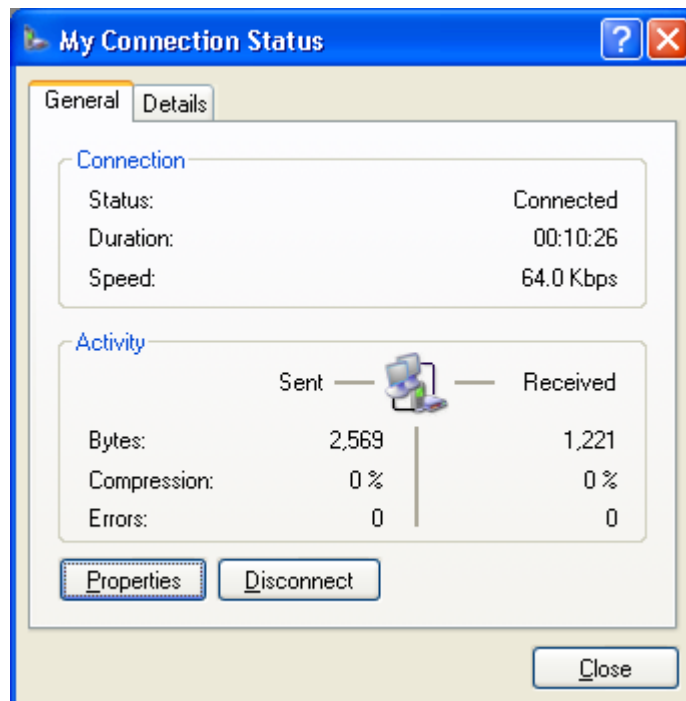


5. If the identification parameters have been entered correctly, the connection is established in just a few seconds. The window automatically closes. To the right of the task bar, the remote access indicator appears and the appearance of the BT Digital Access USB icon changes (see below).



*Note: if the connection fails, **Dial-up networking** displays a message which indicates the reason for the failure. You can refer to the cause number indicated in the BT Digital Access USB **Display panel** (see “Identifying and Solving Problems” on page 47 – the help facility explains the reason for the failure that is given).*

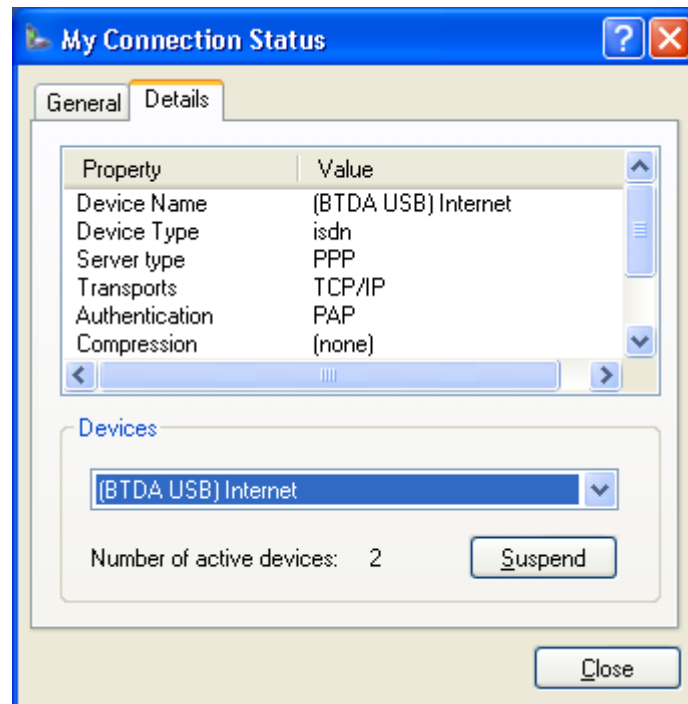
6. The two indicators in the task bar can be used to monitor the connection.
- The BT Digital Access USB icon shows the status of BT Digital Access USB. It displays one lighted dot per channel used (in this case, a single channel). The dot is red or green depending on whether data is being sent on the line at any given time. If you double-click on this indicator, the BT Digital Access USB Display panel opens (see “BT Digital Access USB Icon” on page 17 and “Identifying and Solving Problems” on page 47).
  - The Remote Access indicator shows the status of Dial-up Networking. It indicates whether or not a connection has been established. If you double-click on this indicator, a window opens showing the main connection parameters (speed, connection, duration etc.) A Disconnect button enables you to terminate your connection (see below).



## Changing between 64kbps and 128kbps

If you have set up the connection to be a 128kbps connection then you can change down to 64kbps during the connection and then back up to 128kbps, for example if you want to free a B-channel to make a phone call.

This feature is accessed from the **Details** tab of the **Connection Status** window (see below).



Click on the **Suspend** button to suspend one of the channels (i.e. reduce the speed to 64kbps), and then click on **Resume** to reconnect it (i.e. to return to 128kbps).

## Using the Connection

Once your connection has been established, you can use the Internet software of your choice. You can, for example, launch any browser you may have in order to access an Internet site.

## Ending the Connection

When finished, don't forget to end the connection. Closing your Internet browser may not automatically end the connection.

To end the connection, click on the remote access indicator using the right-hand mouse button (see previous page), and choose **Disconnect**.

*Note: If you forget, some ISPs automatically disconnect you after a certain period of inactivity.*

# Connection to a Private Network

You will need to read this chapter if you want to connect to a private network (such as a company Intranet) while using the standard Windows XP tools.

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## Connection to a Private Network

The connection is made using Microsoft **Dial-up Networking** with the PPP protocol at 64kbps or 128kbps or with the V.120 protocol at 64kbps.

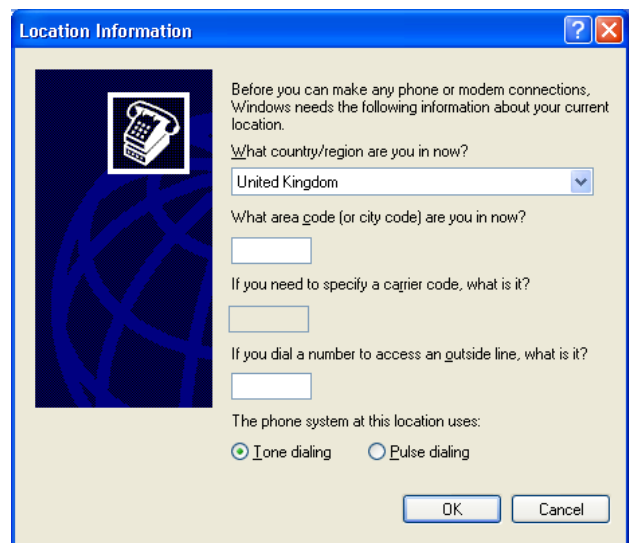
The BT Digital Access USB **NDISWAN miniport network driver** must be installed. This is installed by default when you load the BT Digital Access USB software. However, if you are in doubt about the installation of this driver, refer to “Drivers” on page 44.

*Note: As we will see in this chapter, it is also possible to connect to a private network from the **Dial-up Networking** with the V.120 protocol, using BT Digital Access USB's **Emulation of a communication port***

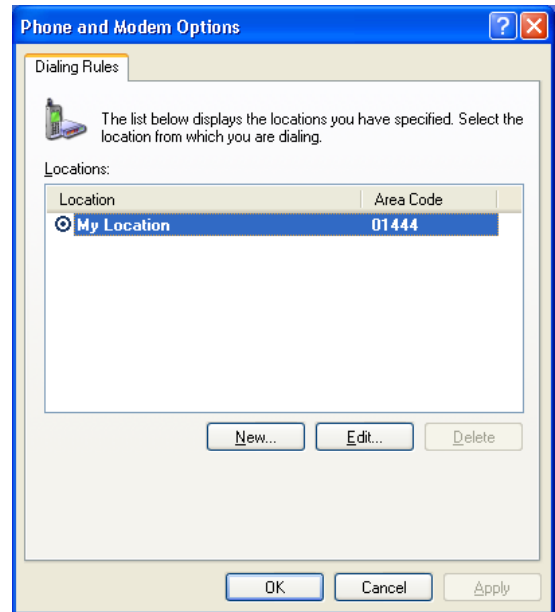
## Creating and Setting up a Connection

1. Click on **Start → All Programs→Accesories→Communication→New Connection Wizard**.
2. Either The **New Connection Wizard** will appear (in which case please jump to step 4), or the **Location Information** window will appear (see right).

Enter the area code part of your phone number in the **area code** box and click **OK**.



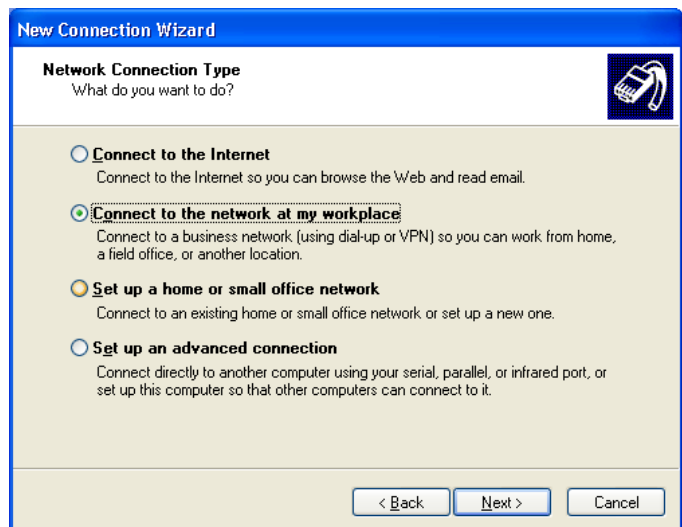
3. The **Phone and Modem Options** window will appear. Click **OK**



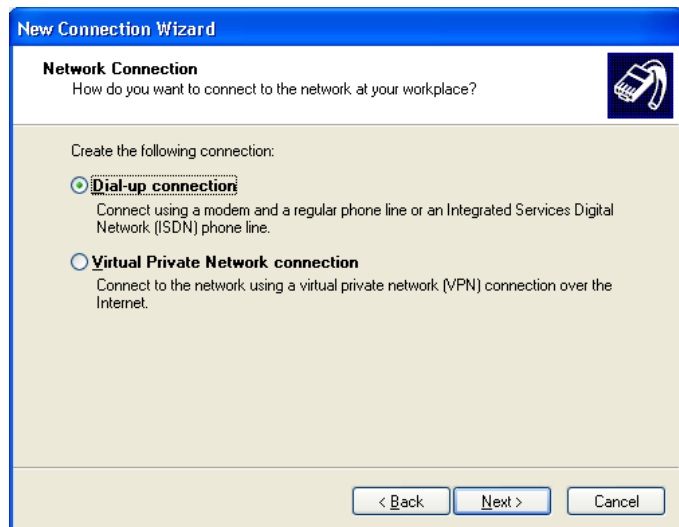
4. The **New Connection Wizard** will appear. Click on **Next**.



5. Select **Connect to the network at my workplace**, and then click on **Next**.



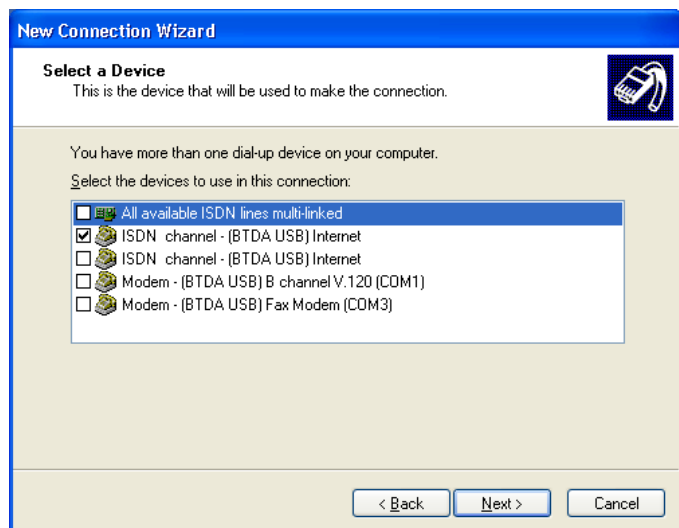
6. Select **Dial-up connection** and click on **Next**



7. In the **Select a Device** window deselect **All available ISDN lines multi-linked** by clicking in the box if it is ticked.

The device to select depends on the protocol(s) supported by the network you are connecting to. If you are in doubt about which to use you should contact your Network/IT manager for help.

If the network supports PPP access (which most do) select the first **ISDN Channel - (BTDA USB) Internet** (by clicking in the box so a tick appears) for a single channel 64kbps connection. For a 128kbps connection select both **ISDN Channel - (BTDA USB) Internet** devices by clicking in each box so a tick appears.



If your network supports only V.120 access then select the **Modem – (BTDA USB) B channel V.120** device by clicking in the box so a tick appears (only 64kbps access will be possible in this case).

*Note: do not select **(BTDA USB) Fax Modem**, this is not necessarily a good option for a network connection, since this modem will only allow a connection at 14.4kbps.*

*Notes on 128kbps connections:*

*A 128kbps connection can only be made if the remote access server that you are dialing into supports it.*

*When making a 128kbps connection, you are making two calls, and hence you will be billed for two calls.*

*As both available channels of your line are being used, you will not be able to make or receive other calls (a telephone call, for example). You may be able to rent a service from your telecom operator that allows the caller to leave a message if they contact you when your line is engaged on a 128kbps call.*

Click on **Next**.

8. In the Connection Name window enter the name for this connection.

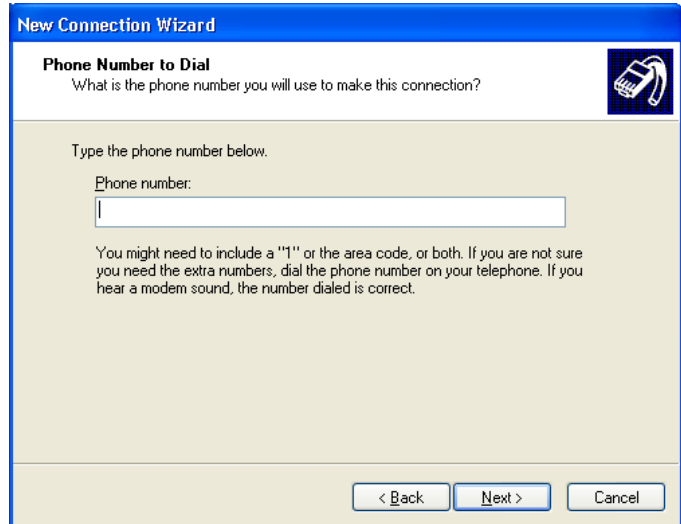
*Note: this name plays no role in the actual connection. Its only purpose is to identify the file which is created on your disk. You can therefore choose any name you like, though we recommend that you choose a name which will remain clear to you (such as the name of the company or network to which you are connecting).*

Click on **Next**.

9. In the **Phone number** field, enter the number provided to dial into your company network.

The number should include the area code.

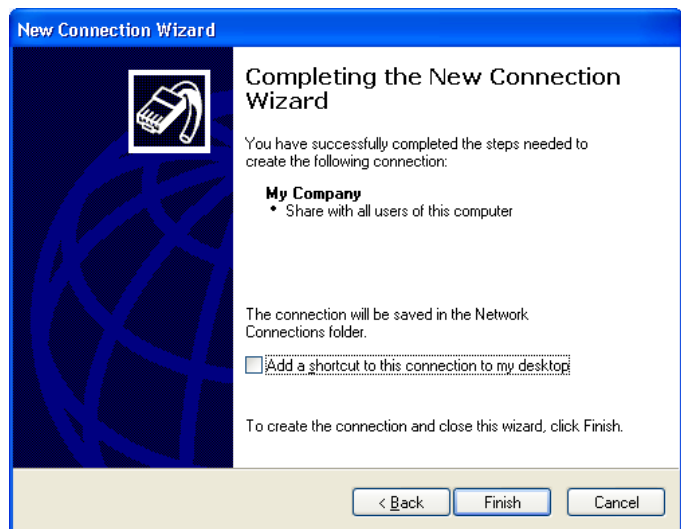
Click on **Next**.



The screenshot shows the 'New Connection Wizard' window with the title bar 'New Connection Wizard'. The main heading is 'Phone Number to Dial' with a subtitle 'What is the phone number you will use to make this connection?'. There is a small icon of a telephone handset in the top right corner. The text 'Type the phone number below.' is followed by a label 'Phone number:' and an empty text input field. Below the input field, a note states: 'You might need to include a "1" or the area code, or both. If you are not sure you need the extra numbers, dial the phone number on your telephone. If you hear a modem sound, the number dialed is correct.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

10. Click **Finish** to complete the wizard.

The connection window appears immediately.



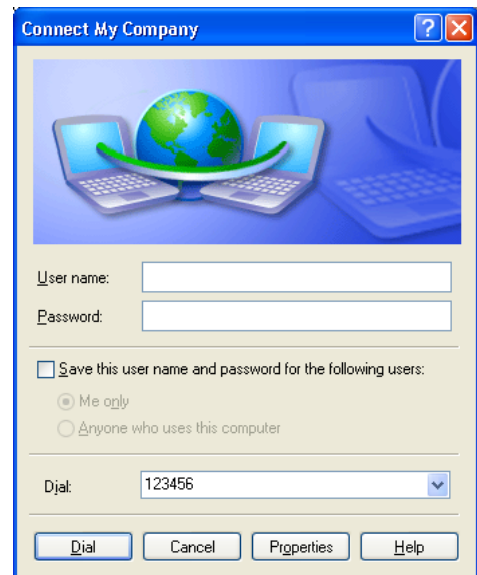
The screenshot shows the 'New Connection Wizard' window with the title bar 'New Connection Wizard'. The main heading is 'Completing the New Connection Wizard'. On the left, there is a large blue globe icon with a telephone handset icon overlaid. The text says: 'You have successfully completed the steps needed to create the following connection:'. Below this, it lists 'My Company' with a bullet point '• Share with all users of this computer'. Further down, it states 'The connection will be saved in the Network Connections folder.' and there is a checkbox labeled 'Add a shortcut to this connection to my desktop' which is currently unchecked. At the bottom, it says 'To create the connection and close this wizard, click Finish.' and there are three buttons: '< Back', 'Finish', and 'Cancel'.



11. In the **User name** field, enter the name assigned to you by the network administrator. Then enter your connection password in the **Password** field.

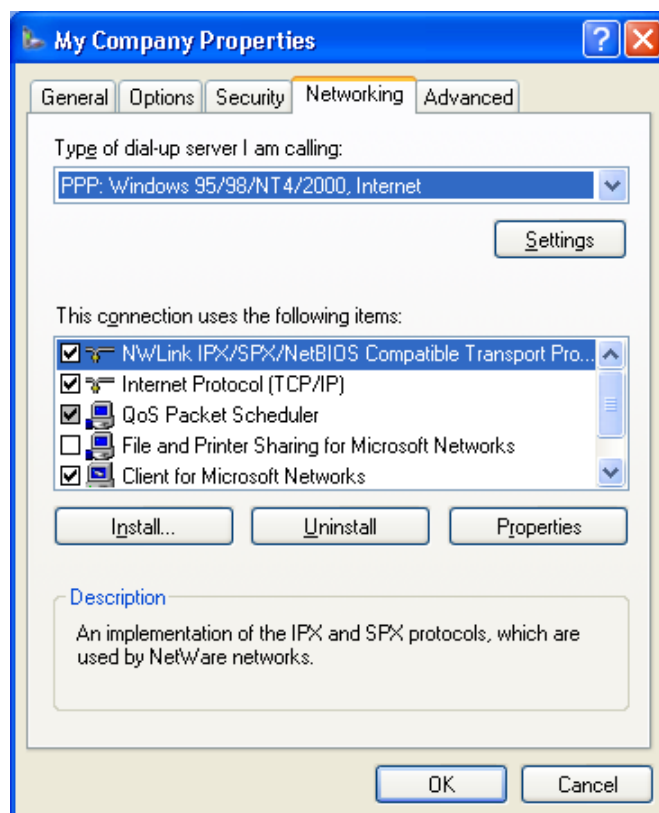
If you do not want to have to enter your password each time you establish a connection, check the **Save this user name and password** box. If you do this it is advisable to select **Me Only** to prevent other users from accessing your company's network.

*Note: doing this will still allow any person who gains access to your computer while you are logged on to it to connect to the company network.*



*Note: it is possible that connecting to a network will require a special protocol or configuration. If so, click on **Properties**, then on the **Networking** tab. If this is the case, you should probably ask the network administrator to help you, as the options to be chosen can vary according to the parameters of the remote access server. Follow the instructions of the remote network administrator for any possible setting changes to the TCP/IP parameters.*

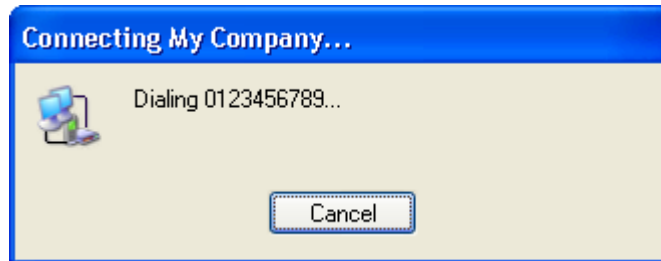
If you have followed these instructions, and if your remote network administrator has not provided any special instructions relative to the points which have been described, the **Networking** tab should correspond with the following screen.



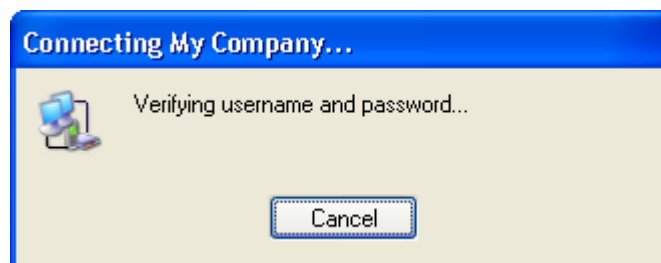
When finished, click on **OK** in order to validate the settings and to close the window.

## Establishing the Connection

1. You are now ready to establish your first connection. If the connection window is not displayed on the screen then click on **Start→Connect To→the name of your connection**. In the connection window, click on **Dial**. The system then dials.



2. When the call is received by the remote access server, your identification parameters are verified.



3. If the identification parameters have been entered correctly, the connection is established in just a few seconds (time varies according to the connection type and options chosen). The window automatically closes. To the right of the task bar, the remote access indicator appears and the appearance of the BT Digital Access USB icon changes (see figure below).

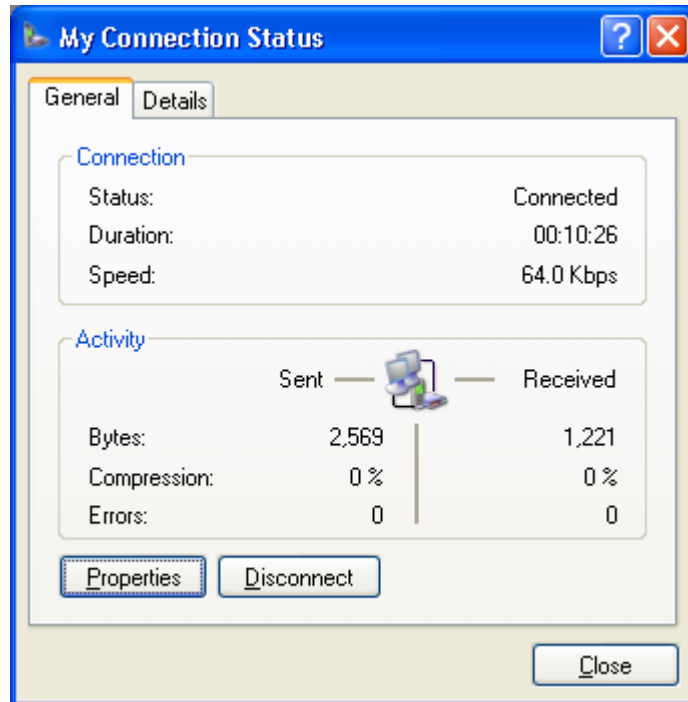


**Remote Access Indicator      BT Digital Access USB icon**

*Note: if the connection fails, **Dial-up networking** displays a message which indicates the reason for the failure. You can refer to the cause number indicated in the BT Digital Access USB **Display panel** (see "Identifying and Solving Problems" on page 47 – the help facility explains the reason for the failure that is given).*

4. The two indicators in the task bar can be used to monitor the connection.
  - The BT Digital Access USB icon shows the status of the BT Digital Access USB. It displays one lighted dot per channel used (in this case, a single channel). The dot is red or green depending on whether data is being sent on the line at any given time. If you double-click on this indicator, the BT Digital Access USB Display panel opens (see "BT Digital Access USB Icon" on page 17 and "Identifying and Solving Problems" on page 47).
  - The Remote Access indicator shows the status of Dial-up Networking. It indicates whether or not a connection has been established. If you double-click on this indicator, a window opens

showing the main connection parameters (speed, connection, duration etc.). A Disconnect button enables you to terminate your connection (see below).



## Using the Connection

Once the connection has been made, open the Windows **My Network Places** manager, which is accessible from the **Start** menu. Alternatively, it may be accessed from the **My Computer** window.



After a few moments, the remote access server to which you are connected appears in the list of connected machines. You can use the remote resources (files, printers) as though these resources were present on your local computer.

## Ending the Connection

When finished, don't forget to end the connection. Closing your **My Network Places** manager will not automatically end the connection.

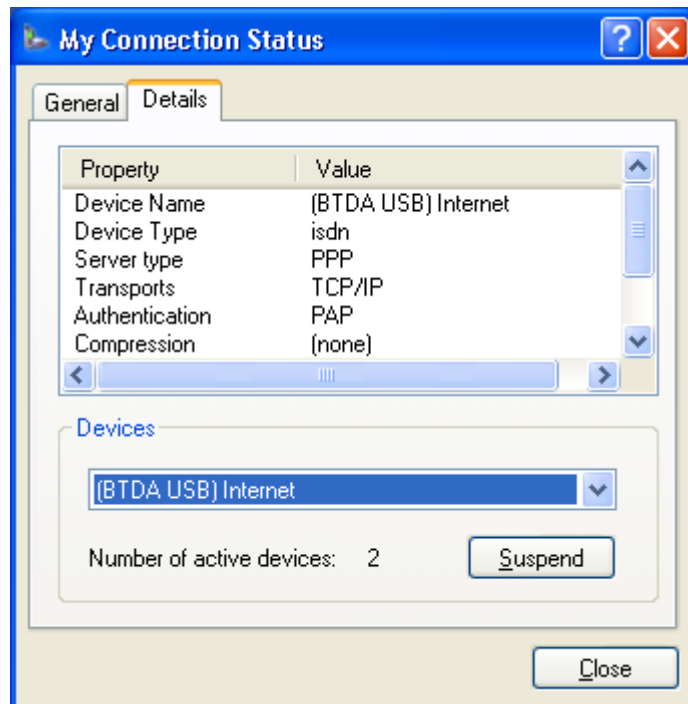
To end the connection, click on the remote access indicator using the right-hand mouse button (see previous page), and choose **Disconnect**.

*Note: If you forget, some remote access servers automatically disconnect you after a certain period of inactivity.*

## Changing between 64kbps and 128kbps

If you have set up the connection to be a 128kbps connection then you can change down to 64kbps during the connection and then back up to 128kbps, for example if you want to free a B-channel to make a phone call.

This feature is accessed from the **Details** tab of the **Connection Status** window (see below).



Click on the **Suspend** button to suspend one of the channels (i.e. reduce the speed to 64kbps), and then click on **Resume** to reconnect it (i.e. to return to 128kbps).

# Emulation of a Communication Port

We have seen in the previous chapters how to connect to the Internet and to a remote access server (Intranet, Microsoft Network etc.). This chapter provides guidelines on how to use other communications software (file transfer, remote control, fax etc.). This is done via the BT Digital Access USB's ISDN communication port, at 64 or 128kbps.

*Note: There is only one ISDN communication port. When monopolised by an application (eg. **Dial-up Networking** using V.120 protocol, fax software, remote control software, etc.), it is no longer available for other applications. You therefore cannot use different applications simultaneously through the ISDN communication port. However you can use several applications simultaneously thanks to the various BT Digital Access USB interfaces (e.g. **Dial-up Networking** via the NDISWAN interface, **PhoneTools** via the communication port, remote control software via the CAPI 2.0 interface...).*

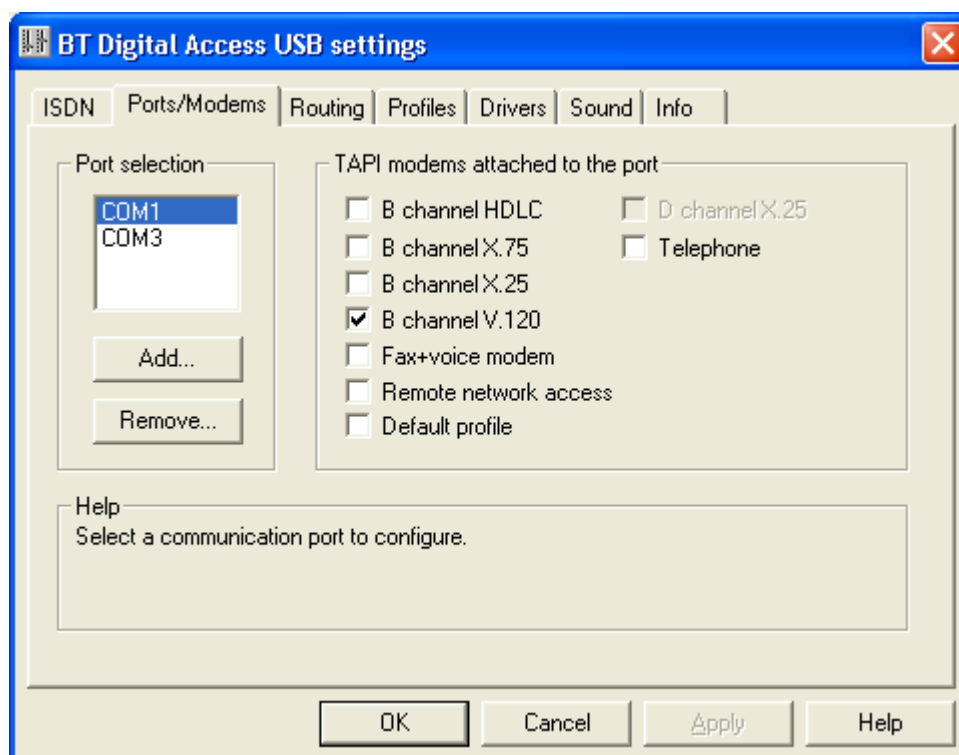
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## ISDN Communication Port Settings

When the BT Digital Access USB is installed, **Emulation of a Communication Port** is automatically installed and the first available communication port is reserved by the BT Digital Access USB software. The **TAPI Modem Fax and Voice Modem** is associated with this port.

*Note: If in doubt about the installation, refer to "Drivers" on page 44.*

To access the BT Digital Access USB communication port settings, click on **Start**→**All Programs**→**BT Digital Access USB** and click on **Settings**. Then click on the **Ports/Modems** tab (see screen shot below).



## Telephony Application Programming Interface (TAPI) Modems

*TAPI is a standardised way for programs to use modems on computers. It enables communications programs, such as fax or answer machine software, to use any modem or communications device that complies with the TAPI standard.*

The **TAPI modems attached to the port** area presents all of the TAPI modems provided by the BT Digital Access USB. Those that are checked are associated with the ISDN communication port and can be used by TAPI compatible applications.

Several TAPI modems can be associated with the ISDN communication port.

To associate a new TAPI modem to the ISDN communication port, check its box.

*Example: if you would like to use the BT Digital Access USB hands-free telephone function with a suitable TAPI software program, you must associate the **Telephone** TAPI modem with the ISDN communication port. See “ISDN Communication Port Settings” on page 37 for further details of how to set this up.*

To deactivate a TAPI modem associated with the ISDN communication port, simply uncheck it.

Click on **Apply** or **OK** for the modifications to be accepted (clicking **OK** also lets you leave the utility).

## Changing the ISDN Communication Port

Proceed as follows to change the ISDN communication port:

1. Click on **Remove...** in the **Ports/Modems** selection area of **ISDN Settings**. Click on **OK** to confirm. The **COMn** port is deleted, as are all of the associated TAPI modems.
2. Click on **Add...** in the **Ports/Modems** selection area of **ISDN Settings**. Select the port you want to use from the list of available communication ports. Then click on **OK**.



**Warning:** although some communication products manage ports COM1 to COM9, others do not go beyond COM4. It is therefore recommended to choose COM3 or COM4.

3. Check all the TAPI modems you want to associate with this new port.
4. Click on **Apply** or **OK** to apply these modifications (by clicking **OK** you will also exit the tool).

## Communication Settings for Applications

Refer to the manual of the application you intend to use along with the BT Digital Access USB for any information on its functioning. The communication settings differ depending whether the application is compatible or not with the TAPI specifications.

### TAPI Compatible Applications

1. Start the communication application.
2. Go to the application's settings.
3. Choose the ISDN modem (communication profile) that you wish to use.



**Warning: a connection between two sites implies that the same communication profile (TAPI modem) will be used by both sites.**

- **(BTDA USB) B channel HDLC:** allows connection with all the communication devices using a standard HDLC profile on a B channel at 64kbps.
- **(BTDA USB) B channel V.120:** allows connection with all the communication devices using a standard V.120 profile on a B channel up to 64kbps.
- **(BTDA USB) B channel X.25:** allows connection with all the communication devices using a standard X.25 profile on a B channel at 64kbps.
- **(BTDA USB) B channel X.75:** allows connection with all the communication devices using a standard X.75 profile on a B channel at 64kbps.
- **(BTDA USB) Fax+voice modem:** you can send and receive faxes and exchange data using the V.32 and V32 bis protocols, with suitable software, for example the Windows XP Fax Console.
- **(BTDA USB) Default profile:** allows you to use your own settings. Use this option if your correspondent uses a X.25 or HDLC profile at 64kbps with specific parameters, or a X.25 multiline profile at 128kbps (grouping of two B channels).
- **(BTDA USB) Remote network access:** this profile is only used in certain special configurations with Microsoft Dial-up networking.
- **(BTDA USB) Telephone:** allows hands-free telephone and/or answer machine functionality, using a suitable telephony software program and a properly installed sound card with speakers and a microphone.

Accept the modifications made to the settings.

### Non-TAPI Compatible Applications

1. Start the communication application.
2. Go to the application's communication settings.
3. Select the communication port (COM3, COM4...) that has been assigned to the BT Digital Access USB (see "ISDN Communication Port Settings" on page 37).

TAPI non-compatible applications work with different modem description files. A description file can be generic (a modem type) or specific (a particular modem). In the Modem field of the application's settings:

- if there are **BT Digital Access USB modems** available (each one corresponding to a specific communication profile), select the appropriate one.
- if no **BT Digital Access USB modem** exists, select the most standard modem possible (examples: standard Hayes, generic Hayes).

In this case, to determine which communication profile BT Digital Access USB will use during the connection, you must add the AT command **ATBn** to the initialisation string or in an additional initialisation string (where n is a numerical value):

<b>ATB10</b>	<b>(BTDA USB) B channel HDLC</b>
<b>ATB15</b>	<b>(BTDA USB) B channel V.120</b>
<b>ATB12</b>	<b>(BTDA USB) B channel X.25</b>
<b>ATB17</b>	<b>(BTDA USB) B channel X.75</b>
<b>ATB0</b>	<b>(BTDA USB) Default profile</b>
<b>ATB2</b>	<b>(BTDA USB) Fax+voice modem</b>
<b>ATB13</b>	<b>(BTDA USB) Remote network access</b>
<b>ATB16</b>	<b>(BTDA USB) Telephone</b>

*Notes:*

- *The speed indicated for the modem is irrelevant as this will be determined by the BT Digital Access USB.*
- *If your communication application does not allow you to add an AT command to the initialisation string, (BTDA USB) default profile is the one which will be used.*
- *For comments and remarks on ISDN profiles, refer to the previous section "TAPI Compatible Applications" on page 39.*

Accept the modifications made to the settings.

---

## Connecting, Using the Application, and Disconnecting

Each application has its own user interface. Refer to the application's user guide for more information on its functioning.

The most common causes of failure are the following:

- the settings have not been correctly carried out on one of the sites;
- the site you have called is not accepting calls or is busy;
- the communication profiles are incompatible;
- the connection cables are not properly connected;
- the software used is not compatible.



## CAPI 2.0 Interface

The BT Digital Access USB software includes CAPI 2.0 drivers. This is important when you want to access certain ISPs. Other software such as video telephony, ISDN fax etc. also use CAPI drivers.

### Have you connected your computer to an ISDN or BT Highway line before?

If you have, there could be a compatibility issue if you install BT Digital Access USB software on a computer that already has an ISDN adapter installed. (An adapter may be an ISDN terminal adapter, PCI card, PC card or PCMCIA card.)

You can find out if you have one of these devices installed by using the “**Check for another adapter**” button in the BT Digital Access USB Document Viewer. This check will advise you if it finds an adapter with CAPI drivers already installed. The document viewer should start automatically when you insert the CD into the PC. If it doesn't, click **START→RUN** and then type **d:\btsetup** (where *d* represents the drive letter of your CD-ROM drive) and press **Enter**.

If the check indicates that the CAPI drivers are present on your PC then either:

**do not install** the BT Digital Access USB software as we **recommend** that you use the existing ISDN adapter in preference

or

**you must uninstall** and **unplug/remove** the existing ISDN adapter (following the manufacturer's instructions) **before** installing the BT Digital Access USB software

*Note: If you believe you have uninstalled your ISDN adapter but the check indicates otherwise, it may be that the uninstall process did not complete successfully. Please refer to your ISDN adapter instructions.*

# BT Digital Access USB Settings

To access the **Settings** tool, click on **Start→All Programs→BT Digital Access USB→Settings**.

The **Settings** tool is used to configure the BT Digital Access USB. It has 7 tabs:

- **ISDN**: configuration of the BT Digital Access USB's ISDN phone number (see below) ;
- **Ports/Modems**: configuration of the ISDN communication port (see "ISDN Communication Port Settings" on page 37);
- **Routing**: assigning of an MSN number for each application;
- **Profiles**: selection of the default profiles for the B and D channels;
- **Drivers**: installation/uninstallation of the BT Digital Access USB drivers;
- **Sound**: settings which can be adjusted to optimise the sound when using the hands-free telephone function;
- **Info**: display of the configuration's general info.

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## Configuration of the ISDN Address

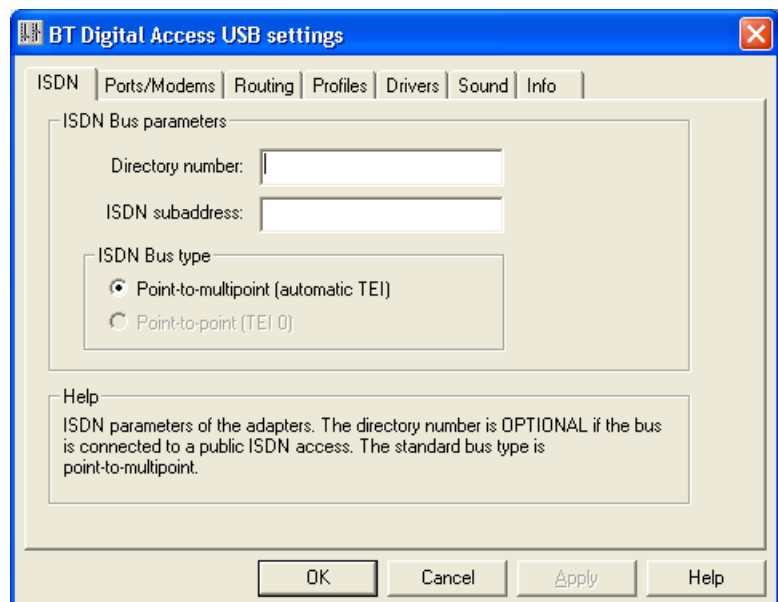
This is only necessary if you have MSN (Multi Subscriber Numbering) or ISDN Sub-addressing enabled on your line and you want the USB connection to receive data or fax calls on one of the numbers. Note: *If this does not apply to you, you can skip this section and leave the numbers blank.*

1. To access the settings, click on **Start→All Programs→BT Digital Access USB→Settings**. The tool is accessed on the **ISDN** tab.

2. Fill in the Directory number field:

- Enter the digital phone number of the blue sockets (without the area code) assigned to the BT Digital Access USB, or the MSN you want associated with the BT Digital Access USB.

- In the specific case where you have other ISDN terminals waiting for calls and which share the same call number, you can differentiate the BT Digital Access USB by attributing it an ISDN sub-address. This sub-address can comprise up to four freely chosen numeric characters. The caller must include it after the ISDN number (e.g. 0123456789\*1234). Sub-addressing and MSN are chargeable options, please check availability with your telecom operator.

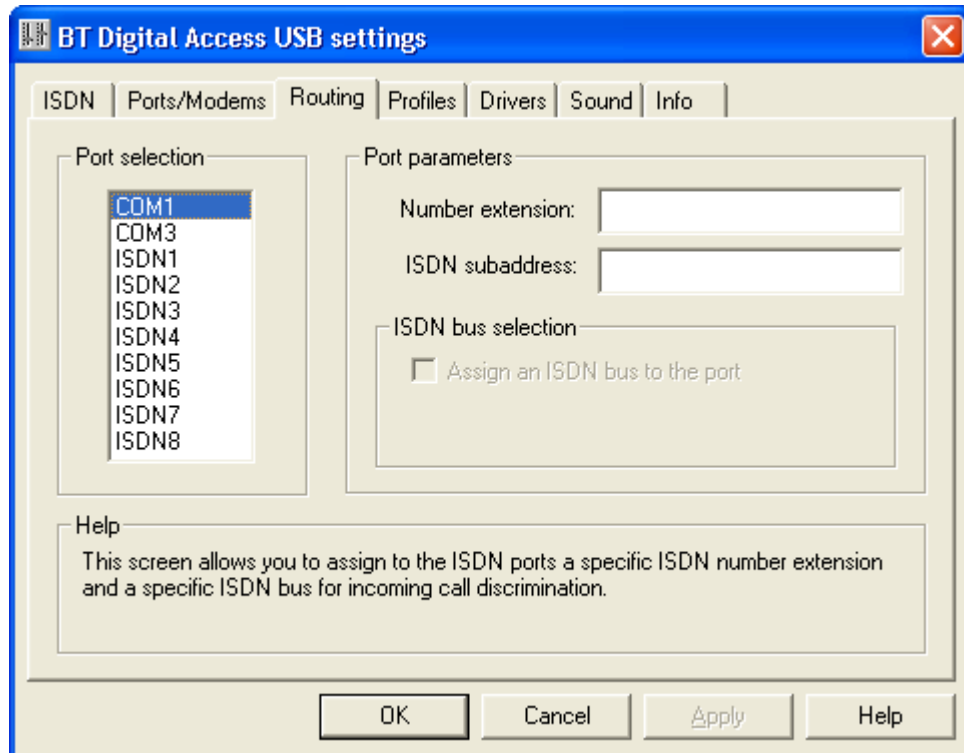


3. Click on **OK** to validate the ISDN configuration and close the **Settings** tool.

## Routing

With this tab, you can define a telephone number for each application. If you would like, for example, for your fax to receive the calls on a given communications port with a specific modem, assign it a Multi Subscriber Number (MSN).

*Note: MSN numbers are provided by your telecom operator. If you would like to have additional MSN numbers, contact your operator.*



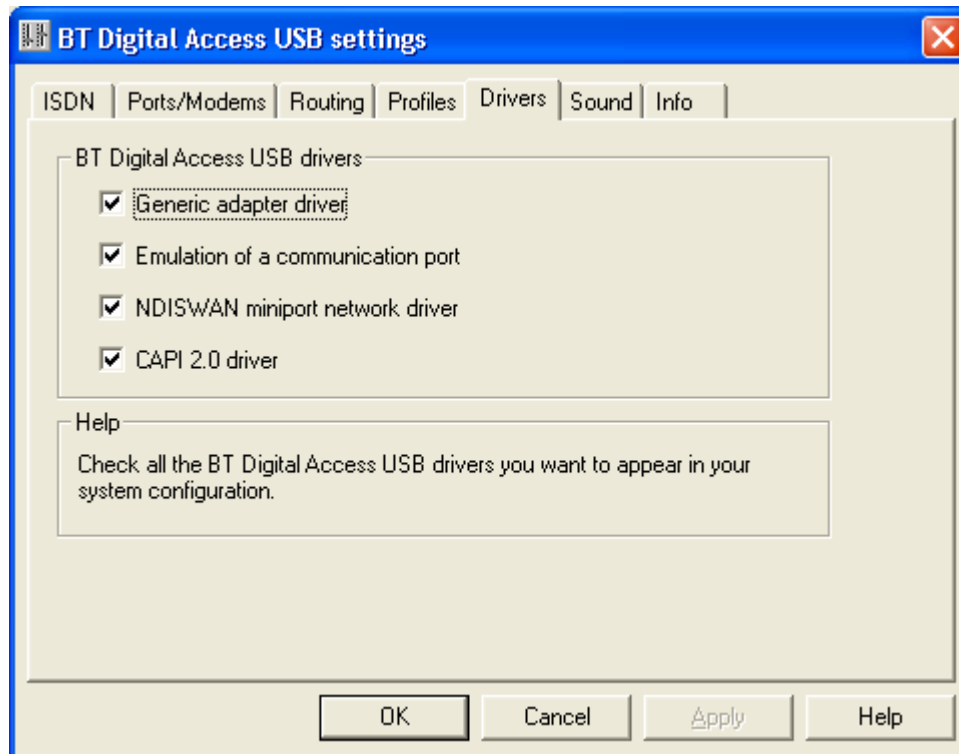
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## Profiles

This tab is only used in the unlikely event you are using an application via the ISDN communication port that requires a non standard communication profile. Refer to the help function in the **Profiles** tab if this is the case.

## Drivers

This tab is used to install and uninstall the BT Digital Access USB drivers. By default, when the BT Digital Access USB is installed all the drivers are installed. The drivers shown as checked in the Drivers tab have been installed.



There are four BT Digital Access USB drivers:

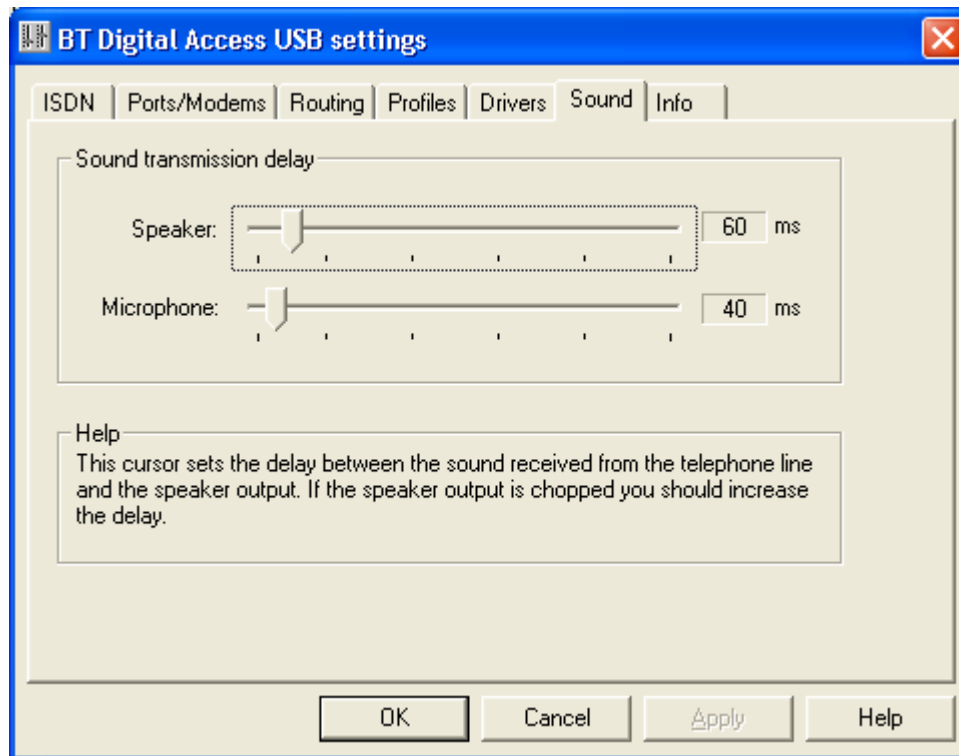
- **Generic adapter driver:** this is essential in order for the BT Digital Access USB to function. You must check it in order to use the BT Digital Access USB, whatever the context.
- **Emulation of a communication port:** with this facility, the BT Digital Access USB appears as a modem on a serial port. You can therefore use it with the Windows standard communication tools and any other software (remote control, file transfer, etc.) (see "Emulation of a Communication Port" on page 37).
- **NDISWAN miniport network driver:** this driver interfaces between Microsoft's Dial-up Networking and the BT Digital Access USB so that you can connect to the Internet or a remote access server using the PPP protocol at 64kbps or multi-line protocol at 128kbps (see "Internet Connection at 64kbps or 128kbps" on page 21).
- **CAPI 2.0 driver:** with this driver you can use CAPI application software with the BT Digital Access USB (see "CAPI 2.0 Interface" on page 41). A typical example of a CAPI application is a videotelephony program that turns your PC into a videophone.

To modify the configuration, check/uncheck the drivers to install/uninstall, then click on **Apply** or **OK** to apply the modifications (by clicking on **OK** you also exit the **Settings** tool).

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## Sound

If the BT Digital Access USB detects a properly installed and configured sound card in the computer, the utility will then include a Sound tab (see below). If not, this tab will be absent.

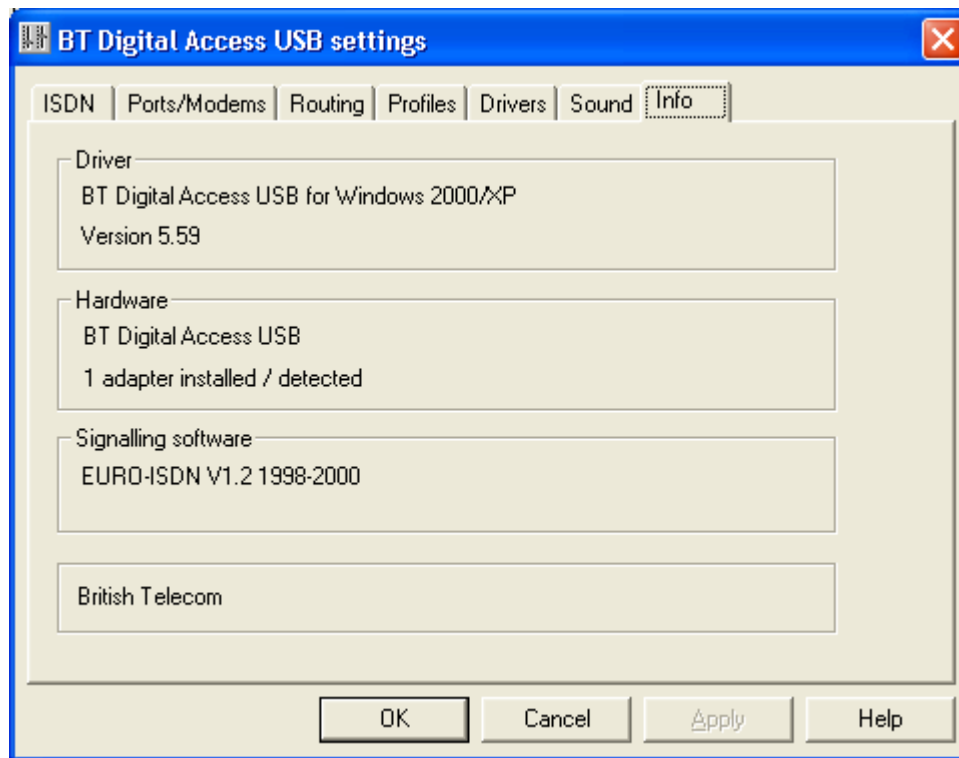


When the **Sound** tab is present, the BT Digital Access USB hands-free telephone function will then be available using the sound card, a microphone, loudspeakers and some telephony software.

The **Speaker** and **Microphone** cursors can be used to adjust the sound transmission delay in order to optimise the sound quality in accordance with the characteristics of the card being used. A short delay is best, but the optimum setting is very variable according to the capabilities of each card. The default parameters are a compromise, and should serve for most sound cards.

## Info

The **Info** tab displays general configuration information. This information is required should you need to contact your supplier for technical support.



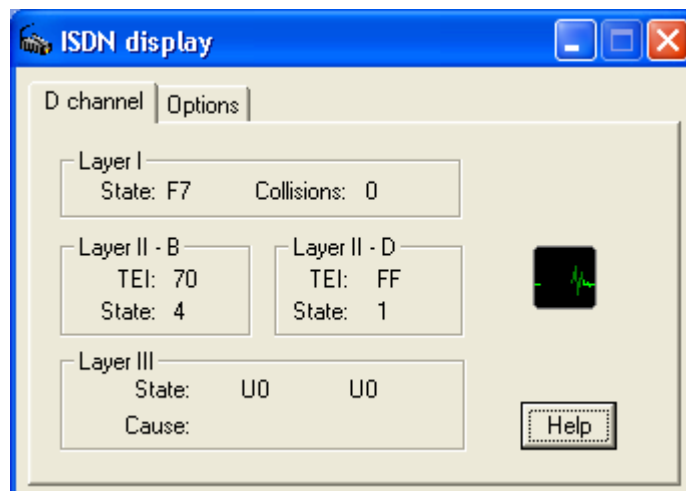
## Identifying and Solving Problems

The BT Digital Access USB, its software and its documentation have been created to be used by everyone. The BT Digital Access USB has been designed with reliability in mind. However, it is only one of the parts that make up your telecommunication solution. If you encounter any difficulties, keep in mind that these may be due to the following:

- A problem when installing, setting up, or using, the BT Digital Access USB, Windows XP (and/or its accessories) or the communication software;
- An incorrect configuration of your computer (in that case, the BT Digital Access USB only reveals the problem);
- A connection problem (defective cabling, poorly joined connectors/plugs...);
- A problem with your line (line may be out of order);
- A problem inherent to the site or the service with which the connection is to be established (ISP, remote computer or other equipment...);
- Trying to correspond with someone using incompatible equipment (for example, different communication profiles, incompatible software...).

Stay positive, this chapter provides guidelines on how to identify and solve the problem yourself. You are going to use the **ISDN Display panel**, which shows you the status of the exchanges between the BT Digital Access USB and the ISDN network at any given moment. Don't forget that the 'Connection Test' program can also be used to help locate problems (See 'Configuration Function Check' on page 19).

Double-click on the **BT Digital Access USB** icon to the right of the task bar. If this indicator is not displayed, click on **Start→All Programs→BT Digital Access USB→ Display panel**. The **ISDN Display** window is shown below:



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## Layer I Verification

Look at the value indicated opposite **State** in the “**Layer I**” area:

- **F7**: normal state. The BT Digital Access USB is recognised by Windows and its driver is loaded. Proceed to Layer II – B Verification.
- **F1 or F2**: anomaly. The driver of the BT Digital Access USB has not been loaded. Check that the USB cable is plugged in properly. If this doesn't solve the problem refer to the “Technical Support” section on page 6.
- **F3**: anomaly. The BT Digital Access USB has been recognised by Windows and its driver is loaded, but the digital service does not appear to be working. Check to see if the Service light is lit on the BT Digital Access USB unit. If it is lit then proceed to Layer II – B Verification, otherwise report the problem to your supplier.

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## Layer II - B Verification

Look at the value indicated opposite **TEI** in the “**Layer II - B**” area:

- an alphanumeric<sup>1</sup> value (other than FF) is shown: the TEI is correctly assigned. The BT Digital Access USB is correctly identified by the network. Proceed to Layer III – B Verification.
- **FF**: anomaly. The TEI is not assigned. The BT Digital Access USB is not recognised by the network. Proceed as follows:
  1. Try restarting the driver by unplugging the USB cable and plugging it in again.
  2. If step 1 has not solved the problem (the value of TEI remains FF), it may be that the BT Digital Access line is out of service. Check to see if the Service LED is lit on the BT Digital Access USB unit. If it is not lit then there is a problem with the BT Digital Access line so report the problem to your supplier.
  3. There may be a hardware problem with the BT Digital Access USB, so report the problem to your supplier.

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## Layer III Verification

For layer III verification, you must organise the windows on your computer screen so that you can observe the parameters of the **D Channel** tab of the **ISDN Display** while trying to connect using your communication software.

Before trying to connect, the value indicated opposite **State** is **U0**. This is its normal state of inactivity (no incoming or outgoing calls).

1. Attempt to establish a connection in your communication software (e.g. attempt to dial your ISP).
  - the value changes from **U0** to **U3**: normal situation. The BT Digital Access USB receives the dialling request from the communication software and tries to establish a connection.
  - the value remains at **U0**: anomaly. The BT Digital Access USB does not receive the dialling request from the communication software. The software's settings have not been correctly executed (e.g. you are not dialling the ISP correctly). Verify them and go back to step 1.

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<sup>1</sup> An Alphanumeric value is one composed of the digits 0 to 9 and the characters A to F.



2. After the value has changed to **U3**:

- the value changes from **U3** to **U10** (intermediate states may appear rapidly): normal situation. Your call has been received by the remote site. You are physically connected.
- the value goes back to **U0**: the call has failed despite the proper functioning of the BT Digital Access USB. An error number is displayed next to the **Cause** title. The **ISDN Display** help function explains the causes of errors.

The main causes are as follows:

- The number you have indicated in your communication software (e.g. in Dial-up Networking) is incorrect. Verify it.
- The number you have called is busy. Try again later.
- The remote site is not accepting calls. Notify your remote site administrator.

3. After the value has changed to **U10**:

- the value remains at **U10**: normal situation. The call has been taken care of by the remote software and you are now ready to exchange data.
- the value goes back to **U0**: you have been disconnected by the remote site or your software. The most frequent causes for this disconnection are the following:
  - the communication profiles that you and your correspondent use are incompatible. Contact your correspondent and determine a common communication profile. If necessary, change the settings of your communication software.
  - the remote site has disconnected you voluntarily because of an identification failure (Internet, remote access...). Verify your identification parameters. If the problem persists, contact your correspondent and request confirmation of your identification parameters.

# Glossary

Bandwidth on Demand	This refers to a method by which your computer can change between 64kbps and 128kbps connections automatically depending on the amount of data being transmitted. In contrast, a normal connection stays at 64kbps or 128kbps until the user changes it.
bps	Bits per second
CAPI	Common Application Programming Interface – this is a standard way for communication software to access ISDN Terminal Adapters. See ‘CAPI 2.0 Interface’ on page 41 for further details.
Device	This is the representation by the computer of a piece of hardware, for example the USB port of the BT Digital Access (USB).
Device Driver	This is the software that the computer uses to control a device.
Dial-up access	This refers to the way that a remote computer can access the Internet or another computer network. The computer makes a phone call to an access server and then sends data across the phone line to the access server which links it to the Internet.
ISDN	Integrated Services Digital Network – this is the service provided on the blue digital sockets. ISDN enables faster communication than ordinary analogue modems and also provides much quicker connection times, typically less than 3 seconds.
ISP	Internet Service Provider – A company that provides access to the Internet. They connect your phone call from your computer to the Internet.
kbps	Kilo bits per second – the units in which the speed of communication links are measured. <i>Note: there are eight bits in one byte of data.</i>
MLPPP	Multi-link PPP – this is a way of combining two 64kbps ISDN connections into one 128kbps connection, for example to provide faster Internet access.
PPP	Point to Point protocol – this is the favoured method for carrying data between two computers over a dial-up connection.
TA	Terminal Adapter – this is the generic name given to ISDN equipment that is used by computers to connect over ISDN.
TAPI	Telephony Application Programming Interface – this is a standard way for communication software with telephony functions to access modems via Microsoft Windows. See “TAPI Modems” on page 38 for further details.
TEI	Terminal Endpoint Identifier – a unique value given to each piece of equipment connected to a digital line.
USB	Universal Serial Bus – this is a universally accepted standard for connecting small peripherals to computers, such as printers, scanners and modems. This User Guide describes how you can use this feature on the BT Digital Access USB unit to make an ISDN connection, for example to the Internet.
V.32	A modem protocol that operates at 9600bps
V.32bis	A modem protocol that operates at 14400bps
V.120	A transmission protocol that allows data to be carried between two computers over a dial-up connection.
Videotelephone	An ISDN telephone that also includes a camera and screen. A PC with a Pccam (or video input) can be used as a Videotelephone with suitable software.
Videotelephony	A phone call which includes a video picture as well as voice.

# Appendix

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## List of ISDN Disconnect Reasons

*Reference: ETSI*

- 1 Unallocated number**  
You have dialled a number that doesn't exist – check that you have entered the number correctly.
- 2 No route to specified transit network**
- 3 No route to destination**
- 6 Channel unacceptable**
- 7 Call awarded and being delivered in an established channel**
- 16 Normal call clearing**
- 17 User busy**  
The number you have dialled is busy.  
If you are trying a Connection Test, check that no other phones connected to this line are in use.
- 18 No user responding**  
If you are trying a connection test, check that you are dialling the correct number.
- 19 No answer from user (user alerted)**  
If you are trying a connection test, check that you are dialling the correct number.
- 21 Call rejected**
- 22 Number changed**  
The number you have dialled isn't recognised – check that the number hasn't changed and that you have input it correctly.
- 26 Non-selected user clearing**
- 27 Destination out of order**
- 28 Invalid number format**  
Check that you have typed the phone number correctly and that you have not missed out any of the digits.
- 29 Facility Rejected**
- 30 Response to status enquiry**
- 31 Normal clearing, unspecified reason**
- 34 No circuit or channel available**

Either

a) The number you have dialled is busy, or

b) Both of your B-channels are busy.

If you are trying a Connection Test, check that no other phones connected to this line are in use.

**38 Network out of order**

**41 Temporary failure**

**42 Switching equipment congestion**

Network congestion. Please retry.

**43 Access information discarded**

**44 Requested channel or circuit not available**

**47 Resources unavailable, unspecified reason**

This can occur if the line is not communicating with the exchange.

- Try restarting your computer (after closing all applications and saving any data) and redialling.
- Check that the 'Service' LED is illuminated on the BT Digital Access USB unit. If necessary report the issue to your service operator.

**49 Quality of service unavailable**

**50 Requested facility not subscribed**

**57 Bearer capability not authorized**

**58 Bearer capability not presently available**

**63 Service or option not available, unspecified reason**

It is not possible for the network to complete the call you are trying to make. Check that you are not trying to dial using prefixes your line is not set up for.

**65 Bearer capability not implemented**

**66 Channel type not implemented**

**69 Requested facility not implemented**

**70 Only restricted digital information bearer capability is available**

**79 Service or option not implemented, unspecified reason**

**81 Invalid call reference value**

**82 Identified channel does not exist**

**83 A suspended call exists, but this call identity does not**

**84 Call identity in use**

**85 No call suspended**

**86 Call having the requested call identity has been cleared**

**88 Incompatible destination**

You dialled a phone number that is incompatible with the type of call you are making. For example, you may be trying to make a data call to an analogue phone, or a voice call to a computer that is expecting a data call. Check that you have typed the correct phone number.

If you are trying to carry out the connection test, check that you have entered the correct telephone number, not any of the analogue phone numbers.

The digital number is associated with the Blue sockets and should be written on the right-hand part of the label on the front of the BT Digital Access USB unit.

**91 Invalid transit network selection**

**95 Invalid message, unspecified reason**

**96 Mandatory information element is missing**

**97 Message type non-existent or not implemented**

**98 Message not compatible with call state or message type non-existent or not implemented**

**99 Information element non-existent or not implemented**

**100 Invalid information element contents**

**101 Message not compatible with call state**

**102 Recovery on timer expiry**

**111 Protocol error, unspecified reason**

**127 Interworking, unspecified reason (unassigned) number**