BT Digital Access USB

User Guide for
Windows 98 and Windows Me

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November 2001 edition.

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Foreword

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 XP Home, Windows XP Professional or Windows 2000 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 **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, and file transfers using the V.32 and V.32bis 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.

Knowledge Required

In the BT Digital Access USB User Guide, we assume that you are already familiar with the Windows 98/Me user interface, commands and utilities. If necessary, please refer to the Windows user guide or the Windows on-line help.

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

Technical Documentation

This Guide contains practical information to help you install and use the BT Digital Access USB device under Windows 98 or Me.

If you use the BT Digital Access USB with Windows XP Home, Windows XP Professional, Windows 2000 Professional 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 CD-ROM; notably:

- The **User Guide for Windows 98 and Windows Me** (this manual);
- The **User Guide for Windows XP Home and Windows XP Professional**;
- The **User Guide for Windows 2000 Professional**;

- 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.
4. After the software has been installed, this User Guide can be accessed from the **Start** menu using S**tart→Programs→BT Digital Access USB→User Guide**.

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 19), 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 43. 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

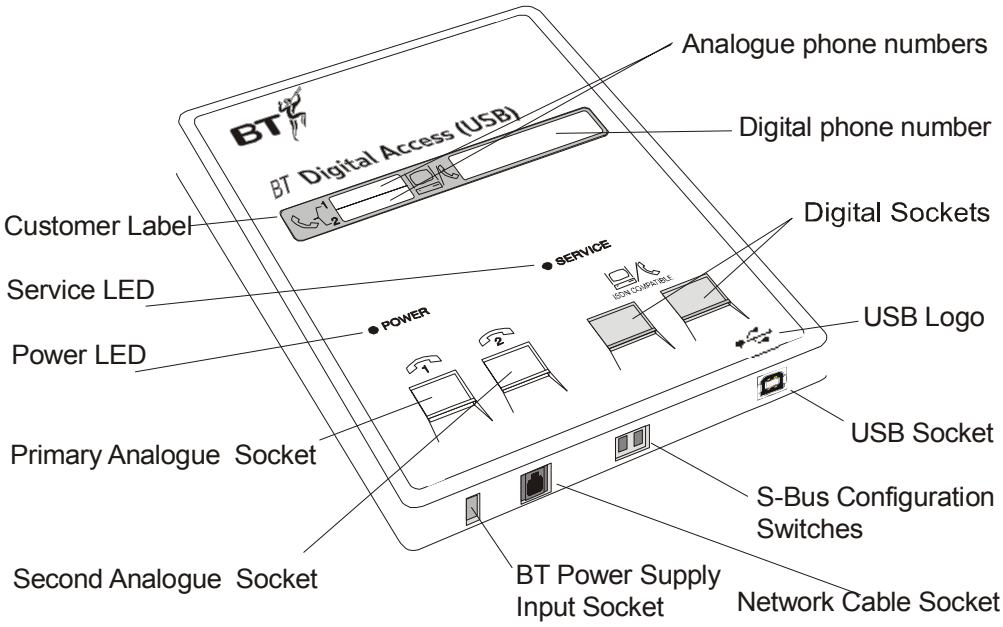
Note: If you believe you have uninstalled your ISDN adapter but the check indicates otherwise, it may be that the uninstall process did not complete successfully. Please refer to your ISDN adapter instructions.

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 “CAPI 2.0 Interface” on page 7 before connecting your USB cable.

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

Warning: if Windows 98 was already installed on your PC when you bought it, its motherboard should support USB peripherals. However, if your PC pre-dates Windows 98 and it was subsequently upgraded to Windows 98, it is possible the motherboard is not able to support USB peripherals. In this case you will not be able to install the BT Digital Access USB software (a message is displayed when installation is attempted). If you encounter this problem, contact your dealer or PC manufacturer for advice on how to overcome it.



Please follow the installation steps specified in this user guide.

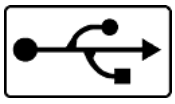
Installing the BT Digital Access USB Software

Note: Some screenshots may vary depending on the version of Windows 98 or Windows ME that you have.

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 drive, 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.

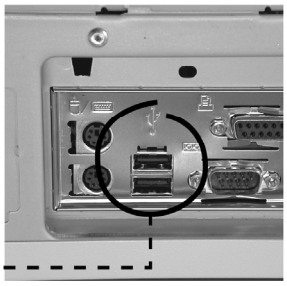
3. If you have decided to continue with the installation of the BT Digital Access USB software, connect your computer to the BT Digital Access unit. You should not switch off the computer when you connect the BT Digital Access USB to it. Your USB cable can be identified by the connectors at each end which have the USB logo marked on them, (see right).



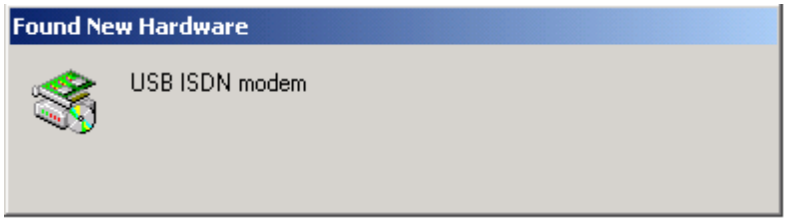
4. Plug the connector with the square end into the USB socket of the BT Digital Access USB. The USB socket is on the bottom edge of the BT Digital Access unit on the right-hand side. The socket is aligned with the USB logo on the front of the case. The connector is plugged in with the USB logo on the cable visible (i.e. 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 via a hub connected to your computer.*

Back panel of the PC



A message is displayed briefly to indicate the device has been detected. (Don't worry if you miss this!)



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 **New Hardware Wizard** is automatically launched when you connect to the BT Digital Access USB for the first time. *The Windows Me screen looks slightly different and is called 'Found New Hardware Wizard'.*

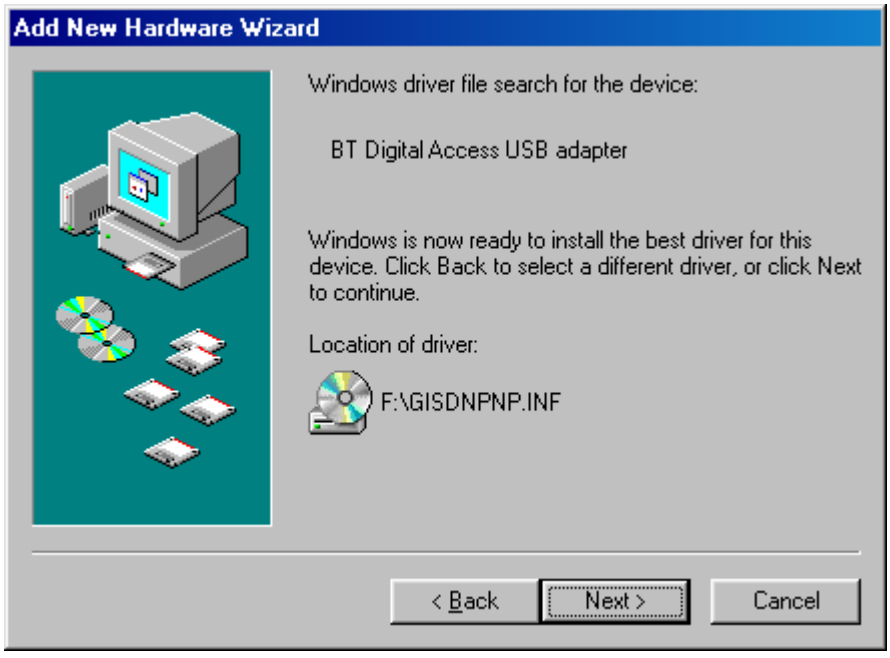
6. When you see this screen, insert the BT Digital Access USB Installation CD into your CD-ROM drive, if it is not already there. The document viewer may start – if you don't need to access a User Guide then it can be closed (by clicking the **CLOSE** button) without affecting the installation.

7. Click **Next** to begin the New Hardware Wizard.

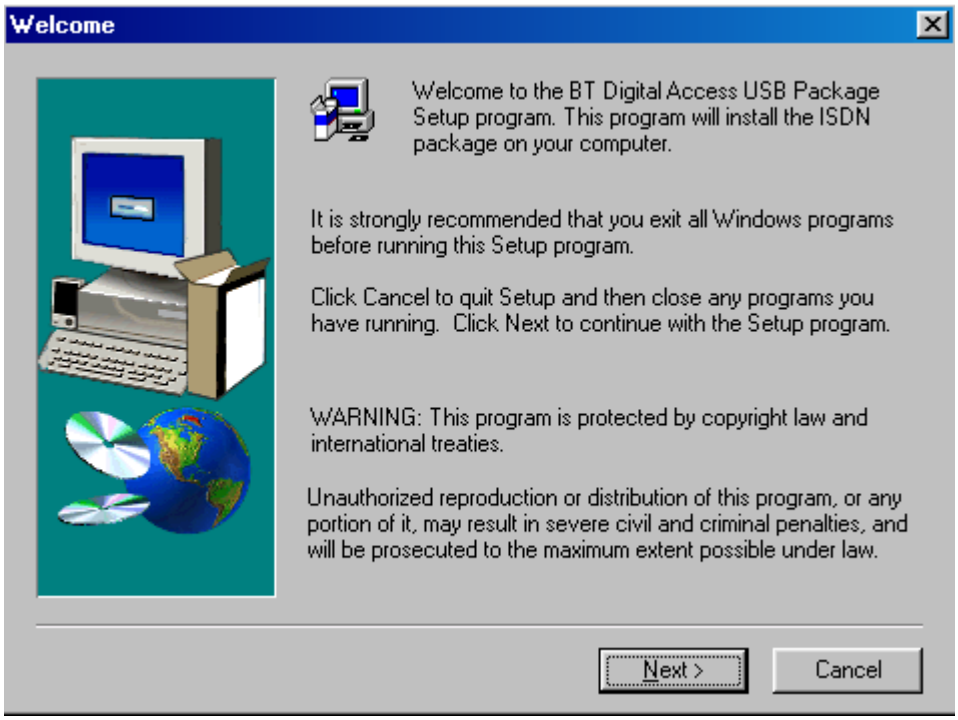
8. Confirm that 'Search for a suitable driver for my device (recommended)' is selected and click **Next** to continue.

Note: This screen may not be seen with the Windows Me installation

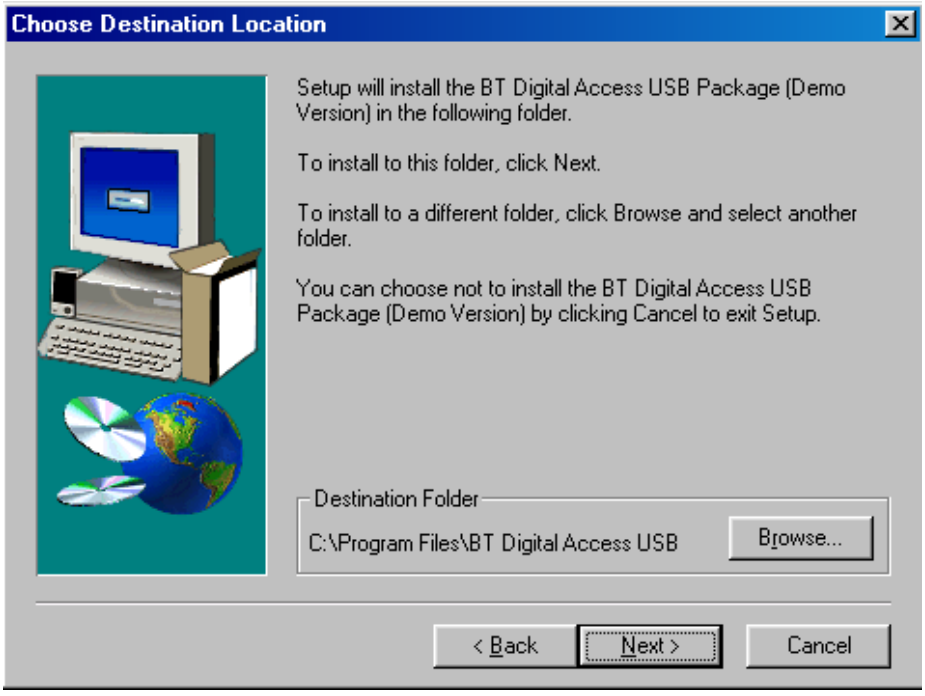
9. Select **CD-ROM drive** only and click **Next** to continue.



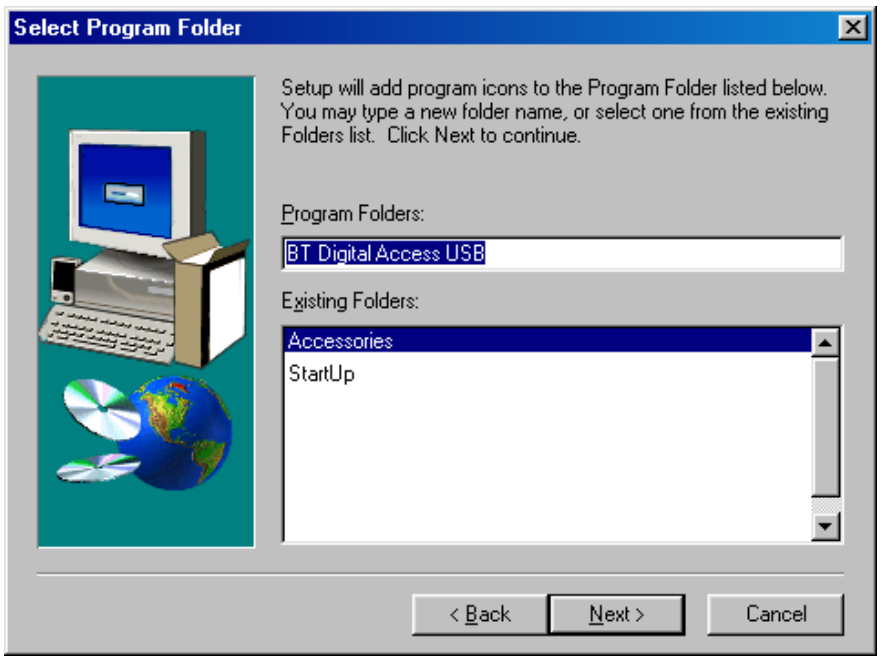
10. Click **Next** when the Hardware Wizard has found the GISDNPNP.INF driver, as shown above. *(The window may be slightly different with Windows Me)*



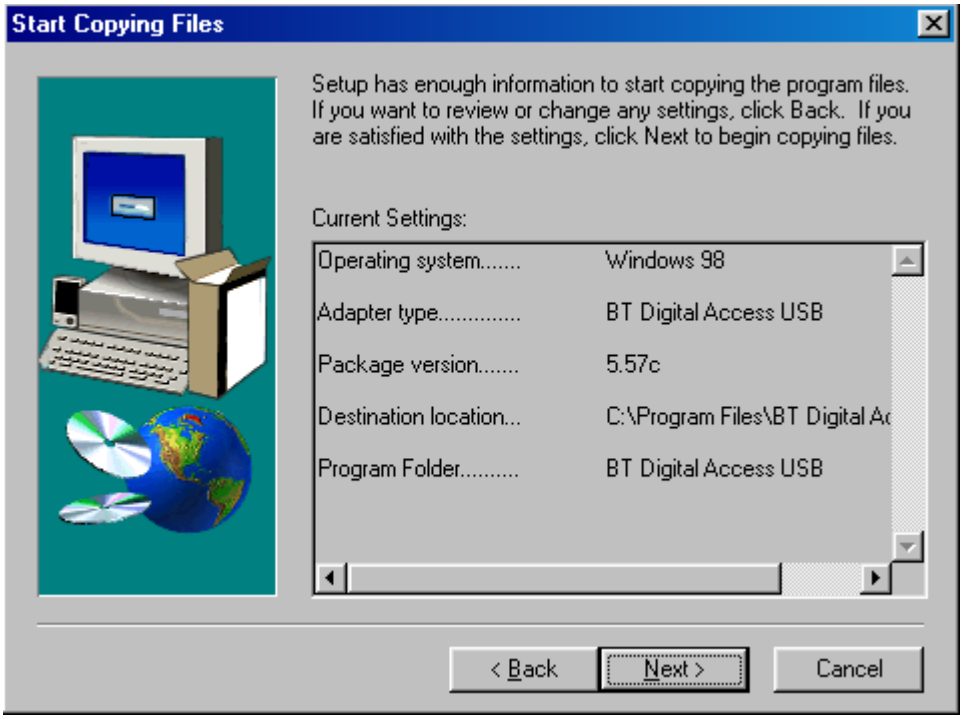
11. The BT Digital Access USB package setup program will now begin. Click **Next** to continue.



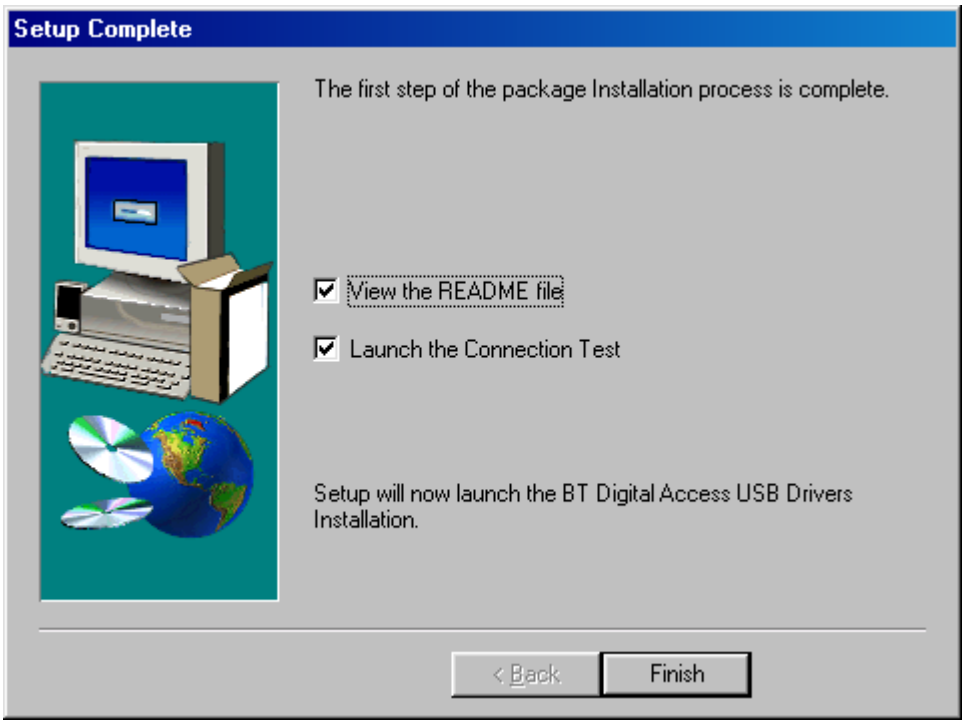
12. To install the BT Digital Access USB package into the default directory, click **Next**. To install elsewhere, click **Browse**.



13. To install the BT Digital Access USB package into the default Program Folder, click **Next**.



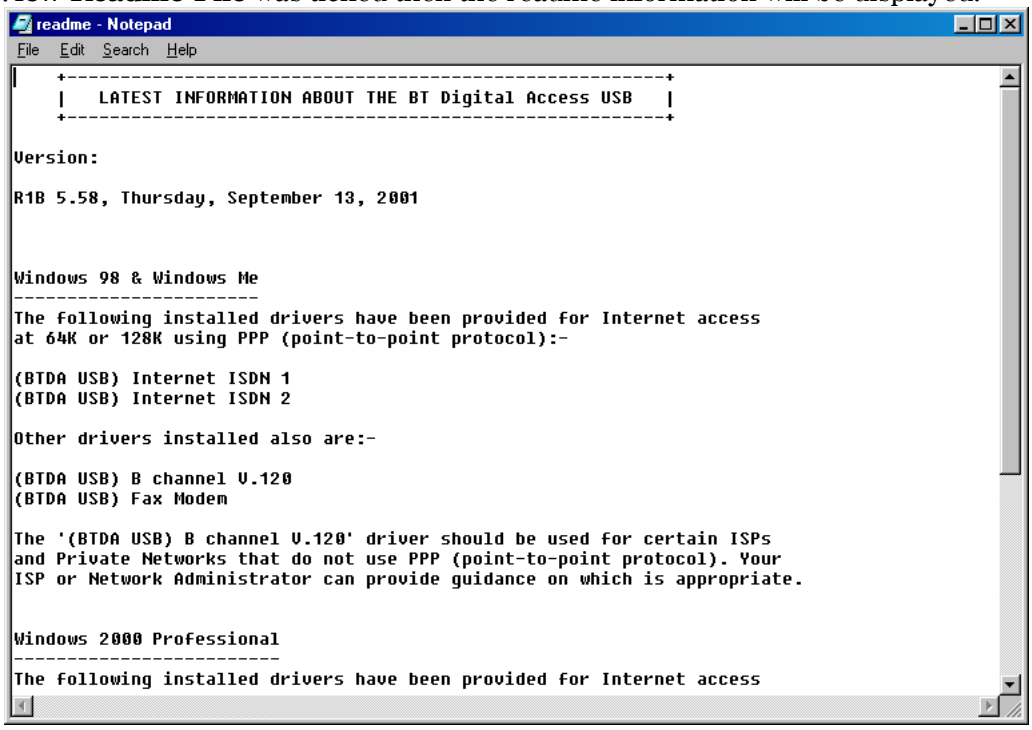
14. Click **Next** to begin copying the necessary files.



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

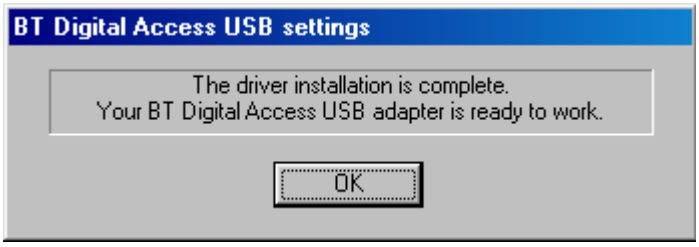
16. Click **Finish** and the installation will copy files and configure the system.

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

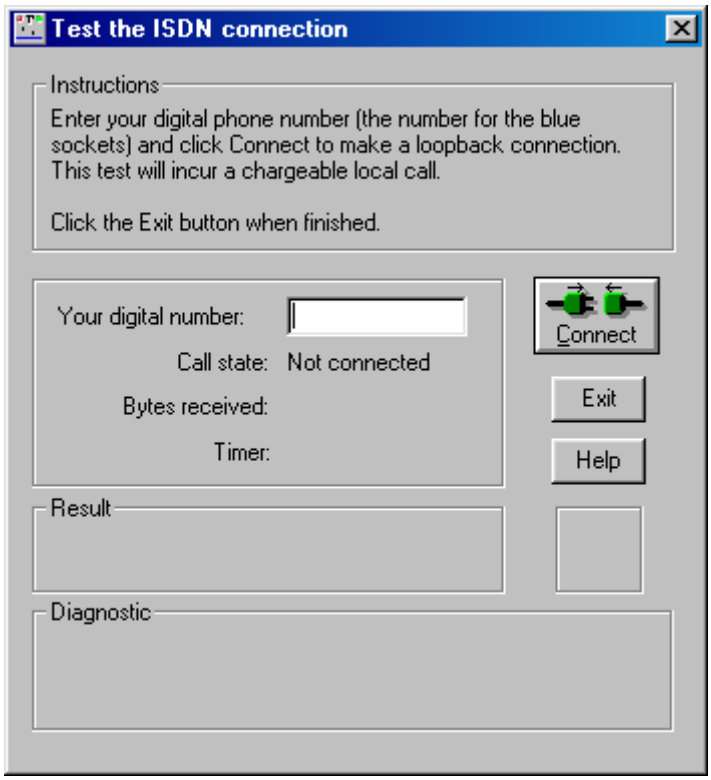


18. After reading the Readme.txt, click the **X** in the top right hand corner or select **File**, **Exit** to continue the installation.

19. When the files have been copied and configured the following screen will be displayed.



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



21. 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 20.

    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, firstly 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 for further advice.

    Click **Exit** to close 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 21.

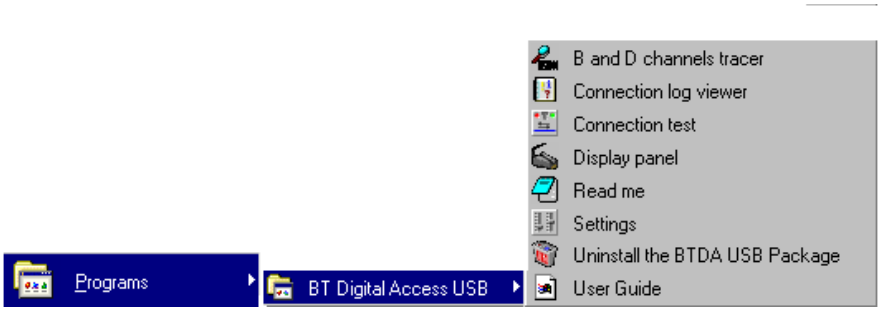
Installation Summary

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 **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 20).
- **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 43). 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 38), selects and adjusts the ISDN communication port (see "ISDN Communication Port Settings" on page 33), modifies the default profiles, installs/uninstalls the ISDN drivers, adjusts the sound of the associated telephony feature (see "Sound" on page 41) 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 previous page). An explanation of the different icon images is given in BT Digital Access USB Icon on page 18.

3. Hardware devices have been added to your system. In order to see them, click on **Start**, point to **Settings**, then click successively on **Control Panel**, **System** and on the **Device Manager** tab.

- **ISDN drivers** have been added. If you select this, you will see three devices: **CAPI 2.0 driver**, **ISDN driver** and **BT Digital Access USB adapter**.
- The **NDISWAN network driver for BTDA USB** has been added to the **Network adapters** type.
- The **BTDA USB communication port (COMn)** element has been added to the **Ports (COM & LPT)** type.
- The **(BTDA USB) Fax Modem** has been added under **Modem**. This is a virtual modem associated with the BTDA USB communication port and is used to manage the following protocols: V.17, V.21, V.23, V.27 ter, V.29, V.32 and V.32 bis.
- The **(BTDA USB) B channel V.120** has been added under **Modem**. This is a virtual ISDN modem associated with the BTDA USB communication port and is used to connect to certain ISPs and Private Networks.

Note: other ISDN modems can be added (see "ISDN Communication Port Settings" on page 33).

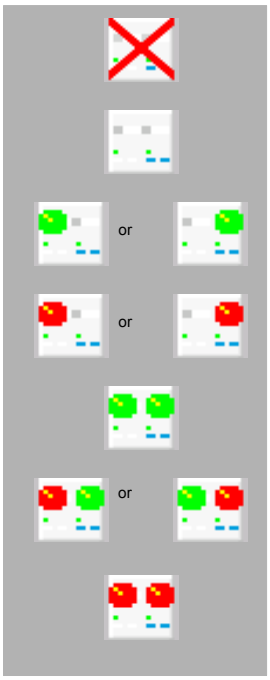
4. A **BT Digital Access USB** folder has been created on your hard drive, in the **Program Files** folder. This folder contains all the files necessary for the functioning of the BT Digital Access USB. You will never need to access this folder directly. Make sure that you do not move it or modify its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

Should you have to remove the BT Digital Access USB software, unplug the USB cable, click on **Start→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.

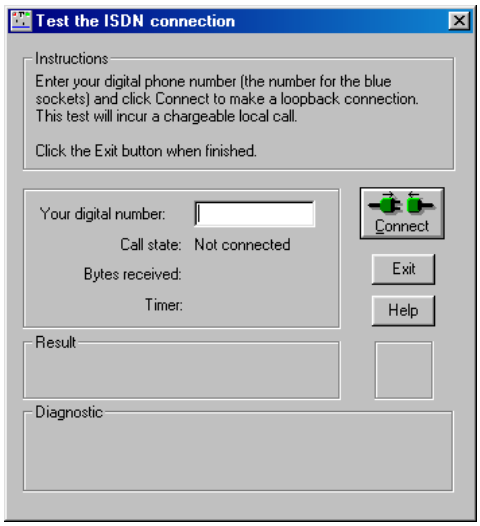
Configuration Function Check

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.

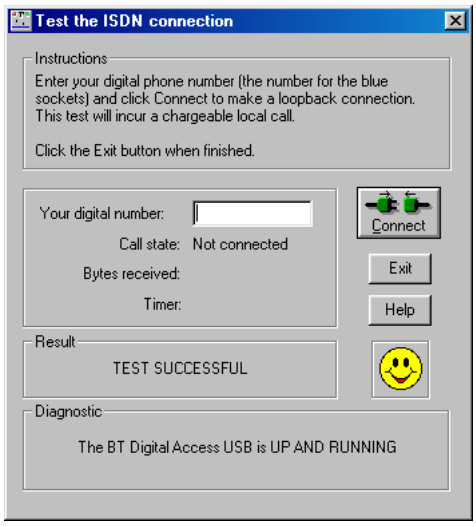
The test is carried out as follows:

1. Click on **Start**, point to **Programs** then **BT Digital Access USB** and click on **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.

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



4. 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".

5. Click on **Exit** to exit.

Note: if the test fails, check that the digital phone number has been entered correctly and try again. If this does not help, 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 "Identifiying and Solving Problems" chapter on page 43.

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 **(BTDA USB) Internet ISDN1, (BTDA USB) V.120**, or anything that includes **ISDN**.

- 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 Dial-up Networking folder and selecting **Properties**. *(Double click **My Computer** icon and then double click **Dial-up Networking** to open the Dial-up Networking 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). If your ISP uses a connection method other than Windows Dial-Up networking please contact them for advice.

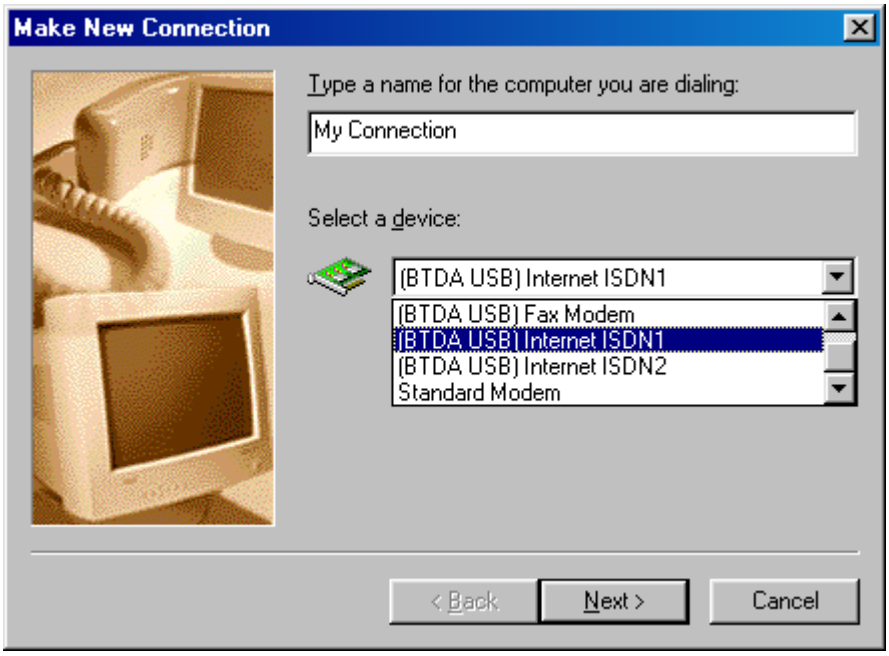
To make an Internet connection, the BT Digital Access USB NDISWAN miniport network driver must be installed. This is installed by default when you load the BT Digital Access USB software. However, if you are in doubt about the installation of this driver, refer to "Drivers" on page 40.

Internet Connection at 64kbps

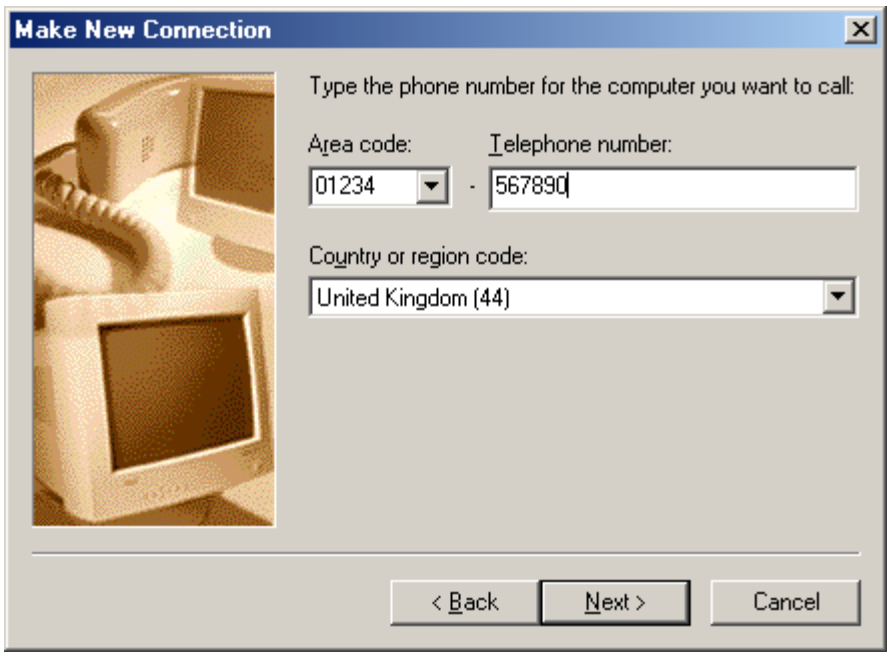
The following provides more detailed guidelines on setting up a new Internet connection using BT Digital Access USB.

Please note that the screen shots may vary slightly depending on which version of Windows 98 or Windows Me that you have.

1. Access the Dial-Up Networking folder:
   - Windows Me: **Start → Settings → Dial-up Networking**
   - Windows 98: Double-click on **My Computer** icon and then double-click on **Dial-up Networking**
2. Double-click on **Make New Connection**.



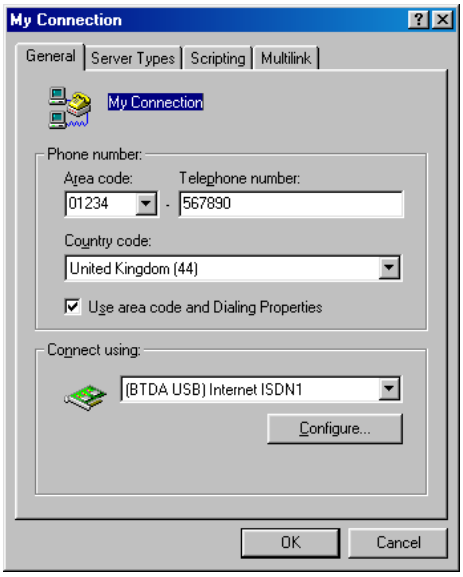
3. Type in a memorable name for the connection to replace 'My Connection'.
4. In the **Select a device** drop-down list select **(BTDA USB) Internet ISDN1** for a single channel connection at 64kbps (ISDN speed for accessing the Internet or a remote network).
5. Click on **Next**.



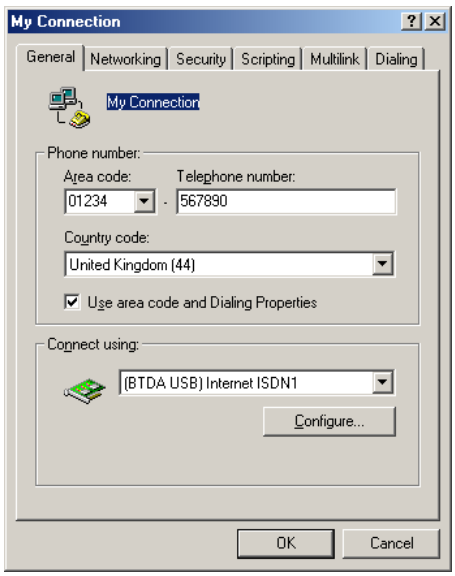
5. In the **Telephone number** field, enter the number that your ISP has given you or the remote access server number. Do not leave any spaces or put any commas between the code and the number. Click on **Next**.
6. A summarising screen indicates how to use and later modify the connection file you have just created. Click on **Finish** to close the window.

A few simple adjustments must also be done in order to optimise any future connections.

7. Use the **right**-mouse button to click on the icon that you have just created (this icon has the name that you have chosen in step **3**), then click on **Properties**. The following window will open:



Windows 98



Windows Me

The next part of the procedure varies depending on whether you intend to connect to the Internet or to a remote access server (such as a company Intranet).

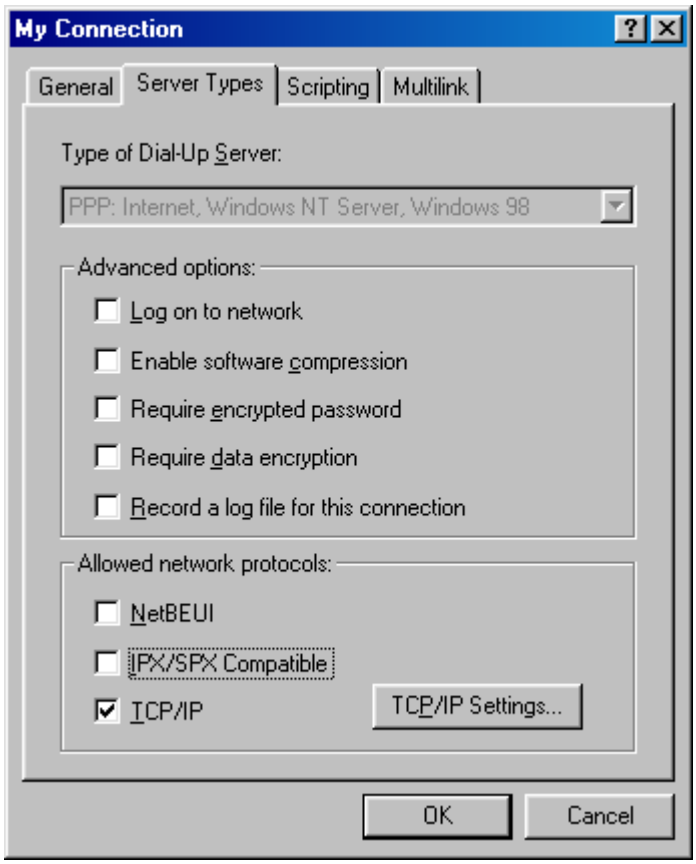
Internet

Under Windows 98

8. Click on the **Server Types** tab. Uncheck all the advanced options (**Log on to network**, **Enable software compression**, **Require encrypted password**...) unless otherwise stated by your ISP.

   In the Allowed network protocols area, uncheck NetBEUI and IPX/SPX Compatible. Check TCP/IP.

   If you have followed these recommendations, and your ISP has not given you any particular instructions concerning the previous points, the Server Types tab should match the following screen shot:



Notes:

- Do not modify the TCP/IP Settings unless your ISP gives you directions to do so.
- The Internet uses the TCP/IP protocol. Should you select other protocols, **Dial-up Networking** would unsuccessfully attempt to establish a link for them during the connection and cause delays.

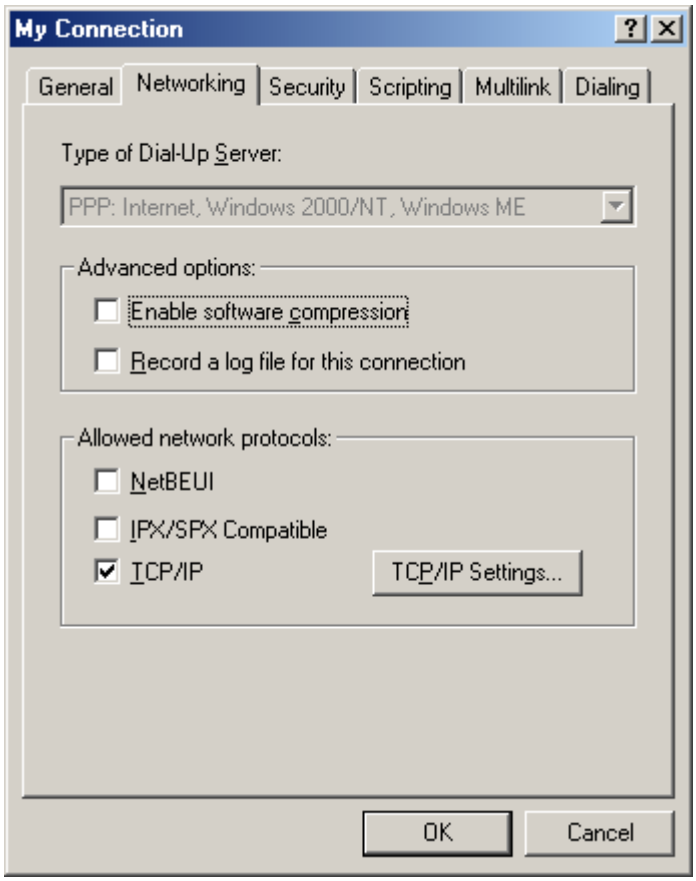
9. When you have finished, click on **OK** to confirm the new settings and close the window. You are now ready to establish your first connection (see “Establishing the Connection” on page 28).

Under Windows Me

8. Click on the **Networking** tab. Uncheck **Enable software compression** unless otherwise stated by your ISP.

   In the Allowed network protocols area, uncheck NetBEUI and IPX/SPX Compatible. Check TCP/IP.

   If you have followed these recommendations, and your ISP has not given you any particular instructions concerning the previous points, the Networking tab should match the following screen shot:



Note:

- Do not modify the TCP/IP Settings unless your ISP gives you directions to do so.
- The Internet uses the TCP/IP protocol. Should you select other protocols, **Dial-up Networking** would unsuccessfully attempt to establish a link for them during the connection and cause delays.

9. When you have finished, click on OK to confirm the new settings and close the window. You are now ready to establish your first connection (see “Establishing the Connection” on page 28).

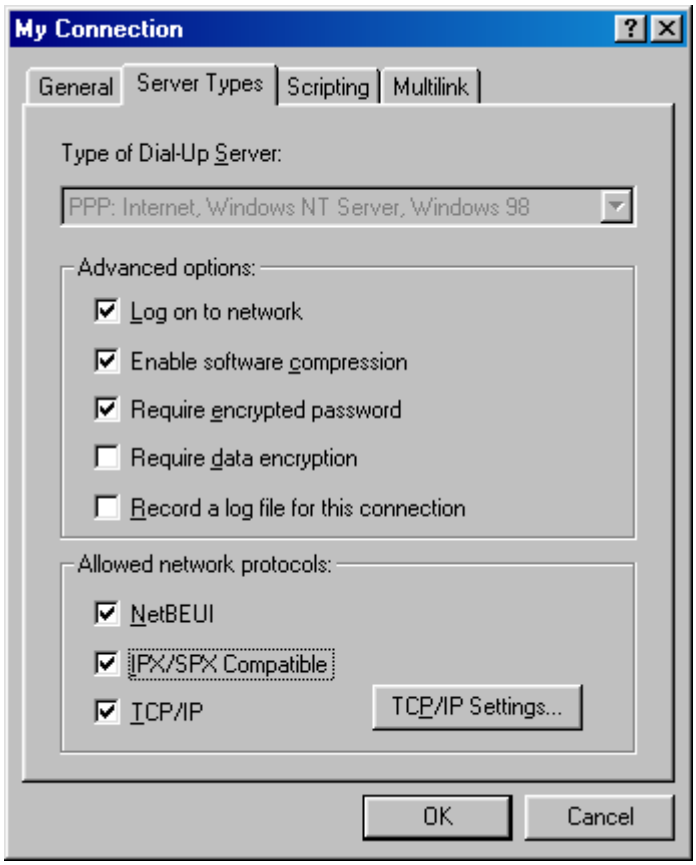
Remote access server (e.g. private company Intranet)

Under Windows 98

8. You are in **Properties**. Click on the **Server Types** tab**.** Check the following Advanced options, unless otherwise stated by the remote access server manager:
   - **Log on to network**. This option allows you to access all the shared resources (such as files, printers) attached to the remote access server.
   - **Enable software compression**. The compression is generally managed by the remote access server.
   - **Require encrypted password**.
9. Uncheck **Require data encryption**, unless otherwise stated by the remote access server manager.
10. In the **Allowed network protocols** area, check or uncheck **NetBEUI**, **IPX/SPX Compatible** and **TCP/IP** depending on the protocols activated by the remote access server.

    Note: comply with the instructions given to you by the remote access server manager for any eventual adjustments of the TCP/IP Settings.

    If you have followed these recommendations, and the remote access server manager has not given you any particular instructions concerning the previous points, the **Server Types** tab should match the following screen shot:



11. When you have finished, click on **OK** to confirm the new settings and close the window. You are now ready to establish your first connection (see “Establishing the Connection” on page 28).

Under Windows Me

8. You are in **Properties**. Click on the **Networking** tab. Check the advanced option **Enable software compression** (the compression is generally managed by the remote access server).

   In the **Allowed network protocols** area, check or uncheck **NetBEUI**, **IPX/SPX Compatible** and **TCP/IP** depending on the protocols activated by the remote access server.

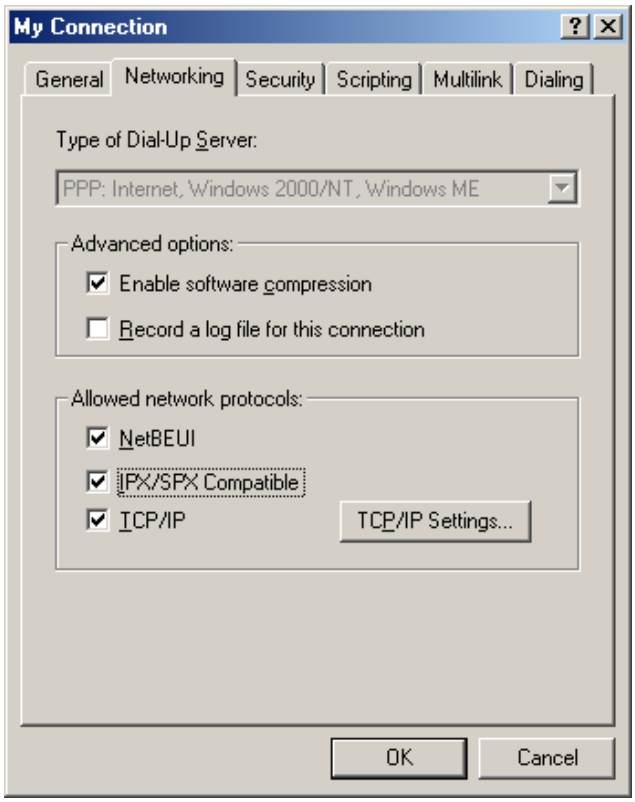
   Note: comply with the instructions given to you by the remote access server manager for any eventual adjustments of the TCP/IP Settings.

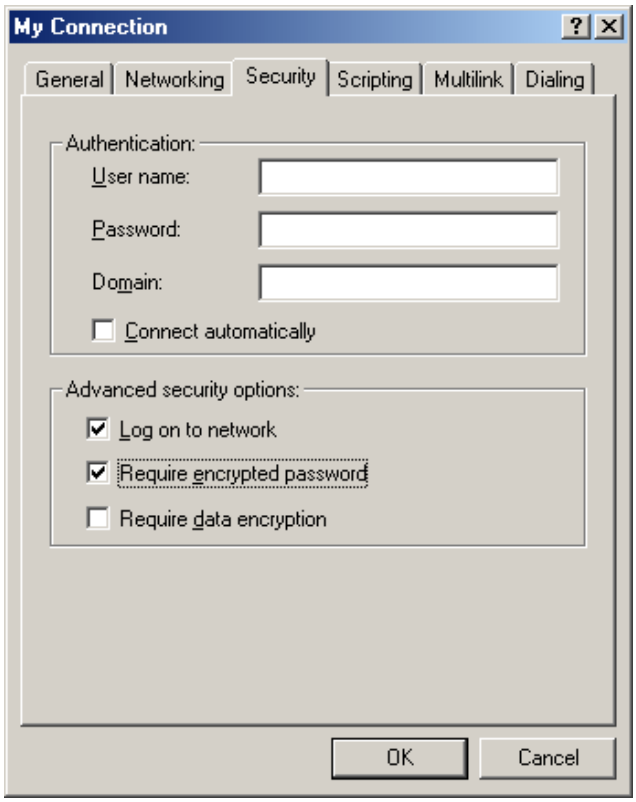
9. Click on the **Security** tab. Check the following advanced options:

   - **Log on to network**. This option allows you to access all the shared resources (such as files, printers) attached to the remote access server.
   - **Require encrypted password**.

Uncheck **Require data encryption**, unless otherwise stated by the remote access server manager.

If you have followed these recommendations, and the remote access server manager has not given you any particular instructions concerning the previous points, the **Networking** and **Security** tabs should match the following screen shots:

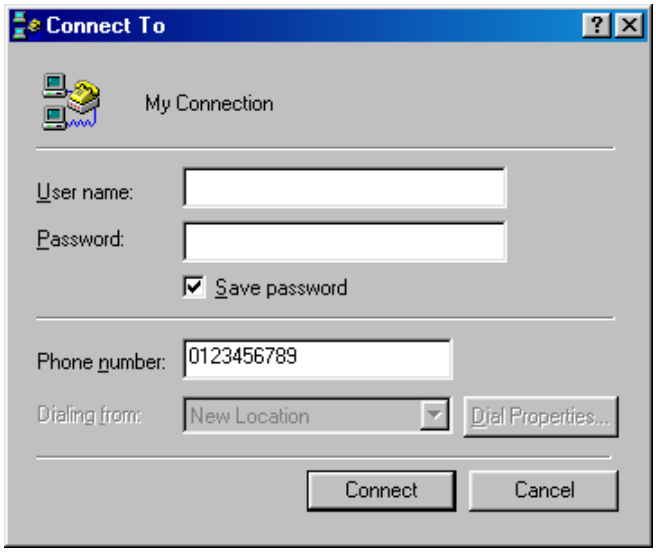




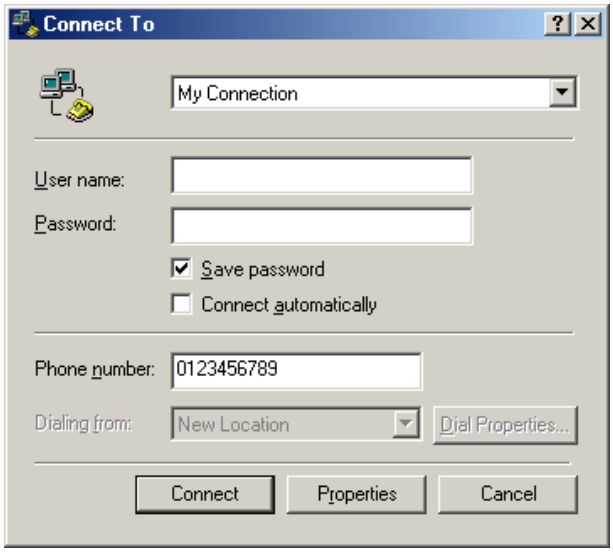
10. When you have finished, click on **OK** to confirm the new settings and close the window. You are now ready to establish your first connection (see "Establishing the Connection" on page 28).

Establishing the Connection

1. Double-click on the connection that you have just created. The corresponding connection window opens (see screen shots below).



Under Windows 98



Under Windows Me

2. If this is your first connection, you must enter the name that your ISP (or the remote access server manager) has given you in the **User name** field.

   Notes concerning the Internet connection:

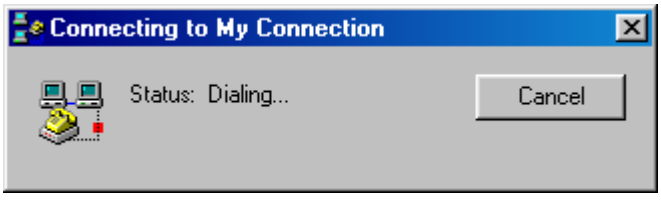
   - The terminology used by the different ISPs can vary. You may come across different expressions: client's account, connection identifier, etc.
   - Do not confuse the connection identifiers (user name and password) with the e-mail identification parameters that your ISP has supplied you with.
   - When you enter the connection identifiers, remember they are case-sensitive, i.e. they will use lowercase, uppercase or a mixture of lower and uppercase letters.

3. In the **Password** field, enter your password.
4. If you do not want to enter your password at each connection, check the **Save password** option.

   Note:

   - If you do this, anybody who has access to your PC will be able to connect to the Internet using your account.
   - When the **Client for Microsoft Networks** element is not installed in the PC's network configuration, the **Save password** checkbox is dimmed. Please refer to Microsoft documentation for more information.

5. Click on **Connect** (you do not need to deal with the other parameters). The telephone number is dialled.



6. When the call is received by the ISP (or by the remote access server), your identification parameters are verified.

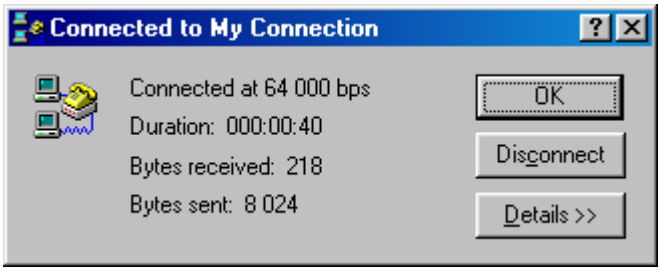
7. If the identification parameters entered are correct, the connection is established within a few seconds (the waiting time varies according to the type of connection and the options chosen). The window disappears automatically. To the right of the task bar, the remote access indicator is displayed and the BT Digital Access USB icon changes (see figure below).

BT Digital Access USB icon Remote Access Indicator

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 43 – the help facility explains the reason for the failure that is given).*

8. The task bar indicators enable you 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 "Software Installed" on page 16 and "Identifying and solving problems" on page 43).
- 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

Internet

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.

Remote Access Server

Once the connection has been established, open the Windows **Network Neighborhood** manager, which is usually displayed on the desktop. Alternatively, it can be accessed from the **My Computer** window.

After a few moments, the remote access server to which you have just connected appears in the list of connected machines.

You can use any of the remote resources (such as files, printers) as if they were local.

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 (or remote access providers) automatically disconnect you after a certain period of inactivity.

Internet Connection at 128kbps

You need to read this chapter if you want to connect to the Internet at 128kbps. You will need to check with your ISP to see if they support 128kbps access.

The connection is made using Microsoft's **Dial-up Networking** in multilink PPP protocol (simultaneous use of two 64kbps ISDN channels grouped into one 128kbps logical pathway). This is also known as 'channel bonding'.

Notes:

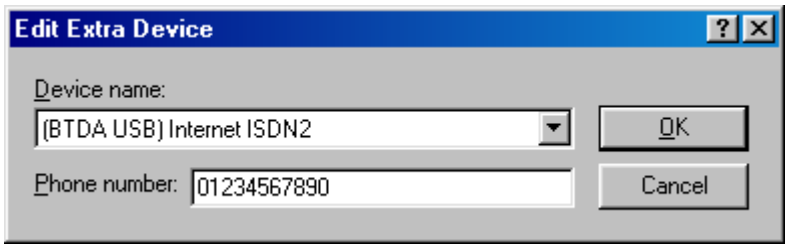
- *A 128kbps connection may require a special subscription with your ISP.*
- *When making a 128kbps connection you are making two calls, and hence will be billed for two calls.*
- *As both available channels of your line are being used, you will not be able to make or receive other calls (a telephone 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.*

Creating and Setting up a Connection

The creation of a 128kps Internet connection involves two steps: first a 64kbps connection is created (see 'Internet Connection at 64kbps' on page 22) and then it is converted into a 128kbps connection.

Let's take the example of a connection in PPP protocol at 64kbps created in the previous chapter. For this connection, you selected the **(BTDA USB) Internet ISDN1** device in step **4** of the "Internet Connection at 64kbps" section on page 22.

1. In the **Dial-up Networking** folder, use the right-mouse button to click on the connection, then click on **Properties**. A window presenting the general parameters of the connection opens.
2. Click on the **Multilink** tab.
3. Select the **Use additional devices** option. Then click on **Add...**.
4. Select **(BTDA USB) Internet ISDN2** in the **Device name** drop-down list (see screen shot below).



5. By default, the connection's main telephone number is shown.

   If the connection of the second B channel is not carried out through the main telephone number, enter the number that your ISP has given you or the remote access server number. Do not put any spaces or commas between the code and the number. Click on **OK**.

6. When you have finished, click on **OK** to confirm the new settings and close the window. You are now ready to establish a connection at 128kbps.

Establishing, Using, and Ending the Connection

See “Establishing the Connection” on page 28, “Using the connection” on page 30 and “Ending the Connection” on page 30.

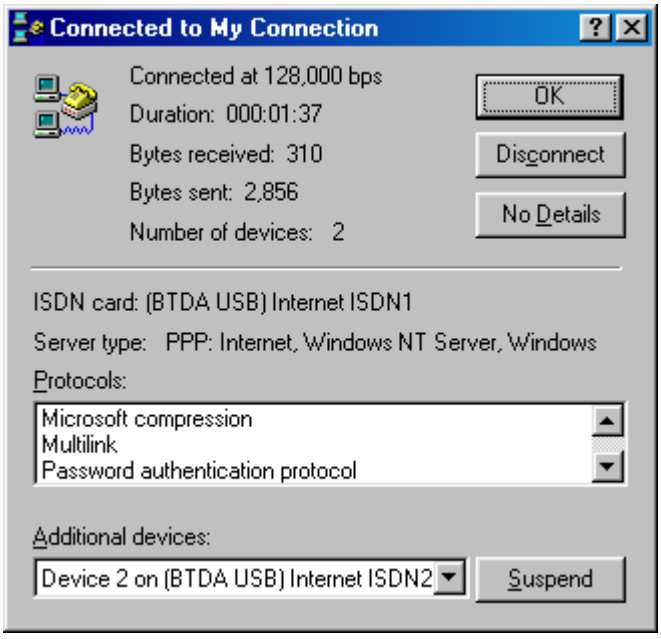
Controlling the Connection Speed

When you establish the connection, **Dial-up Networking** attempts to connect to the indicated number using the two ISDN B channels. When the connection is established, the window disappears. To the right of the task bar, the remote access indicator is displayed, and the BT Digital Access USB icon changes (see figure below).

BT Digital Access USB icon Remote Access Indicator

Depending on whether the connection has been established on one or two channels, the BT Digital Access USB icon displays one or two lighted dots. Double-click on this indicator to open the ISDN **Display panel**.

You can also check how many channels are being used by double-clicking on the remote access indicator. A window opens showing the main connection parameters. The number shown next to the **Number of devices** title corresponds to the number of channels used. Click on **Details** to obtain more information and access the additional functions (see figure below).



Click on **Suspend** and **Resume** to user guidely disconnect and reconnect the second B channel according to the tasks to perform (e.g. use one channel to surf the Internet, and two channels to accelerate downloading). This improves the communication cost/comfort of use ratio.

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.

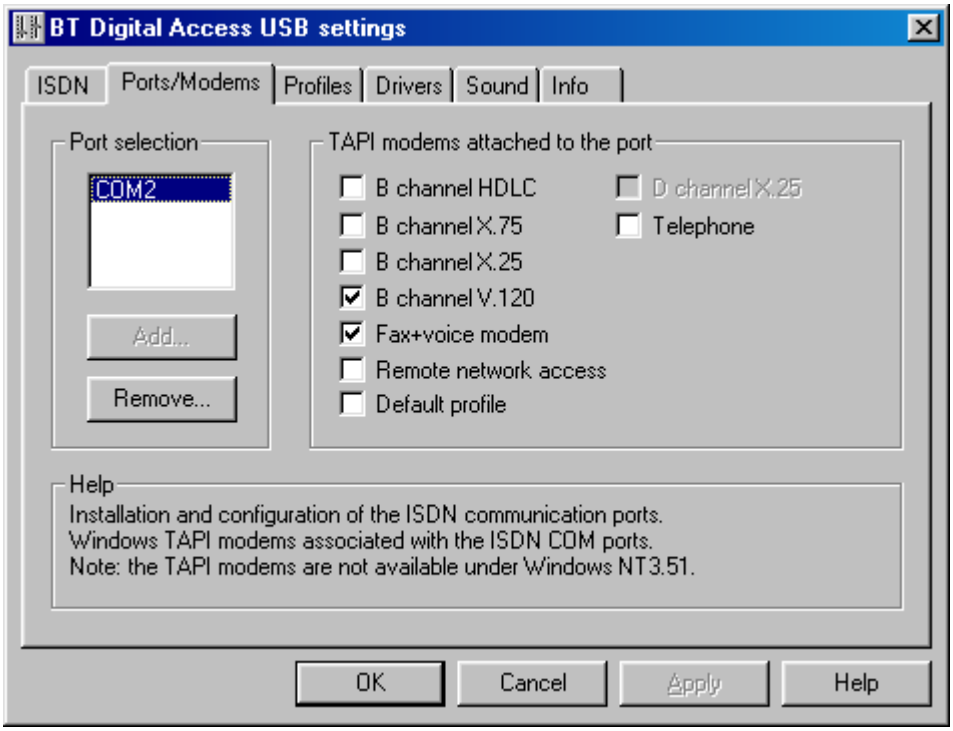
*Note: There is only one ISDN communication port. When monopolised by an application (**Dial-up Networking** using V.120 protocol, fax software, remote control software, etc.), it is no longer available for other applications. You therefore cannot use different applications simultaneously through the 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, fax software via the communication port, remote control software via the CAPI 2.0 interface...).*

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** and **B channel V.120** ISDN modem are associated with this port.

Note: if in doubt about the installation, refer to "Drivers" on page 40.

To access the BT Digital Access USB communication port settings, click on **Start→Programs →BT Digital Access USB→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 TAPI software program such as the Phone Dialer from Microsoft (see "About the Windows Phone Dialer" page 41), you must associate the **Telephone** TAPI modem with the ISDN communication port.*

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 **Port selection** area. Click on **OK** to confirm. The **COMn** port is deleted.
2. Click on **Add...** in the **Port selection** area. 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 user guide of the application you intend to use along with the BT Digital Access USB for any information on its functioning. The communication settings are not carried out in the same manner 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 communication 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) 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) Fax+voice modem**: you can send or receive faxes and exchange data using the V.32 and V32 bis protocols, with suitable software.
- **(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 function, using a software program such as the **Phone Dialer** from Windows and a properly installed sound card.

4. 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 33).

4. 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 BTDA USB modems available (each one corresponding to a specific communication profile), select the appropriate one.
    - if no BTDA USB modem exists, select the most standard modem possible (examples: standard Hayes, generic Hayes).

    In this case, to determine which communication profile the 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):

    ATB10 (BTDA USB) B channel HDLC

    ATB15 (BTDA USB) B channel V.120

    ATB12 (BTDA USB) B channel X.25

    ATB17 (BTDA USB) B channel X.75

    ATB0 (BTDA USB) Default profile

    ATB2 (BTDA USB) Fax+voice modem

    ATB13 (BTDA USB) Remote network access

    ATB16 (BTDA USB) Telephone

    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's default profile should be the one used.*
    - *For comments and remarks on ISDN profiles, refer to the previous section "TAPI-Compatible Applications" on page 35.*
5. 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→Programs →BT Digital Access USB→Settings**.

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

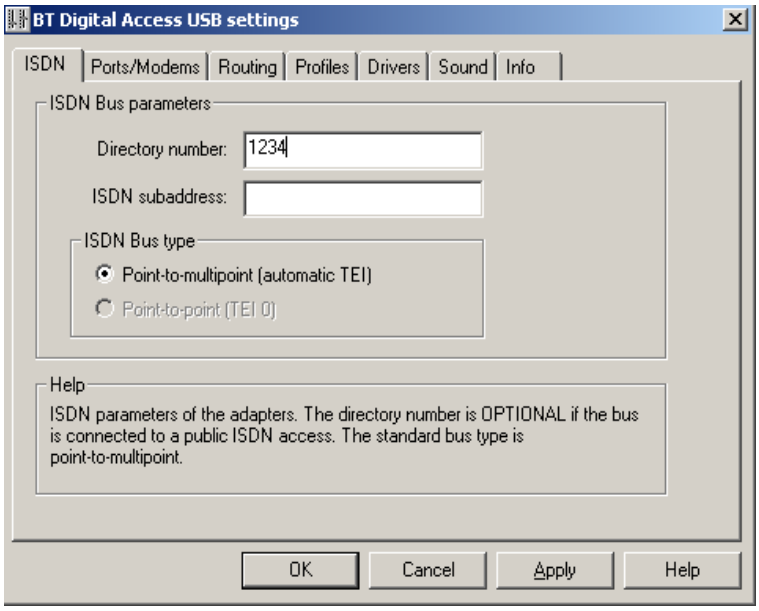
- **ISDN**: configuration of the BT Digital Access USB's ISDN telephone number (see "Configuration of the ISDN Address" on page 38);
- **Ports/Modems**: configuration of the ISDN communication port (see "ISDN Communication Port Settings" on page 33);
- **Profiles**: selection of the default profiles 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.

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**, point to **Programs** and then to **BT Digital Access USB** and click on **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.

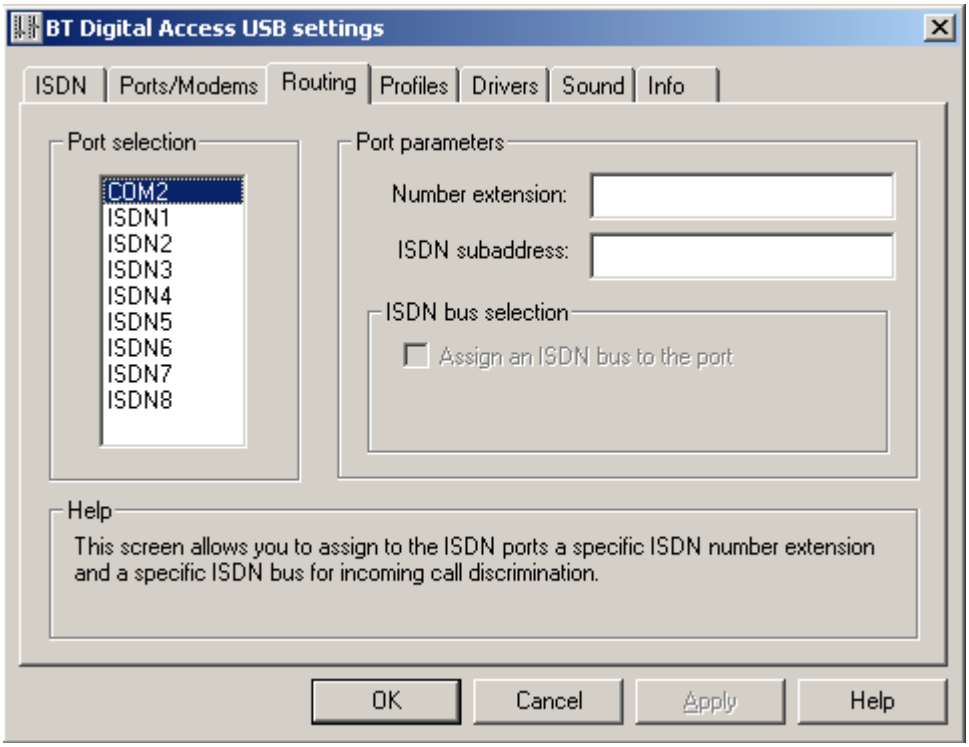


3. In the specific case where you have other ISDN terminals waiting for calls and which share the same call number, you can differentiate the BT Digital Access USB by attributing it an ISDN sub-address. This sub-address can comprise up to four freely chosen numeric characters. The caller must include it after the ISDN number (e.g. 0123456789*1234). Sub-addressing and MSN are chargeable options, please check availability with your telecom operator.
4. 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.

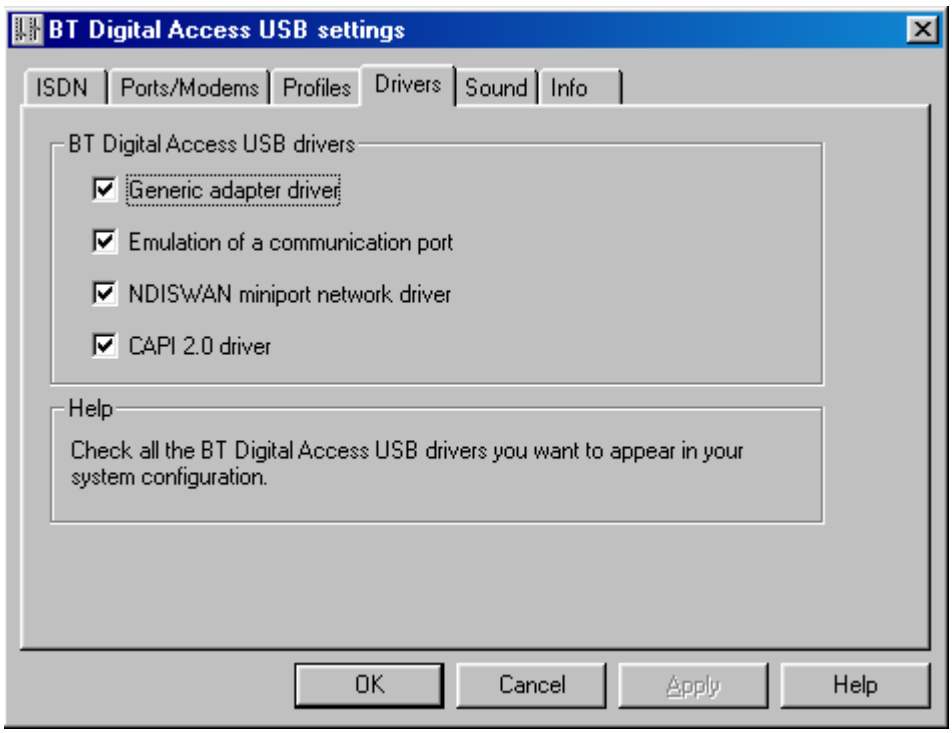


Profiles

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.



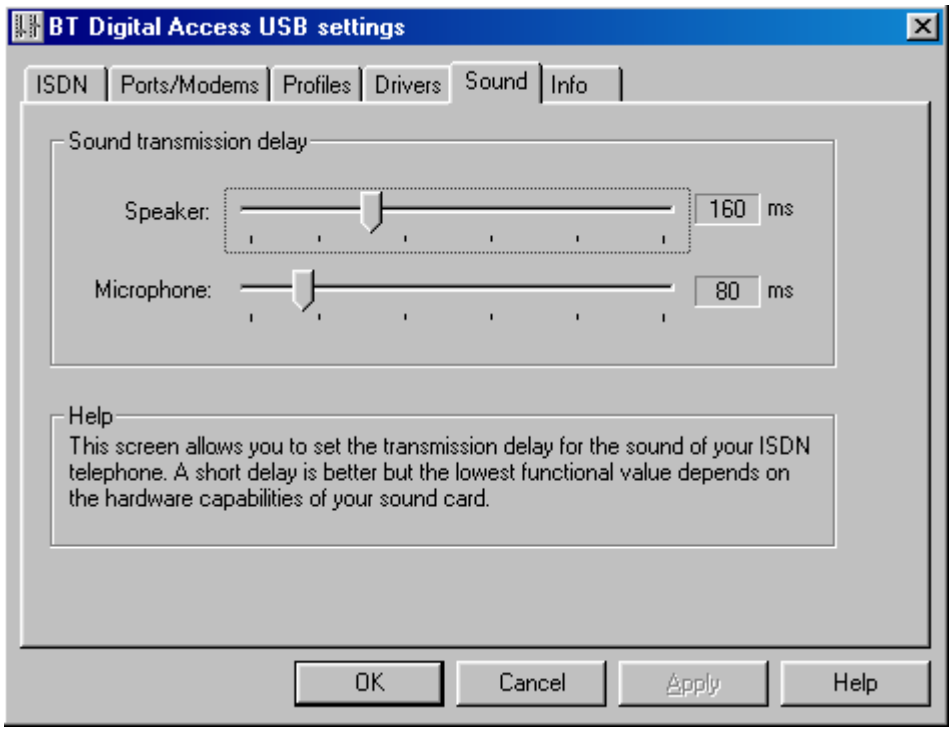
There are four BT Digital Access USB drivers:

- **Generic adapter driver**: this is essential 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 33).
- **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 in PPP protocol at 64kbps (see "Internet Connection at 64kbps" on page 22) or PPP multiline protocol at 128kbps (see "Internet Connection at 128kbps" on page 31).
- **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 37). 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).

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 software such as the Windows **Phone Dialer** (see "Telephone Application Programming Interface (TAPI) Modems" on page 34 and "Communication Settings for Applications" on page 35.

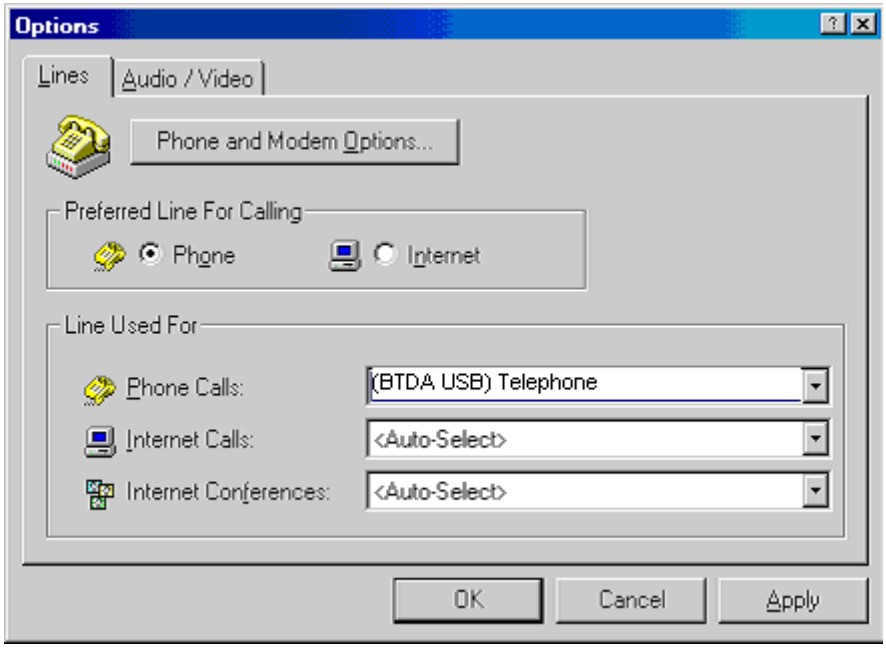
The **Speaker** and **Microphone** cursors can be used to adjust the sound transmission delay in order to optimise the sound quality in accordance with the characteristics of the card being used. A short delay is best, but the optimum setting is very variable according to the capabilities of each card.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

About the Windows Phone Dialer

The **Phone Dialer** is installed on your computer by default.

To start and configure the **Phone Dialer**, follow these steps:

1. Click on **Start**, point to **Programs**, **Accessories**, **Communications**, and click on **Phone Dialer**.
2. In the **Tools** menu, click on **Connect Using...**.
3. In the pull-down list **Line**, select **(BTDA USB) Telephone**, and then click on **OK**.



Note: in order for the ***(BTDA USB) Telephone*** *TAPI modem to be available, it must previously have been associated with the ISDN communication port beforehand.* *See "ISDN Communication Port Settings" on page 33.*

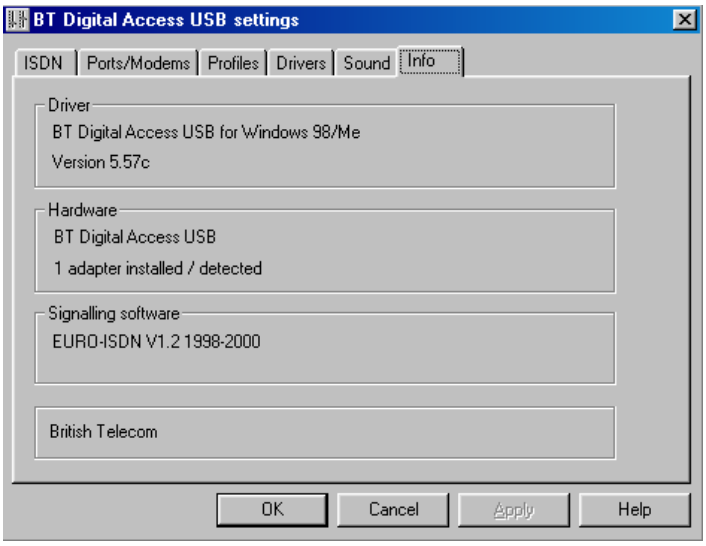
In order to install and set up the **Phone Dialer**, follow these steps:

1. Click on **Start**, point to **Settings** and click on **Control Panel**.
2. Double-click on **Add/Remove Programs**, and then click on the **Windows Setup** tab.

Select the component **Communications** and click on **Details…**.Check **Phone Dialer**, then close all the windows by clicking on **OK** each time.

Info

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



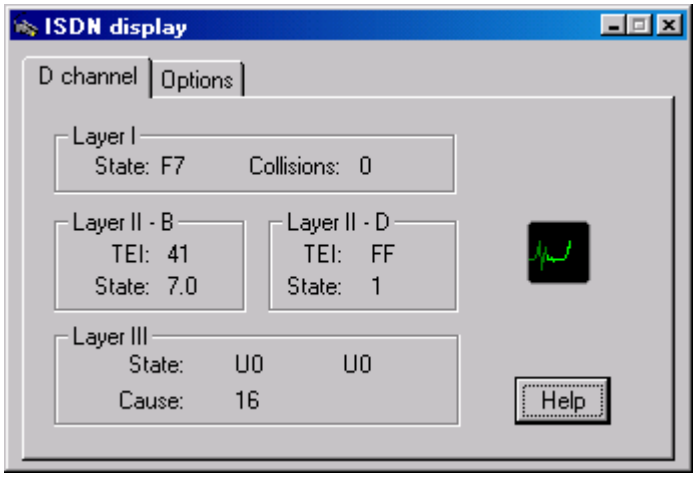
Identifying and Solving Problems

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 98/Me (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 20).

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**, point to **Programs** then to **BT Digital Access USB** and click on **Display panel**. The **ISDN Display** window is shown below:



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 LED 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.

Layer II – B Verification

Look at the value indicated opposite **TEI** in the **"Layer II – B"** area:

- an alphanumeric[1] 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 identified 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.

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.

[1] An Alphanumeric value is one composed of the digits 0 to 9 and the characters A to F.

- 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**.

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 7 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. *Note: there are eight bits in one byte of data.*
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 34 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

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