

**Trust Communicator ISDN
External**

User's Manual

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Introduction

Congratulations! By purchasing the Trust Communicator ISDN External you have obtained an advanced product that will open a world of telecommunication services to you. The Trust Communicator ISDN External is a so-called 'active' adapter. Its built-in intelligence enables the Trust Communicator to combine the high transmission speed of ISDN with the software compatibility of a normal modem.

The Trust Communicator ISDN puts the full 64,000 bps bandwidth of an ISDN channel at your disposal, which in practice makes it at least 3 times faster than a normal 28k8 or 33k6 modem. As a result, you will be able to save considerably on communication costs.

As the Trust Communicator ISDN simply connects to a serial port and emulates a standard modem, it can be used in combination with any operating system capable of working with a normal Hayes compatible modem, so you do not have to be using Windows.

In Europe, a small systems ISDN connection is called a 'Basic Rate' connection and comprises two 64 kbps data channels. Data transmission control is handled through a separate third channel which is not directly accessible to the user. The Trust Communicator ISDN External uses one 64 kbps channel, leaving the other channel available for telephone calls or fax transmissions.

Your set should contain the following parts:

1. This manual
2. Trust Communicator ISDN External
3. Mains power adapter
4. ISDN connection cable
5. Serial port connection cable
6. Windows 95 driver disk

If any of the parts are missing, please contact your dealer.

Your computer must be fitted with a fast serial port. Although the adapter will work with any computer with a fast (57k6 minimum) serial port, this manual has been written expressly with users of PC compatible computers in mind. If the serial port of your computer cannot handle a 57k6 bps throughput, contact your dealer. As a rule, any computer manufactured after 1995 will be equipped with a suitable serial port.

Chapter 1: Safety

The Trust Communicator ISDN should be connected to a 'Basic Rate' ISDN connection. Do not connect it to any other telephone system or a computer network as this may result in damage to the system.

Do not connect or disconnect equipment while the computer is switched on. This can damage the equipment.

The Trust Communicator ISDN is supplied with a mains power adapter. This power adapter is suitable only for use in Europe and in dry areas. Remove the power adapter from the mains socket before you leave on holiday or if the Trust Communicator ISDN will not be in use for an extended period of time. Do NOT use any other power adapter than the one supplied and do NOT use this power adapter for any other purpose (e.g. to power a Walkman etc.), as this carries the risk of fire. When installing the Trust Communicator ISDN, make sure the connecting cables are not in the way and cannot get caught under the leg of a chair or desk.

During heavy electric storms it is best to disconnect both the power supply from the mains and the ISDN cable from its wall socket in order to prevent damage from lightning discharge.

Chapter 2: Hardware Installation

The installation requires no tools or specialist knowledge.

Connect the serial cable supplied to a free serial port on your computer. This can be either a 9-pin or 25-pin socket. The other end of the cable is connected to the RS-232 socket on the real panel of the Trust Communicator (see Figure 1). Next, connect the power adapter to the Power Jack connection on the real panel and plug the power adapter into a mains power socket. Finally, connect the Trust Communicator to the S0 bus of your ISDN line, using the cable supplied. The cable should be connected between the ISDN (S0) socket provided by your telephone company and the ISDN connector on the rear panel of the Trust Communicator.

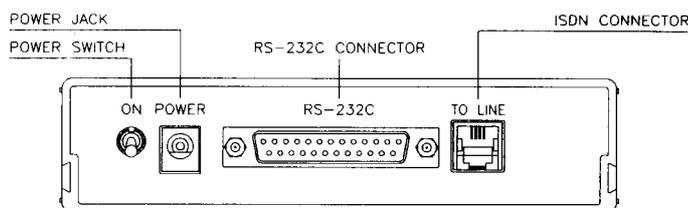


Figure 1 Rear view of the Trust Communicator ISDN

Chapter 3: Software Installation

The Trust Communicator ISDN operates just like a normal modem and is set to use the PPP protocol as standard. The PPP protocol is used for most Internet connections. So, if you wish to connect to the Internet, you will not be needing any special software and the ISDN adapter can simply be used like a normal modem.

3.1 Adding the ISDN adapter in Windows 95

A special driver disk is supplied for use with Windows 95. This disk contains the definitions for all the settings and the most popular protocols. This has the advantage that you will be able to get going without any specialist knowledge about the internal settings of the Trust Communicator ISDN adapter. The diskette with settings can be activated as follows:

1. Make sure you are using real Windows 95 for communication on your computer, as opposed to e.g. a DOS application running in a Windows 95 window.
2. With your mouse, click on 'Start'.
3. Select 'Settings'.
4. Next, select 'Control Panel'. The icon window will appear.
5. Double-click on the 'Modems' icon. The modem settings will be shown. If the ISDN adapter is the first 'modem' to be installed on the system, continue with step 7.
6. Click on 'Add Modem'. A new window will be opened. The computer will ask if you want it to perform an automatic modem search.

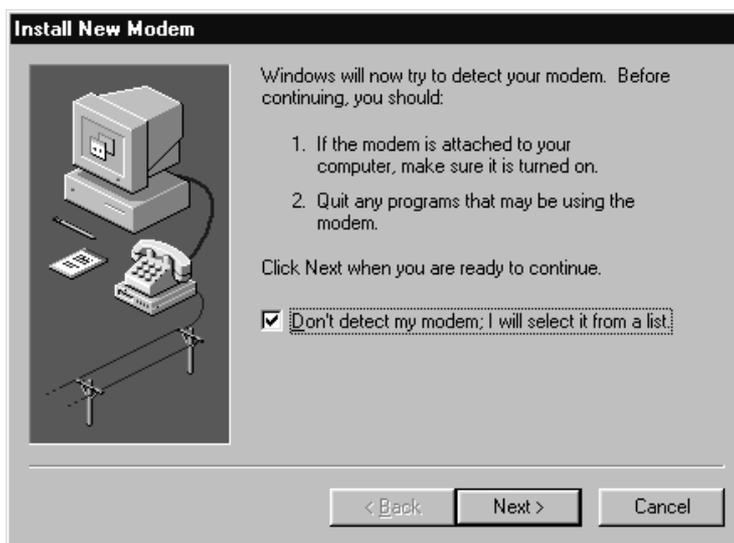


Figure 2 Modem Detection Window

7. Click on 'Don't detect my modem, I will select it from a list'.
8. Click on 'Next'. This will bring up the next screen.
9. Click on 'Have Disk'. The computer will ask for the diskette to be inserted.



Figure 3 When you click on 'Have Disk', Windows 95 will ask for the diskette.

10. Insert the 'Windows 95 driver disk' into disk drive A:. You will find the diskette in the Trust Communicator ISDN package. Next, under 'Copy manufacturer's files from:' enter 'a:\win95drv'.

11. Click on 'OK'. A list will come up showing the available modem definitions for each protocol. Use the mouse to select the protocol you need and click on 'Next'. If you are uncertain about which protocol to use, look up the specifications of the service you plan to use. If you are going to connect to the Internet, select 'Communicator ISDN PPP'. This option will work in most cases.
12. The computer will now ask which port to use. Select the port to which you have connected the ISDN adapter. In many cases this will be COM2.
13. Click on 'Finish'. The system will complete the modem installation process.
14. If this is the first 'modem' to be installed on this system, you will be asked for information on the present location.
15. If you plan to connect to several services using different protocols, go back to step 6 for each protocol you will be using. You will not have to enter different AT command settings while you are running Windows 95.

3.2 Adding Dial-Up Connections in Windows 95

You have now installed a modem. For most Windows 95 communication applications you will have to add a dial-up connection. If you will be using more than one on-line service, you must add a dial-up connection for each of these services. To do so, follow these instructions:

1. Click on 'Start'.
2. Select the 'Programs' option.
3. Select 'Accessories'.
4. From the new list, select 'Dial-Up Networking'. A window will appear. If this is the first dial-up connection on your computer, continue with step 6.
5. Double-click on the 'New Connection' icon.
6. Enter a name for your new connection. This can be any name you like.
7. From the list, select the modem you installed under 3.1. Click on 'Next'.

8. Enter the telephone number, the area code, and the country. Make sure this information is correct. Of all modem problems, 60% are caused by incorrect telephone number or area code settings.
9. Click on 'Next'. A window will appear with a message that the operation was successful.
10. Your connection is ready and you can now exit this section.
11. You can test the connection by double-clicking on the icon for your connection.
12. Enter the user name and password when the system prompts for them. This information will have to be obtained from the service provider you wish to connect to. Remember that with most service providers, both the user name and password are case-sensitive!
13. Read your application manual to see what settings to use for the connection you have just added to the system.

Note:

'Dial-Up Networking' may not have been installed on your system so it cannot be found in the list. If this is the case, this option must first be installed before you can continue. In 'Control Panel', select the 'Add/Remove programs' option. Consult the Windows 95 manual for more information. Microsoft's Internet Explorer 3.0 will automatically install all the necessary components if you select the 'Automatic Installation' option. If you do so, no manual intervention will be required for settings etc.

3.3 Other Windows versions

The diskette contains installation information for using the Communicator ISDN with the following operating systems:

Operating System	Folder
Windows 95	a:\
Windows NT 3.5	a:\nt35drv
Windows NT 4.0	a:\

Consult the operating system manual for information on installing drivers from diskette.

3.4 Non-Windows Use

The standard setting for the Trust Communicator ISDN adapter is to use the PPP protocol for Internet connections. If your service uses a different protocol, you will have to change the setting manually. The settings for ISDN can be altered using the AT command set. Start a terminal or modem program, e.g. Telix for DOS or Terminal in Windows 3.11. Type the letters 'AT' and press Enter. The ISDN adapter should respond with 'OK' to indicate correct operation. Next, enter the appropriate commands for the settings required:

Protocol	Command	Service
PPP async-to-sync HDLC	AT\N3	(Internet)
X.75 / T70NL	AT\N22**bsize=128	(T-Online Videotex)
X.120	AT\N13**bsize=256	(Compuserve and other services)
Point-to-point	AT&FS0=1\N10**bsize=2048	(for X.75)
Point-to-point	AT&FS0=1\N13**bsize=256	(for X.120)

A full list of all AT commands can be found in appendix A.

Save the new settings with the AT&W command.

Next, install the communication programs you plan to use in combination with your ISDN connection, setting it to point to the COM port to which you have connected the Trust Communicator ISDN. Double-check the telephone numbers and passwords; the difference between malfunctions due to a wrong number or an incorrect password or user name often is impossible to detect with an ISDN connection.

As the Trust Communicator ISDN is an active ISDN adapter which interfaces with the computer like a very fast analog modem, installing it and selecting the right settings will usually be as simple as with a normal modem.

If you encounter a problem, please make sure the service you are trying to connect to supports ISDN access *through the number you have entered*. Some services use the same number for both analog and ISDN connections, whereas other services require you to dial a different access number for ISDN.

Chapter 4

Using the Hardware

The Communicator ISDN has only one switch: the ON/OFF switch on the rear panel. All other settings must be entered via software commands.

The Communicator ISDN features a number of indicator lights on the front panel. As with analog modems, these show the connection and power status. The significance of the indicator lights is as follows:

Light	Significance
PR	Lights up while the Trust Communicator ISDN is switched on.
TR	Lights up when the computer is ready to transmit data to the Trust Communicator ISDN.
SD	Blinks while data are being sent.
RD	Blinks while data are being received.
RI	Blinks when the Trust Communicator ISDN receives an incoming call.
CD	Lights up when a connection is established with another ISDN adapter.
B1	Lights up to indicate proper connection to the ISDN S0 bus. Blinks if the connection to the ISDN S0 bus is faulty.
B2	Lights up to indicate that a connection has been established.

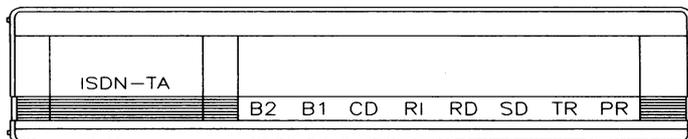


Figure 4 The front panel of the Trust Communicator ISDN. The indicators on this panel show connection and line status.

Chapter 5: Using the Software

The Trust Communicator ISDN is supplied without any communication software. You will have to provide the software yourself. You can use any program that can handle communications through an analog 28k8 modem.

The Trust Communicator ISDN can only establish connections with other ISDN adapters. Please make sure in advance that the service you wish to connect to provides facilities for ISDN connections.

Microsoft Internet Explorer 3.0 and the Netscape programs have shown good results when used to surf the Internet with the Trust Communicator ISDN. Do not use older versions of Netscape or Internet Explorer (version 2.0 or less), as these cannot handle modern Internet (WWW) pages.

Internet access works better with Windows 95 than with 3.11. The better multitasking performance of Windows 95 means you can use this operating system to perform several Internet actions simultaneously, e.g. you can download a file while you are browsing through WWW pages.

Chapter 6: Important Notice

The Trust Communicator ISDN carries the European CE mark of approval for ISDN and complies with the following European standards:

EN-55022 class B

EN-50082-1

EN-60950 (adapter)

As the Trust Communicator ISDN carries the European mark of approval for ISDN, it can be connected to a 'Basic Rate' ISDN line within the countries of the European Community.

Chapter 7: Maintenance

Normally, the Trust Communicator ISDN requires no maintenance. Any dust collected on the modem can be removed using a soft cloth. Do not immerse the Trust Communicator ISDN into liquid and do not use alcohol or any other solvent to clean it, as this may cause damage.

Special care should be taken when cleaning the power adapter; the use of water or any other liquid carries the risk of electric shock.

Chapter 8: Solving problems

8.1 Modem and computer

The modem can be tested using a terminal program. Type 'AT' followed by <Enter>; the modem should respond with 'OK'. If no response is obtained, either the serial port setting is incorrect, or the connections are faulty.

- A. None of the indicators lights up.
- Make sure the device is switched on.
 - Make sure the power supply adapter is firmly plugged into the mains socket.
 - Make sure the power supply plug is firmly connected to the device.
- B. Modem does not respond. Power indicator lights up, but the TR indicator does not.
- Check the serial cable and its connections.
 - Check the software COM port settings.
 - Test the COM port with another device.
 - Switch the ISDN adapter off and back on and try again.
 - For Windows 95 users: make sure the modem and its communication port have been correctly configured in Windows 95 using the 'Start -> Settings -> Control Panel -> Modems -> Diagnostics' menu options. Find the ISDN adapter in the list and click on the correct port. Next, click on 'More info'. If the ISDN adapter is not listed at all, or if Windows 95 responds to the 'More info' request with an error message, reinstall the Trust Communicator drivers (see Figure 5).

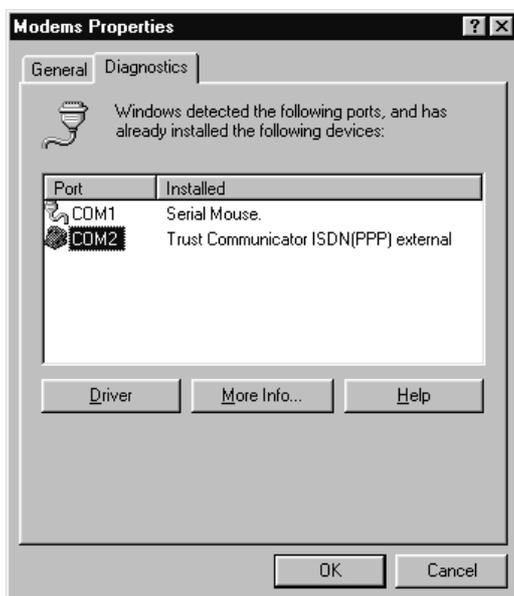


Figure 5 Diagnostics window in Windows 95. This can be used to test the proper operation of any modem connected to the system by first selecting the appropriate COM port and then clicking on 'More info'.

8.2 Connection

- A. Error message 'No dialtone', B1 blinks.
 - Check the ISDN line and its connections.
 - Has the ISDN line been connected by the phone company?
 - Switch the ISDN adapter off and back on and test again.
- B. Adapter rings, but no connection is established. CD indicator never lights up.
 - Check the telephone number and the area code.
 - Make sure there is an ISDN adapter at the other end of the connection.
 - Make sure the telephone number has not been made inaccessible (e.g. surcharge numbers).
 - Use direct access to the ISDN S0 bus. ISDN adapter connections via (ISDN) PABXs often cause problems.
- C. Adapter rings, but no connection, CD indicator briefly lights up.

- Check the password and user name. These often are case-sensitive!
- Check whether your protocol setting matches the protocol which the remote computer expects (PPP, X75, X120).
- For Windows 95 network systems: check which network service you need (TCP/IP, IPX, NETBEUI) and check the workgroup or domain information settings. Contact the network administrator for more information.

Chapter 9: Specifications

Trust Communicator ISDN External

ISDN interface	S/T interface ITU-T I.430
ISDN standard	DSS1 (Euro ISDN)
B channel protocol	PPP asynchronous-to-synchronous HDLC transparent
	ITU-T V.120/64,000 bps
	ITU-T X.75/T.70NL
DTE data rate	1200 - 115200 bps (asynchronous)
Data format	8 data bits; 1 or 2 stop bits; no parity
B channel speed	64,000 bps (synchronous)
Computer interface	ITU-T V.24/EIA-232D/DB25 connector
Command set	AT command set, PAD (ITU-T X.3/X.28/X.29)
Data rates	115,200 to 1200 asynchronous
Operation	Half duplex or full duplex operation
Extra memory	Modifiable non-volatile memory stores One configuration profile
Line requirements	ISDN Basic Rate line