

# BIANCA/BRI

for Windows 95

**Getting Started** 

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#### NOTE

The information in this manual is subject to change without notice.

This manual provides a description of the installation and configuration of the BIANCA/BRI for Windows 95 software version 3.1 and of the included utilities

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#### **BIANCA/BRI for Windows 95**

Welcome! This manual helps you to quickly install and configure your new BIANCA ISDN board and accompanying software.

The first section (on <u>page 2</u>) gives a short overview of the different software components.

The second section (from <u>page 3</u>) explains how to gain the data necessary to setup your ISDN board and how to install it in your PC.

Once you have successfully installed your ISDN board you can start gathering information for the software installation. This is described from  $\underline{\text{page }11}$ .

Subsequently the installation and configuration of the ISDN software is explained.

Once you have installed and configured the ISDN hard- and software according to this manual you do not need to make further adjustments in most cases. In some special cases, however, it can be necessary to adjust certain values by using the configuration program.

At the end of this manual you will find a description of the new trace and monitor tools.

#### The Software

BIANCA/BRI for Windows 95 comprises the following programs.

- Installation and *Configuration programs*, as described in this manual. You can also later use the configuration program to change your configuration, if necessary.
- Board drivers for the BIANCA ISDN boards.
- CAPI<sup>1</sup> 2.0 and CAPI 1.1 as *DualMode-CAPI*—both interface versions are available at the same time.
   Many communications programs—including RVS-COM (see below)—use CAPI to access ISDN.
   CAPI 2.0 supports Euro-ISDN (DSS1), while CAPI 1.1 supports the first german ISDN standard (1TR6).
- It is possible to use *V.42bis data compression* on both B channels simultaneously.
- ISDN and CAPI trace and monitor utilities.
- *BIANCA/NDIS*<sup>2</sup> can be used to connect your computer to a TCP/IP network via ISDN.
  BIANCA/NDIS supports most current TCP/IP stacks, such as Microsoft TCP/IP or OnNet 32.
- RVS-COM for Windows 95 (Lite Version) is an application that runs using the CAPI interface and provides various telecommunications services, such as T-Online (formerly Btx or Datex-J), Fax, Voice Mail, and Eurofiletransfer.



You have to install the BIANCA/BRI software before you can install RVS-COM. Complete instructions can be found in the online documentation included on the disks.

 <sup>&</sup>lt;u>C</u>ommon ISDN <u>Application <u>Program Interface</u>, standard software interface for ISDN applications.
</u>

<sup>2. &</sup>lt;u>Network Device Interface Specification, Microsoft Standard for using network adapters with communications software.</u>

#### Hardware Installation

#### Preparing the Hardware Installation

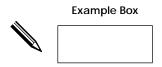
Before installing your new ISDN board you have to locate free system resources for the ISDN board (i.e. a free interrupt and a free memory slot of 16kB for the BRI and BRI-SLC boards, or 64kB for the PMX board).

An easy way to locate these resources is given below. You can then proceed to install the ISDN board(s) in your PC.

Following this you should read the section on gathering information for BIANCA/NDIS configuration.



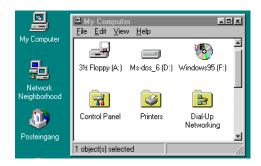
In some of the following sections there are empty boxes where you can enter the values appropriate for your installation, so you have them handy when starting the installation.



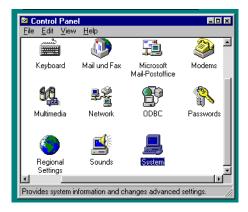
#### **Locating free System Resources**

For the following steps your PC must be powered up and running Windows 95.

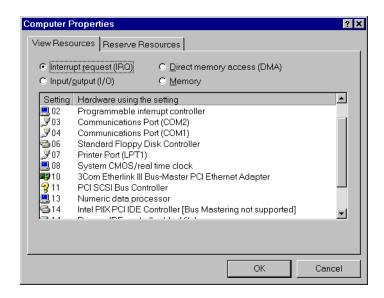
1. Open the »My Computer« icon (»Arbeitsplatz« in German Windows 95 versions), then open the »Control Panel« (»Sys-



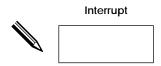
temsteuerung«) and »System«.



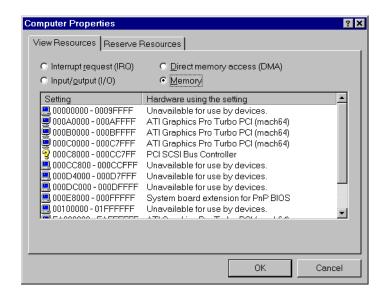
2. In the »System Properties« (»Eigenschaften für System«) dialog first select the »Device Manager« (»Geräte-Manager«) page and then double-click on »Computer«. This leads you to the »Computer Properties« (»Eigenschaften für Computer«) dialog.



3. On the »View Resources« (»Ressourcen anzeigen«) page select the »Interrupt« button. Now all the IRQ settings currently in use on your computer are displayed. Locate an unused IRQ (i.e. an IRQ not displayed here) in the range of 3-7, 9-12, 14, or 15 for each of your BIANCA ISDN boards.



4. Now select the »Memory« (»Speicher«) button.



For each BIANCA/BRI and BRI-SLC board you need to locate a free memory area of 16kB, in one of the following ranges:

000C0000 - 000C3FFF	000D0000 - 000D3FFF	000E0000 - 000E3FFF
000C4000 - 000C7FFF	000D4000 - 000D7FFF	000E4000 - 000E7FFF
000C8000 - 000CBFFF	000D8000 - 000DBFFF	000E8000 - 000EBFFF
000CC000 - 000CFFFF	000DC000 - 000DFFFF	000EC000 - 000EFFFF

For each BIANCA/PMX board you need to locate a free memory area of 64kB, in one of the following ranges:

000C0000 - 000CFFFF	000E0000 - 000EFFFF
000D0000 - 000DFFFF	



If you cannot find a free memory area for your ISDN board, you can also select a memory area in the 15 to 16 MB range (between 00F00000 and 00FFFFFF) if your BIOS allows this.





If you want to install more than one BIANCA ISDN board in your PC please note that each board needs a different free IRQ and also a memory area of its own.

Once you have located and noted an IRQ and memory area for you BIANCA ISDN board(s), you can power down your PC.

#### **Configuring the Hardware**

#### BIANCA/BRI and BIANCA/BRI-SLC

Setting the interrupt (IRQ) and memory address is identical for the BIANCA/BRI and BIANCA/BRI-SLC boards. The default setting is interrupt 10 and memory address 000D4000.

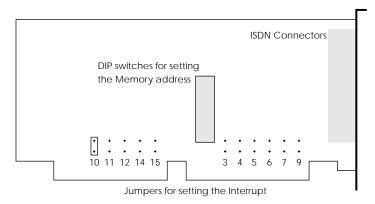


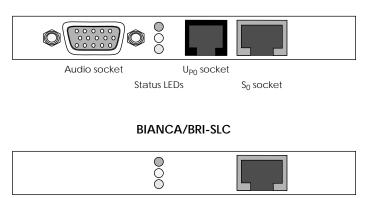
Figure 1: Schematic representation of Interrupt jumper and DIP switch locations on the BIANCA/BRI and BIANCA/BRI-SLC boards.

Set the interrupt by fitting the jumper on the appropriate pair of pins, as shown in <u>Figure 1</u>, and the memory address by carefully moving the DIP switches into the positions corresponding to the desired address (see table below).

Address	Switch 1 10	Address	Switch 1 10
000C0000	on off	000D8000	on off
000C4000	on off	000DC000	on off
000C8000	on off	000E0000	on off
000CC000	on off	000E4000	on off
000D0000	on off	000E8000	on off
000D4000	on off	000EC000	on off

Connectors on the backplane of the ISDN boards are as follows:

#### **BIANCA/BRI**





Be careful *not* to connect a 10Base-T (twisted pair) ethernet cable to the  $S_0$  socket, since this may cause damage to your ISDN board or ethernet bridge.

So socket

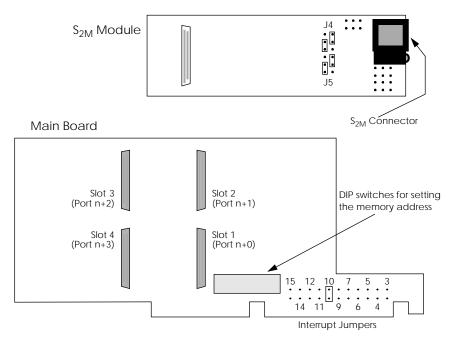
Status LFDs

#### **BIANCA/PMX**

The  $S_{2M}$  adapter BIANCA/PMX consists of a main board with four extension slots and up to four communications modules.

The standard configuration comprises the main board—on which you set the interrupt and memory address—and one  $S_{2M}$  module (please note, that the jumpers J4 and J5 *must* remain in the positions depicted in Figure 2).

The default setting for BIANCA/PMX is interrupt 10 and memory address 000D0000. If your system requires different settings, set the interrupt by fitting the jumper on the appropriate pair of pins, as shown in Figure 2, and the memory address



**Figure 2:** Schematic representation of Interrupt jumper and DIP switch locations on the BIANCA/PMX main board and S<sub>2M</sub> module.

by carefully moving the DIP switches into the positions corresponding to the desired address (see table below).

Address	Switch 1 10	Address	Switch 1 10
000C0000	on off	000E0000	on off
000D0000	on off		

#### Pin Assignment of the S<sub>2M</sub> Connector

The pin assignment of the  $S_{2M}$  interface of newer  $S_{2M}$  modules (indicated by »*Prime/two rev: 1.5*« near one corner of the module) differ from those of older ones (indicated by »*Prime/two*«),

because the relevant norm (IEC 10173) was issued *after* the development of the first set of modules.

The correct pin assignment is given in <u>Figure 3</u> below.

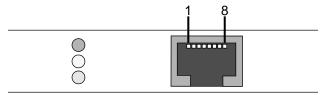


Figure 3: Pins of the S<sub>2M</sub> Connector

Pin	Function
1	Receive, NT to TE (+)
2	Receive, NT to TE (-)
3	Not used
4	Transmit, TE to NT (+)
5	Transmit, TE to NT (-)
6–8	Not used



Be careful *not* to connect a 10Base-T (twisted pair) ethernet cable to the  $S_{2M}$  socket, since this may cause damage to your ISDN board or ethernet bridge.

#### **BIANCA ISDN Adapter Installation**

If there are no other adapters installed in the computer at the memory address and interrupt set on your BIANCA board, follow these steps to install the ISDN board:

- 1. Turn your computer off, pull the mains plug and open the case according to the manufacturer's instructions.
- 2. Check that the correct address and interrupt are set on the adapter.

(For PMX adapters: check if the jumpers are set on the S<sub>2M</sub>

module as in Figure 2. Plug the  $S_{2M}$  module onto the main board. Start with Slot 1.)

- 3. Insert the board into an empty slot.
- 4. Connect the ISDN board to your ISDN subscriber outlet with the cable shipped with your product.
- Close the case, switch your computer on and continue as described in the following sections.



Connecting a VGA monitor to the audio interface during operation can cause damage to the BIANCA/BRI board and to the monitor.

#### Software Installation

#### Preparing the BIANCA/NDIS Installation

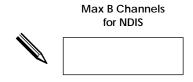
The following parameters are only required for establishing IP connections over ISDN with BIANCA/NDIS and a TCP/IP stack. If you do *not* want to use TCP/IP via ISDN, please proceed as described in *Installing the Software* on page 15.

The BIANCA/NDIS settings consist of your local system's parameters and the parameters for each communications partner.

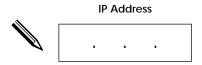
#### **Local System Parameters**

For your local system there are a maximum of six parameters depending on which applications you will be using.

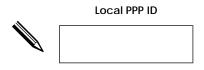
First decide how many of your available ISDN B channels BIANCA/NDIS may use. If you enter a number smaller than the number of ISDN channels, then the leftover channels will be made available to other applications (e.g. for use with RVS-COM or for incoming calls).



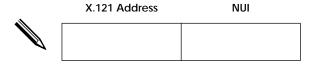
Write down the IP address your computer can be reached at over ISDN. Please note that this address must be unique, i.e. you can't use a number already assigned to a host on your LAN.



If you want to use PPP, your computer will also require a special name, or »PPP-ID« which will be used by the PPP protocol to identify your system at connection time. Your computer's PPP-ID may be up to 16 characters long.



To use X.25 an X.121 address and a  $NUI^1$  is also required. Normally these are assigned by your local ISDN provider.



The last parameter is your ethernet address. In most cases the default setting provided by NDIS can be used.

The only exceptions are the *Norton Administrator* and *HP-Software-Distribution* software packages. These management

<sup>1.</sup> Network User Identification

tools use the ethernet MAC address for distributing, identification, and registration of software.

#### **Communications Partner Parameters**

You will need a set of parameter settings for each communications partner. A communications partner is literally each computer you wish to establish TCP/IP connections over ISDN with. Please write down the parameter settings for all communications partners on a separate piece of paper.

The following settings are required:

- 1. Unique Partner Name.
- 2. Partner's IP Address.
- A telephone number where your partner can be reached at (for outgoing calls) and a telephone number from which your partner normally calls from (will be used for identifying incoming calls).

Please note that the numbers for incoming and outgoing calls may be different if a PBX is connected to your subscriber outlet.

- 4. The EAZ for incoming calls.
- 5. The desired ISDN service. The available services are as follows:

ISDN telephony
Analog telephony
a/b services
Facsimile group 2/3
Facsimile group 4
BTX
Data transfer

X.25 service (UC 8)
X.25 service (UC 9)
X.25 service (UC 10)
X.25 service (UC 11)
X.25 service (UC 13)
X.25 packet mode (X.31 Case B)

If you need a different service you can also specify a valid combination of Service Indicator and Additional information.

6. The B channel protocol to use. The following protocols are supported:

X.75 SLP (LAP-B)
HDLC (raw CRC frames)
UIFRAMES
X.25 packet layer protocol
T.70 network layer
CISCO HDLC encapsulation
PPP (point to point protocol)
PPP asynchronous
PPP analog modem V.22bis (2400 Baud)
PPP asynchronous 38400 Baud V.110
PPP asynchronous 19200 Baud V.110
PPP asynchronous 14400 Baud V.110
PPP asynchronous 9600 Baud V.110
PPP asynchronous 4800 Baud V.110
PPP asynchronous 2400 Baud V.110
PPP asynchronous 1200 Baud V.110

When using Point-to-Point protocols your computer's PPP-ID, the PPP-Password for your partner, and the type of authentication (CHAP $^1$ , PAP $^2$  or both) to use are also required.

<sup>1.</sup> Challenge Handshake Authentication Protocol

<sup>2.</sup> Password Authentication Protocol

#### Installing the Software



Before commencing with the installation you should make backup copies of the BIANCA software disks and keep the originals in a safe place.

Use the backup copies for your installation.

#### Setup

Insert the first disk into your disk drive and select »Start« and »Run ...« (»Ausführen ...«) from your task bar and enter

a:\setup

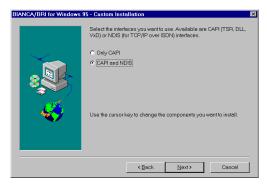
to start the installation procedure.

The installation program guides you through the installation and configuration process. In most cases you can simply accept the default values suggested by the program to get the ISDN software up and running.



You can stop the installation procedure at any time by clicking on the »Cancel« button.

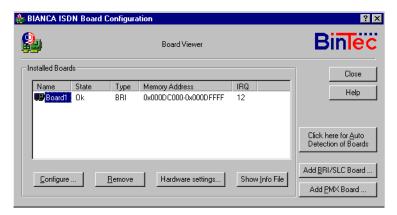
At one time the program offers you the choice of installing either both the CAPI and NDIS interfaces, or only the CAPI interface.



If you want to use TCP/IP via your ISDN board you have to choose »CAPI and NDIS«, which is also the default value.

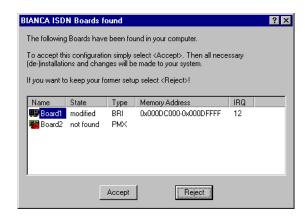
#### **Board Configuration**

Once the installation is complete the board configuration tool is automatically invoked and you can configure your ISDN board,



followed by the NDIS configuration (if you also installed NDIS).

First click on the »Auto Detection« button. The software will then find the installed BIANCA ISDN boards and their interrupt and memory settings.



If the settings displayed are correct click on the »Accept« button.

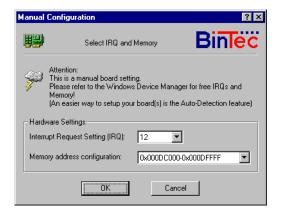
#### No Boards found

In the unlikely case that the software does *not* detect your BI-ANCA ISDN boards, check your system resources again (as described from page 3) and make sure that the interrupt and memory area for your ISDN board are not used by other cards.

If the resources you chose are available power down your PC and make sure the settings on your ISDN card match the chosen values (see page 7ff.).

After rebooting your PC start the »Board Configuration Tool« from the BIANCA program group and click on the »Auto Detection« button, again. Now your board should be detected. If not, select either the »Add BRI/SLC Board...« or »Add PMX Board...« button, depending on which type of ISDN board you have.

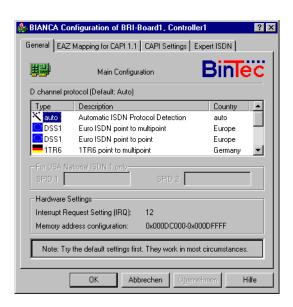
You can then select the IRQ and memory address manually.



Now you can continue to configure your ISDN board.

#### **General Configuration**

To continue configuring your ISDN board click on the »Configure...« button of the Board Viewer dialog (see <u>page 16</u>). This leads you to the following dialog, where you can set the ISDN D channel protocol to use for your board.



In most European countries you can use the »auto« setting. The software then detects and uses the appropriate D channel protocol at each system start.



In the USA you have to choose the NI-1 profile and enter your SPIDs in the appropriate fields.

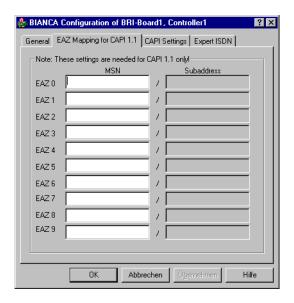
#### **CAPI 1.1 Settings**

If you want to use programs which need the CAPI 1.1 interface and do not have a German ISDN connection according to 1TR6 you will have to provide a mapping of your multiple subscriber numbers (MSN) to (some of) the *Endgeräteauswahlziffern* (EAZ) used by 1TR6 (and CAPI 1.1, which is based on 1TR6).

To do this, simply select the »EAZ Mapping for CAPI 1.1« property page and enter your MSNs in the appropriate places.

The BIANCA ISDN software usually uses EAZs 0, 1 and 2 to select different ISDN services, so you should at least enter MSNs in these fields.

It is sufficient to enter the last few digits of your MSNs, so they can be distinguished unambiguously.



#### CAPI Settings and Expert ISDN

These two pages contain several settings which need not be altered, usually. For further information on these settings please refer to the online help.

When you entered all desired values click on the *OK* button to return to the main *BIANCA ISDN Board Configuration* dialog. Configure all your ISDN boards in this way.

You can then leave the *Board Configuration* by clicking on the *Close* button.

If you want to connect your PC to a TCP/IP network via ISDN you should configure BIANCA/NDIS now. Please proceed as described in the NDIS Configuration section on page 20.

#### Finishing the Configuration

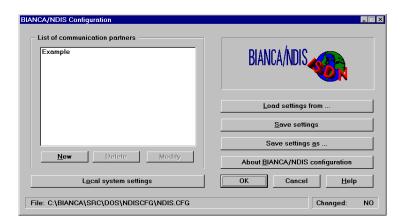
To put your board configuration into effect you will have to reboot your computer. Simply choose *Reboot Computer* from the final dialog box of the configuration program.

Please continue with section New Program Group on page 26.

#### NDIS Configuration

After you finished the board's ISDN configuration you can start configuring BIANCA/NDIS. This is necessary if you want to connect your PC to a TCP/IP network via ISDN.

From the main NDIS configuration window you can reach the Communications Partner and Local System Settings dialog boxes as well as load and save your configuration files.



#### **Local System Settings**

First enter the parameters for your system in the *Local System Settings* dialog.

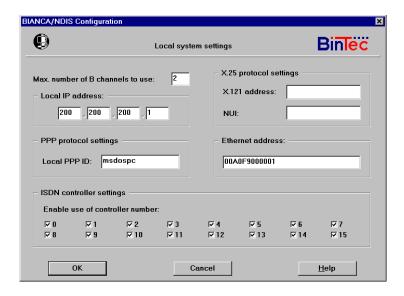
Enter the number of B channels to maximally be used simultaneously for NDIS connections (from 1 to 15; be sure not to enter a greater number than B channels are physically available).

Enter your IP address in the Local IP address fields.

You only need to enter the PPP and X.25 protocol settings if you want to use these services.

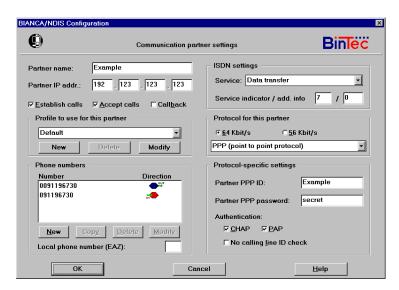
You do not need to change the Ethernet address setting in most cases (for exceptions see page 12).

Select only those ISDN controllers, which should be used by BIANCA/NDIS.



#### **Communication Partner Settings**

Select the *Example* partner in the NDIS configuration main window and click on *Modify* to adapt it to your applications, or click on *New* to configure a new partner from scratch.



Supply the partner with a name and enter its IP address. Then select whether you want to *Establish Calls* to this partner, or *Accept Calls* from this partner, and if so, if you want to use the *Callback* feature (disconnect the incoming call, and call back the partner).

You do not need to change the profile setting.

Enter the phone number(s) for this partner. For each number, please select whether it is used with incoming or outgoing calls, or both.



Please note that the numbers for incoming and outgoing calls may differ, especially when you are connected to the ISDN via a PABX and outgoing calls need a prefix number, such as 0.

If the partner can be reached with several different numbers, and a call setup fails—e.g. because that line is busy—a new call setup attempt is made with the next number from the list, and so forth.

The *Local Phone Number*, or EAZ, specifies which of your telephone numbers is used by BIANCA/NDIS for incoming TCP/IP calls. This should be the same number for all partners.

You do not need to change the ISDN service field. The default setting *Data Transfer* can be used for most partners.

Finally, choose a B channel *Protocol for this Partner*. With some protocols you need to make additional protocol-specific settings, which can then be entered in the lower right section of the dialog.



Before you can establish IP connections via ISDN using BI-ANCA/NDIS you have to configure your TCP/IP stack software (e.g. Microsoft TCP/IP or OnNet 32<sup>1</sup>) to use BIANCA/NDIS as a driver.

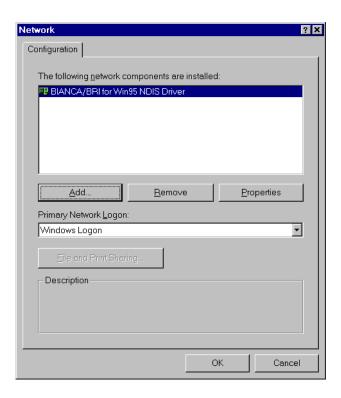
The following pages show this configuration step for Microsoft TCP/IP.

Please note that OnNet 32 for Windows 95, Version 1.0, does only support
one network adapter at a time, i.e. you cannot simultaneously use an Ethernet adapter and an ISDN board for TCP/IP connections.

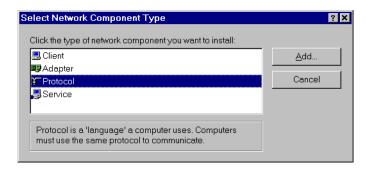
#### More System Settings

The configuration program automatically enters your BIANCA ISDN board in Windows 95's Device Manager. All that remains for you is to configure your TCP/IP stack so that it recognizes your ISDN board as a network device.

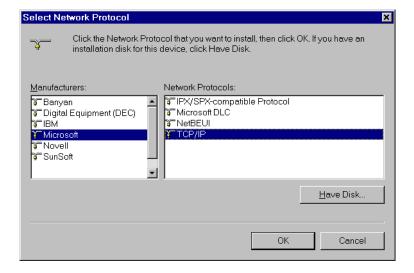
For this purpose the configuration program offers you the Network dialog of Windows 95.



#### Click on the Add button and select Protocol.



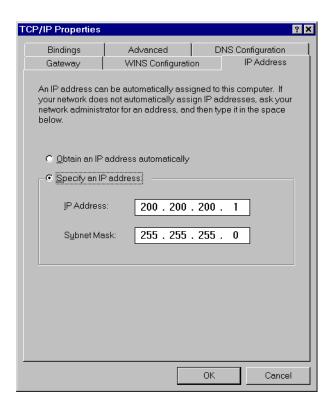
Now select your TCP/IP stack software, e.g. Microsoft TCP/IP. Confirm your choice by double-clicking on TCP/IP.



The Network dialog will be redisplayed with TCP/IP added to the list of installed network components.

Select TCP/IP and click on the Properties button.

In the *TCP/IP Properties* dialog select the *IP Address* page and enter your IP address and subnet mask.





The IP address entered here *must* be identical to your IP address you entered during NDIS configuration (see pages 20/21).

Confirm your IP address with *OK* and then leave the Network dialog, also using *OK*.

The system will then inform you that you have to reboot your computer so your configuration can take effect.

Reboot your computer now.

### **New Program Group**

After the installation and configuration your desktop contains a new program group with the ISDN board software and utilities.





When necessary you can adapt your configuration at any time using the *Board configuration* and *NDIS configuration* programs.

#### **Utility Programs**

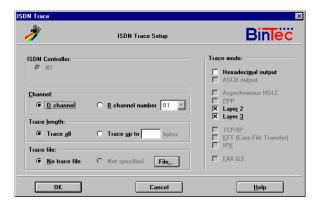
The BIANCA/BRI for Windows 95 software offers two utility programs for monitoring and tracing your ISDN boards.

#### Trace Tool

When you start the Trace Tool you get an empty window with a menu bar and a tool bar at its top.

You can now start a new ISDN trace by either selecting *New ISDN Trace* from the *File* menu or by clicking on the ISDN Trace icon in the tool bar. In the following dialog box you can select what ISDN channel and what kind of data you want to trace.

You can start more than one ISDN Trace session, e.g. one for the D channel and one each for the B channels of your BI-ANCA/BRI board.



Start a CAPI Trace by either selecting *New CAPI Trace* from the *File* menu or by clicking on the CAPI Trace icon in the tool bar. In the following dialog box you can select which ISDN



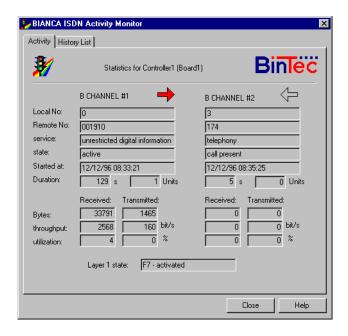
board (controller) should be traced.

For each new Trace window you can specify a trace file where all traced data are stored. This can be helpful for troubleshooting.

#### **Activity Monitor**

The Activity Monitor can either be started automatically at system start (if you put it into your StartUp group) or manually. It will display a small icon for each of your ISDN controllers in the

notification area of your task bar. By double-clicking on these icons you will get a dialog box with more detailed information on the ISDN board.



For further information on the various display states of the Activity Monitor please refer to the online help.

#### Uninstall the Software

After at least one reboot you can uninstall the BIANCA ISDN software completely and automatically by starting the *Uninstall* program.



Please note that the automatic uninstallation of the software only works correctly if you made *at least one reboot* since installing the software.