BIANCA/BRICK-X21

Getting Started

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Notes:

This manual provides a description of an initial, first-time configuration of the BIANCA/BRICK-X21 router with software version 4.9.3.

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BIANCA/BRICK-X21
GETTING STARTED

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Getting Started

Welcome!
This manual has been designed to help you quickly install and configure your new router using Setup Tool.

First, we'll provide a short list of the available features on the BRICK, then we'll cover installing the additional software included with your BRICK.

Physically *Installing the BRICK* begins on page 4.

Configuring the BRICK is divided into 3 steps and is described beginning on page 7.

Finally, we'll describe a few simple tests that you can use to verify that your configuration was successful (p. 26).

Features

The BIANCA/BRICK-X21 is BinTec's cost effective and flexible BRI/X.21 multiprotocol router, particularly attractive for midrange communication environments.

The BIANCA/BRICK-X21 satisfies all the requirements of today's LAN - WAN connections by combining the functions of a Gateway, Router, Bridge, and Telematic Server in a single, compact product.

The BRICK's most important features include:

- Support for TCP/IP routing, IPX routing, and bridging.
- Remote CAPI services for many communications applications under Windows 3.x, Windows 95, Windows 98 and Windows NT.
- Configuration via serial connection (V.24), telnet (TCP/IP), isdnlogin (ISDN), separate SNMP managers, or special Windows software (DIME Browser).
- Integrated Firewall, using NAT (Network Address Translation) and Access Lists.
- Accounting of ISDN and TCP/IP connections.
- Fast Ethernet interface with auto-sensing 10Base-T/ 100BaseT (RJ45) port .
- Double-BRI ISDN interface with automatic detection/configuration of protocol settings.
- X.21 interface for directly accessing public X.25 networks.
- Windows and UNIX software for configuring and administering the BRICK.
- HTTP and Java Status Monitors.

Software Installation

Your BRICK includes several helper/utility programs for Windows and UNIX.

BRICKware for Windows

BRICKware for Windows consists of the following programs (for detailed information, please refer to the on-line *BRICKware for Windows* documentation):

- *DIME Tools* – A set of tools for administering your BRICK which includes: *BootP Server*, *TFTP Manager*, *Syslog Server*, *Time Server*, and *ISDN and CAPI Trace Utility*.
- *DIME Browser* – An SNMP manager with a graphical user interface for administering your BRICK.
- *BRICK at COM1/2* – Preconfigured Windows terminal sessions for accessing your BRICK over your computer's serial ports.
- *Remote CAPI* clients for CAPI 1.1 and 2.0.

If you intend on configuring your BRICK from a PC or using it as a CAPI server for PC applications you should install the software as explained in the online document *BRICKware for Windows.*

RVS-COM

RVS-COM for Windows 95 and Windows NT (Lite Version) is an application that runs using the CAPI interface and provides telecommunications services, such as T-Online (formerly Btx or Datex-J), Fax, Voice Mail, and Eurofiletransfer. Complete instructions can be found in the online documentation included on the CD.
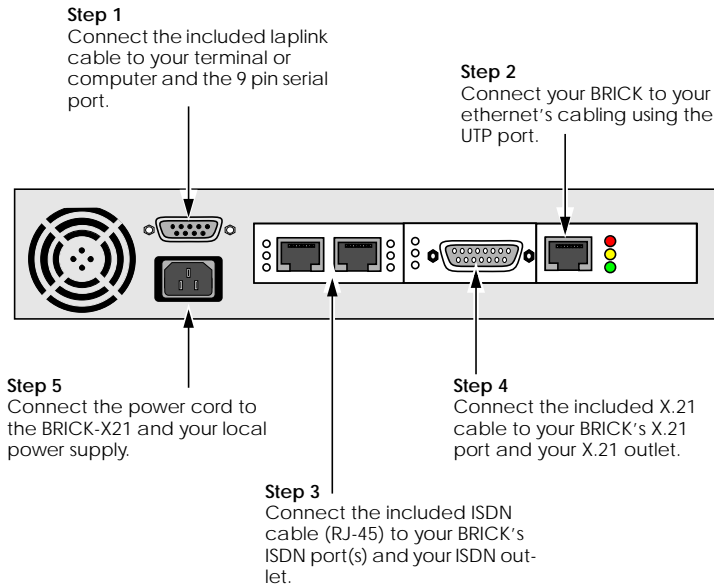
BRICKtools for UNIX

BRICKtools for UNIX includes a Eurofiletransfer server and client as well as ISDN and CAPI trace tools for various UNIX platforms (refer to the *Software Reference*).

Installing the BRICK

Select a flat, stable location for your BRICK and connect the included cables to the ports located on the back plane as shown in the diagram below.

All the examples in this documentation are for the BRICK-X21 with a Fast Ethernet adapter (CM-100BT), one ISDN adapter (CM-2BRI) and an X.21 adapter (CM-X21).

Step 1
Connect the included laplink cable to your terminal or computer and the 9 pin serial port.

Step 2
Connect your BRICK to your ethernet's cabling using the UTP port.

Step 5
Connect the power cord to the BRICK-X21 and your local power supply.

Step 4
Connect the included X.21 cable to your BRICK's X.21 port and your X.21 outlet.

Step 3
Connect the included ISDN cable (RJ-45) to your BRICK's ISDN port(s) and your ISDN outlet.

Note that the BRICK-X21 does not have a power switch. The system will power up as soon as it is connected to your power source. You may decide to wait until you're ready to access the BRICK before connecting the power source.

LED Indicators

Each time you power up the system, the BRICK switches into **Power Up Mode** and performs a self-test to verify the integrity of the system. The LEDs on the front panel correspond to various stages of the test.

Upon successful completion of the self test, the BRICK then switches into **BOOTmonitor Mode**, (the middle six LEDs remain on) as described in the *User's Guide.*

☞ If the ERR indicator remains on (see table below) there may be a problem with the cabling. Verify the ISDN and LAN cabling is correct and power up the system again.

☞ Also note that the once the rooter is up, the system may be accessed via the ISDN using the factory-set passwords. Changing the default passwords is described on page 14.

After 4 seconds, the system then switches into **Normal Operation Mode**. During normal operation, the front panel indicators display status information as follows.

LED		State	Meaning
PWR		On	Power: Power is being supplied.
Fast Ether-net	A	On	Currently receiving a packet.
	B	On	Currently sending a packet.
X21	A	On	Currently receiving an X.21 frame.
	B	On	Currently sending an X.21 frame.
ISDN 2BRI	A	On	One B channel is currently in use on unit 0.
		Blinking	Two B channels are currently in use on unit 0.
	B	On	One B channel is currently in use on unit 1.
		Blinking	Two B channels are currently in use on unit 1.
ERR		Blinking	Error: Data transfer problem on one of the slots. Check the cabling.

Configuration

Configuring your new BRICK involves three simple steps which are described in the following sections.

Gathering the Information (p. 8)

1. First, you will need to know several pieces of information about your network setup. At a minimum you will need to know the information listed in the table shown on the following page. Fill in the fields now and refer to them later when needed.

Accessing the BRICK (p.9)

2. Next, you need to decide whether you want to configure your BRICK over its Ethernet, ISDN, or serial port. The section *Accessing the BRICK* describes the possible ways of gaining access to your new BRICK.
No matter which method you select, you will arrive at an SNMP shell login prompt and can continue with the configuration using the Setup Tool.

Configuration with Setup Tool (p.13)

3. The last step involves logging into the BRICK as **admin**, using the **bintec** password, and issuing **setup** at the shell prompt. Using the Setup Tool is the easiest way to get your BRICK up and running. After logging into the BRICK, use the information you gathered for your local setup, and proceed to the section *Configuration with Setup Tool*.

Gathering the Information

In the following example network setup, the host ***merlin*** will be acting as the nameserver and timeserver for ***brick***, the BRICK we will be configuring with Setup Tool. The router ***partnerbrick*** will serve as the remote router for connecting the Partner LAN over ISDN.
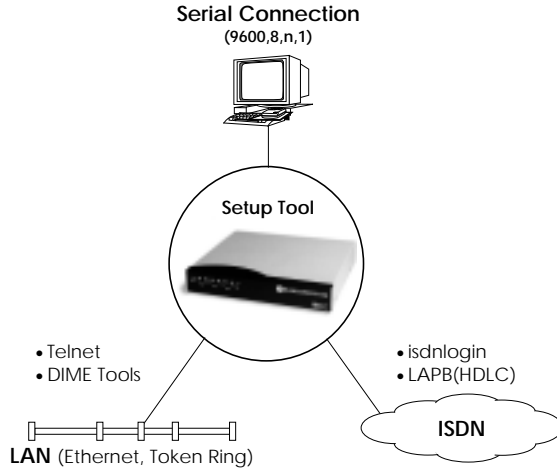

Your LAN	ISDN	Partner LAN
199.1.1.1 merlin	199.1.1.2 mybrick 091112341 091112342	200.1.1.1 partnerbrick 08965432	200.1.1.2 sauron
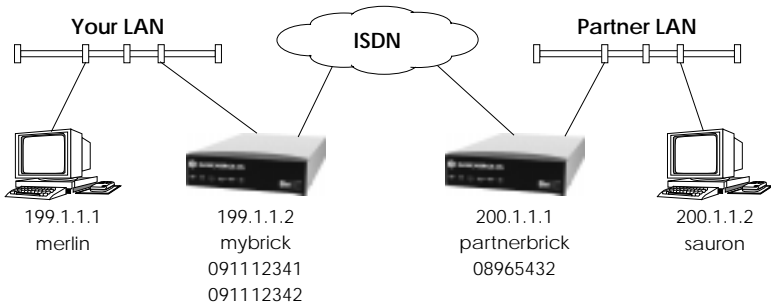
Fill in the table below with the configuration parameters for your local setup, then proceed to the next section.

Parameters	See page	Our example	Your BRICK
License Information	14	–	(see license card)
IP Address	10/15	199.1.1.2	
Hostname	10/15	mybrick	
Your BRICK-X21's ISDN telephone #	17	091112341 091112342	
Remote router's IP Address	20/24	200.1.1.1	
Remote router's Hostname	18	partnerbrick	
Remote router's ISDN telephone #	18	08965432	
Remote partner's PPP password	18	secret	

Accessing the BRICK

The BRICK can be configured over any of its interfaces using a variety of methods.

Serial Connection
(9600,8,n,1)

Setup Tool

• Telnet
• DIME Tools

• isdnlogin
• LAPB(HDLC)

ISDN

LAN (Ethernet, Token Ring)

Access Methods
As shown above, there are several ways of accessing your BRICK once connected to the network interfaces.

- Over a Serial Connection (p. 10)
    - From a computer or terminal.
- Over Ethernet (p. 10)
    - From a Windows PC using *DIME Tools.*
    - From any computer on the LAN using telnet.
- Over ISDN (p. 11)
    - From a computer connected to another BRICK
    - Other ISDN stations capable of LAPB (HDLC).

Setup Tool
The simplest method involves using the **Setup Tool** over a Serial Connection. This method requires a terminal or a computer running a terminal program to be attached directly to the BRICK's serial port.

Over Serial Port

With a terminal or terminal program (UNIX or PC)

- Connect the computer or terminal using the included cable to the BRICK's serial port.
- Set your communications parameters to:
  9600 bps, 8 data bits, no parity, 1 stop bit, software handshake (XON, XOFF) and VT100 terminal emulation.
- After pressing the <Return> key, you should receive a login prompt.

For Windows PCs: You can also use the preconfigured terminal programs *BRICK at COM1/COM2* included in the *BRICKware* suite.

- Continue with the *Configuration with Setup Tool* as described on page 13.

Over LAN Interface

From a Windows PC using DIME Tools

You can access the BRICK from a Windows PC on the LAN. This requires *BRICKware* and a TCP/IP stack to be installed on a PC on the same LAN segment as the BRICK. Power up your BRICK; then with *DIME Tools* running:

- A *BootP Server* window will open automatically once the PC receives a BOOTP request from the BRICK.
- In this window, enter the BRICK's IP address, netmask, and hostname. The nameserver and timeserver's address can also be set here.
- Using a VT100 compatible telnet program, telnet to your BRICK using the IP address you assigned it with *BootP Server*.
- Continue with the *Configuration with Setup Tool* as described on page 13.

From any computer using telnet

Once the BRICK is assigned it's IP address (i.e. using *BRICKware* and *BootP Server* as mentioned above) you can access the system from any computer on the LAN.

• Using a VT100 compatible telnet program, telnet to the BRICK at it's IP address.
• Continue with the *Configuration with Setup Tool* as described on page 13.

Over ISDN

From a computer connected to another BRICK

The BRICK automatically configures its ISDN interface at boot time if the system is attached to an ISDN dialup line. You can login to your new BRICK from this computer over ISDN using the *isdnlogin* program.

• Login to your existing BRICK.
• At the shell prompt, issue **isdnlogin** <*telno*> where *telno* is the ISDN number your new BRICK is connected to.
• Continue with the *Configuration with Setup Tool* as described on page 13.

Additional Configuration Possibilities

SNMP shell

Of course, the BRICK can be configured manually from the SNMP shell or by using an external SNMP manager such as *DIME Browser for Windows.* These mechanisms require a greater understanding of the BRICK's internal data structures, SNMP, and the MIB (management information base).

For information on working with the SNMP shell or using DIME Browser, refer to the *Software Reference* and *BRICKware for Windows* respectively (both are included on the Companion CD).

Third party SNMP Manager

The BRICK can also be configured using third party SNMP Managers such as HP OpenView, Sun/Netmanager, and Transview. The Management Information Base implemented on the BRICK must be imported into your SNMP manager. The complete MIB is included on the Companion CD. See your SNMP manager documentation on importing MIBs.

Configuration with Setup Tool

If you haven't already done so, login to the BRICK now by entering **admin** at the login prompt and **bintec** at the password prompt. Enter **setup** now. Setup Tool's main menu will be displayed as follows.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
                                                                brick

 Licenses               System

Slot1:          CM-100BT, Fast Ethernet

Slot 2:         CM-X21
Slot3:          CM-2BRI, ISDN S0, Unit 0
                CM-2BRI, ISDN S0, Unit 1

WAN Partner
IP      IPX     PPP     X.25    FR      VPN     ISDN    CAPI

Configuration Management
Monitoring and Debugging
Exit

Press <Ctrl-n>, <Ctrl-p> to scroll, <Space> tag/untag DELETE, <Return> to edit
```

Navigating the Menus

The Setup Tool menus can be navigated using the following keys:

| Return | Enters the currently highlighted menu item. |

| ↑ Tab ↓ | Moves forward and backward between menus and fields. |

| ← → | Scrolls among entries in a list of possible field values. |

| Spacebar | Selects/unselects (toggles) special fields or scrolls a list of field entries. |

| Esc Esc | Entering two successive Esc characters returns you to the previous menu. |

☞ As you move between menus, the lines at the top and bottom of your screen will display status information for the respective menu/field you are currently editing.

Licenses

Select the [*Licenses*] menu and then [*ADD*] to enter your license information. You will need to enter your *Serial Number, Mask* and *Key,* as shown on your License card.

After entering your information and selecting [*SAVE*], the system will display a list of licensed features.

If the system states that the license is "not ok" then you have entered an invalid Serial Number, Mask, and Key combination. Delete the invalid entry (marking the entry for deletion with the spacebar, then selecting delete) and enter your information again.

You can use the ‹Tab› key to move directly from one field to the next. Useful for moving from a field containing a long list of entries directly to the next field.

Once you have entered your license information, select [*EXIT*] to return to the main menu.

System

Select [*System*] from the main menu. The only required entries at this time are the first two fields (*System Name* and *Local PPP ID*); this information will be used as the BRICK's hostname and PPP ID. With the exception of the *admin*, *read*, and *write Password/Community* fields, the other fields are not required and can be edited later. The SNMP Community fields define the passwords that are required for logging into your BRICK via the network.

You can, of course, enter the same name in both fields. In our example both *System Name* and *Local PPP ID* are set to brick (see page 8).

Select [*SAVE*] to accept the entries and return to the main menu.

Setting up the LAN Interface

Select [*CM-100BT, Fast Ethernet*] to configure your ethernet interface. In the following menu you will need to enter the IP address, local netmask[1], and type of encapsulation to use on your BRICK. For now, you can select Ethernet II encapsulation.

The settings for our example setup on page 8 are shown below.

```
BIANCA/BRICK-X21 Setup Tool                 BinTec Communications AG
[SLOT 3 ETHERNET]: Configure Ethernet Interface              mybrick


        IP-Configuration
            local IP-Number        199.1.1.2
            local Netmask          255.255.255.0
            Encapsulation          Ethernet II

        IPX-Configuration
            local IPX-NetNumber    0
            Encapsulation          none

        Bridging                   enabled

        Advanced Settings >

               SAVE                        CANCEL


Enter IP address (a.b.c.d or resolvable hostname)
```

Once your entries are correct, select [*SAVE*].

---

1. If you are using a standard netmask (e.g. 255.255.255.0), you can leave this field empty.

Setting up the ISDN Interface

Select [*CM-2BRI, ISDN S0, Unit 0*] to configure your ISDN interface. Note that you can configure your ISDN interface either as an ISDN dialup line or as a leased line. Since the menu entries differ slightly depending on what type of ISDN line you are using, continue with the configuration by performing the appropriate section as follows:

Dialup Line

Depending on which protocol your ISDN subscriber interface uses and whether or not the ISDN autoconfiguration was successful, the [*CM-2BRI, ISDN S0, Unit 0*] menu may be displayed as follows:

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[SLOT 2 UNIT 0 ISDN BRI]: Configure ISDN Basic Rate Interface      mybrick


Result of autoconfiguration:        Euro ISDN, point to multipoint

ISDN Switch Type                    autodetect on bootup

D-Channel                           dialup
B-Channel 1                         dialup
B-Channel 2                         dialup

Advanced Settings >
Incoming Call Answering >
              SAVE                             CANCEL

Use <Space> to select
```

The ISDN autoconfiguration procedure runs until either the proper protocol is detected or the switch type is set manually. If the cables are connected and auto detec-

tion just keeps running, you may have to select the appropriate ISDN protocol manually by scrolling through the entries in the *ISDN Switch Type* field using the spacebar or the left and right arrow keys.

Leaving the Switch Type setting to "autodetect on bootup" usually allows the BRICK to automatically detect the proper ISDN protocol each time the system boots.

To ensure data transfers are possible over ISDN, verify that the autoconfiguration is correct or set your ISDN switch type appropriately.

Once the switch type and channel fields are correct select [*Incoming Call Answering >*].

Incoming Call Answering

In this menu you will specify how your BRICK responds to incoming ISDN calls and which services it will support.

To enable routing (i.e. to allow IP connections via ISDN calls), use [*ADD*] to create a new entry and select **PPP (routing)** in the *Item* field (using the spacebar). Then enter one of your BRICK's ISDN numbers (or an EAZ) in the *Number* field.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[][INCOMING]: Incoming Call Answering                          myBrick


    Item              Number           Mode          Username




         ADD                  DELETE              EXIT


```

⚠ If you want to login to your new BRICK via the *isdnlogin* program, you also need to create an *ISDN Login* entry. A different *Number* must be specified. Normally, this is done by using a different Multiple Subscriber Number (in Euro ISDN) or a different EAZ (for 1TR6).

Once your entries are correct select [*EXIT*] to return the [*CM-2BRI, ISDN S0, Unit 0*] menu; select [*SAVE*] to complete the configuration of the ISDN interface and return to the main menu.

WAN Partner

Select [*WAN Partner*]. This menu displays a list of known WAN partners and initially will be empty.

To add a new WAN partner select [*ADD*]. A menu similar to the following will be displayed. For our example setup, we have already filled in the appropriate fields.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[WAN][ADD]: Configure WAN Partner                               mybrick

Partner Name                     partnerbrick

Encapsulation                    PPP
Compression                      none
Encryption                       none
Calling Line Identification      no

WAN Numbers >
PPP >
Advanced Settings >

IP >
IPX >
Bridge >
                  SAVE                     CANCEL

Enter string, max length = 25 chars
```

In the *Partner Name* field, enter a name for this partner; normally the partner's hostname is used. You can specify

the encapsulation to use, and whether or not to compress/encrypt data. Calling Line ID, (CLID) is enabled automatically once you configure am ISDN number (in the next step).

WAN Numbers

After adding the WAN partner information, select the [*WAN Numbers >*] submenu. This menu lists the WAN numbers this partner can be reached at and initially will be empty. Select [*ADD*] to enter a new WAN number for the partner you just configured.

In the *ISDN number* field, enter the ISDN telephone number your partner's router can be reached at. To take advantage of ISDN's CLID feature, select "both (CLID)" in the *Direction* field.

Select [*SAVE*], and then [*EXIT*] to return to the partner settings menu.

PPP Settings

Now go into the [*PPP >*] submenu and configure the PPP settings to use for this link. Here we define the type of authentication to use for call setup. In our example we are routing IP traffic, and will use both PAP and CHAP au-

thentication. Then enter the *PPP Password* the remote site must match when performing authentication.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[WAN][ADD][PPP]: Configure WAN Partner                          mybrick


Authentication                  CHAP + PAP
Partner PPP ID                  partnerbrick
Local PPP ID                    mybrick
PPP Password                    secret

Keepalives                      off
Link Quality Monitoring         off



               OK                        CANCEL

Enter string, max length = 25 chars
```

Select [OK] to return to the main [WAN Partner] menu.

IP Partner Configuration

Select the [*IP >*] submenu and configure the IP parameters for this WAN partner. Depending on whether you are us-

ing a transfer network, enter the IP Network address and netmask[1] for your WAN Partner.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[WAN][ADD][IP]: IP Configuration (partnerbrick)                mybrick


IP Transit Network                     no



Partner's LAN IP Address               200.1.1.0
Partner's LAN Netmask                  255.255.255.0


                SAVE                          CANCEL

Enter IP address (a.b.c.d or resolvable hostname)
```

Select [*SAVE*] twice, and then [*EXIT*] to return to Setup Tool's main menu.

IP Configuration

From the main menu select [*IP*]. From the submenus which are displayed select [*Routing*]. This menu displays a list of routes known to the BRICK. Initially, the list will be empty. Select [*ADD*] to create a new default route. Your display will be similar to the menu shown below.

In the *Route Type* field, select "Default route*"*.

In the *Network* field select the appropriate entry (using the spacebar) to specify whether the default route should be over the LAN or WAN. For WAN routes, select the appropriate entry depending on whether you are using a transfer network.

In the *Partner / Interface* field select the partner name the default route leads to. For our example, we added a

---

1. If you are using a standard netmask (e.g. 255.255.255.0), you can leave this field empty.

default route without a transfer network to partnerbrick via ISDN.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[IP][ROUTING][ADD]: Configure IP Routes                         mybrick



Route Type                      Default route
Network                         WAN without transit network

Partner / Interface             partnerbrick

Metric                          1



            SAVE                            CANCEL

Use <Space> to select
```

Then select [*SAVE*] and then [*EXIT*] until you return to the main menu.

Your configuration is almost complete. Now proceed to the section *Saving your Configuration* on page 25.

Leased Line

If you connected your BRICK to an ISDN leased line, the WAN Interface submenu will appear similar to the following except that the *ISDN Switch Type* field will display "autodetect on bootup" and each of the channel fields will be set as "dialup" channels.

To configure the BRICK's ISDN interface for use with a leased line you will need to set the ISDN Switch Type, and D and B channel fields manually.

Scroll through the entries in the *ISDN Switch Type* field and select the entry for the number or channels your ISDN line uses. Upon exiting this field the cursor will jump to the first channel used. For each channel used, specify which mode the channel should operate in.

```
BIANCA/BRICK-X21 Setup Tool               BinTec Communications AG
[SLOT 2 UNIT 0 ISDN BRI]: Configure ISDN Basic Rate Interface       mybrick


  Result of autoconfiguration:       autoconfiguration disabled

  ISDN Switch Type                   leased line B1 channel (64s)


  D-Channel                          not used
  B-Channel 1                        leased dte
  B-Channel 2                        not used

  Incoming Call Answering >
  Advanced Settings >

                 SAVE                        CANCEL

Use <Space> to select
```

Once your entries are correct, select [*SAVE*] to return to the main menu.

WAN Partner

Select [*WAN Partner*] from the main menu. Select the "Leased, Slot 2 (0)" partner name. A menu similar to the following will be displayed.

```
BIANCA/BRICK-X21 Setup Tool               BinTec Communications AG
[WAN][ADD]: Configure WAN Partner                           mybrick


  Partner Name                       Leased, Slot 2 (0)

  Encapsulation                      PPP
  Compression                        none
  Encryption                         none
  Calling Line Identification        no

  WAN Numbers >
  PPP >
  Advanced Settings >

  IP >
  IPX >
  Bridge >

                 SAVE                        CANCEL

Enter string, max length = 25 chars
```

IP Partner Configuration

Select the [*IP >*] submenu to set the IP parameters for this WAN partner. Depending on whether you are using a transfer network, enter the IP Network address and netmask[1] for your WAN Partner's LAN.

As shown on the following page we added the IP address and netmask for partnerbrick. No transit network is needed in our example.

When ready, select [*SAVE*] twice, and then [*EXIT*] to return to the main menu.

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[WAN][ADD][IP]: IP Configuration (Leased, Slot 2 (0))           mybrick


IP Transit Network                  no

Partner's LAN IP Address            200.1.1.0
Partner's LAN Netmask               255.255.255.0




               SAVE                          CANCEL

Enter IP address (a.b.c.d or resolvable hostname)
```

IP Configuration

From the main menu select [*IP*]. From the submenus which are displayed select [*Routing*], then [*ADD*] to add a default route for the BRICK to use.

In the *Route Type* field, select "Default route". In the *Network* field specify whether the default route should be over the LAN or WAN. For WAN routes, select the appropriate entry depending on whether you are using a trans-

---

1. If you are using a standard netmask (e.g. 255.255.255.0), you can leave this field empty.

fer network. In the *Partner / Interface* field select the part-
ner name the default route leads to. For our example we
added a default route without a transfer network to part-
nerbrick via ISDN. (See the following page).

```
BIANCA/BRICK-X21 Setup Tool                    BinTec Communications AG
[IP][ROUTING][ADD]: Configure IP Routes                          mybrick



  Route Type                    Default route
  Network                       WAN without transit network

  Partner / Interface           Leased, Slot 2 (0)

  Metric                        1

              SAVE                           CANCEL

Use <Space> to select
```

Then select [*SAVE*]. Return to the main menu by se-
lecting [*EXIT*] twice. Your configuration is almost com-
plete. Now proceed to the next section *Saving your Config-
uration*.

Saving your Configuration

Once you have finished configuring either your ISDN di-
alup or leased line, select [*Exit*] from the main menu.

For an initial configuration you should select [*Save as
boot configuration and exit*]. Your initial configuration is
now complete and is saved in a flash ROM file named
"boot". You are then returned to the BRICK's SNMP shell
prompt.

☞ The configuration file saved as "boot" will be used upon
each new system start.

For information on configuration management and the transfer of configuration files to/from remote hosts via TFTP refer to the *BRICK User's Guide.*

Testing your Configuration

LAN Test

To test your new configuration try issuing a simple ping command to a PC on the BRICK's LAN to verify the LAN interface is properly configured. In our example, we would issue:

ping -c 5 199.1.1.1

If the LAN portion of the configuration was successful you should receive output similar to the following:

```
PING 199.1.1.1: 64 date bytes
64 bytes from 199.1.1.1: icmp_seq=0. time=8. ms
64 bytes from 199.1.1.1: icmp_seq=1. time=1. ms
64 bytes from 199.1.1.1: icmp_seq=2. time=1. ms
64 bytes from 199.1.1.1: icmp_seq=3. time=1. ms
64 bytes from 199.1.1.1: icmp_seq=4. time=1. ms
----199.1.1.1 PING Statistics----
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms) min/avg/max = 1/2/8
```

ISDN Test

To verify the ISDN portion of the configuration is correct, try the same command using the IP address of the remote router (200.1.1.1 in our example) or a host on the remote LAN.

If the ping command to the remote router is successful, try issuing another ping command using the IP address of a computer on the remote partner's LAN.

Once all ping commands are successful, your configuration is complete.

Troubleshooting

If any of the ping commands are unsuccessful, refer to the *Troubleshooting* chapter in the *BRICK User's Guide.*

Getting the latest BRICK News and Software

Now that your BRICK is up and running, you might like to visit our WWW site at

http://www.bintec.de

to keep abreast of new developments at BinTec Communications GmbH.

Via our WWW server BinTec provides you free of charge with the most recent versions of:

- User documentation for your BinTec software and hardware in Portable Document Format (PDF).

- System software for your BRICK.

☞ You will find instructions on how to update system software in the User's Guide, chapter 8, section *Upgrading System Software*.

- Release notes for upgrading your BRICK's system software.

- Windows software and UNIX Tools applications.

BinTec ROUTERS IN THE UK

Setting up a BinTec Router in the UK

To get your BinTec router up and running in the UK you should follow the UK-specific instructions given below.

☞ Please note that we will use the term *BRICK* here to include all models of the BIANCA/BRICK family of routers.

Differences in the UK

Multiple Subscriber Numbering (MSN)

In the UK, unlike in other European countries, you only get *one* ISDN telephone number by default.

This makes accepting calls for different ISDN services a little more difficult—a solution is presented on the following pages.

An optional service called MSN (Multiple Subscriber Numbering) is available at a charge, and provides a block of *ten* consecutive numbers for incoming callers to use (e.g. 811910, 811911, …, 811919).

☞ If you want to use the CAPI services (e.g. Euro file transfer or Fax server) of your BRICK in addition to TCP/IP or PPP connections, you will have to order the MSN service from your telephone company.

Calling Line Identification (CLIP)

The CLIP feature (calling line identification presentation) is also a purchasable option.

For security reasons PPP connections should therefore be configured to use either the PAP or the CHAP authentication protocols—or both—for incoming call identification; see section WAN Partner / PPP on pages 31 (Setup Tool) or 34 (SNMP client shell).

Also note that international calls from the Republic of Ireland do *not* contain a CLI information.

☞ If you want the additional security of calling line identification for PPP connections, both you and your communication partner(s) have to order the CLIP feature.

International ISDN Calls

The code for dialling international ISDN calls from the UK is *not* 00 (as with normal voice calls), but *000*. The British Telecom will sometimes route calls preceded by 00 over normal audio lines, even when they originate from the ISDN.

Configuring your BRICK

The UK-specific settings for your BRICK are described on the following pages. The first section (starting below) deals with configuring your BRICK using the built-in Setup Tool, subsequently (from page 33) the same settings are explained using the BRICK's SNMP Client Shell.

Setup Tool

Follow the instructions from the "Getting Started" manual up to "Incoming Call Answering".

Routing In this menu you will specify how your BRICK responds to incoming ISDN calls and which services it will support.

```
BIANCA/BRICK Setup Tool                    BinTec Communications AG
[WAN][INCOMING]: Incoming Call Answering                  mybrick
──────────────────────────────────────────────────────────────────


    Item                         Number                Mode




    ADD                          DELETE                EXIT


──────────────────────────────────────────────────────────────────

```

To enable routing (i.e. to allow IP connections via ISDN calls), use [*ADD*] to create a new entry and select **PPP (routing)** in the *Item* field (using the spacebar). Leave the Number field blank—this will accept all incoming calls.

Do *not* additionally make an *ISDN Login* entry. A way to enable logging in to your BRICK via ISDN can be found in section *Login via ISDN* on page 33.

Once your entries are correct select [*SAVE*] to return to the [*CM-1BRI, ISDN S0*] menu; select [*SAVE*] once more to complete the configuration of the ISDN interface and return to the main menu.

WAN Partner / PPP Select [*WAN Partner*]. This menu displays a list of known WAN (i.e. ISDN) partners and initially will be empty. To add a WAN partner select [*ADD*]. A menu similar to the following will be displayed. For our example setup, we have already filled in the appropriate fields.

```
BIANCA/BRICK Setup Tool                    BinTec Communications AG
[WAN][ADD]: Configure WAN Partner                          mybrick
————————————————————————————————————————————————————————————

    Partner Name                  partnerbrick
    Enabled Protocols             <X> IP
    Encapsulation                 PPP
    Identify by Calling Number    no
    PPP Authentication Protocol   CHAP and PAP
    Partner PPP ID                partnerbrick
    Local PPP ID (sysName)        mybrick
    PPP Password                  secret



    ISDN Numbers >
    IP >

    Advanced Settings >

               SAVE                        CANCEL
————————————————————————————————————————————————————————————
Enter string, max length = 25 chars
```

As you edit each field the remaining fields will change depending on which options you select.

In the *Partner Name* field, enter a name for this partner; normally the partner's hostname is used.

You can specify which protocols to route, the encapsulation to use (PPP), and the type of authentication to use for call setup (CHAP and PAP). In our example we are routing IP traffic, do *not* use the calling line identification feature (CLIP), and will use both PAP and CHAP authentication for security reasons.

If the remote host is a BRICK then the *Partner PPP ID* must be set to the remote BRICK's hostname (i.e. the contents of sysName up to the first dot (".").

Then enter the *PPP Password* the remote site must match when performing authentication.

From here you can continue your configuration as described in the *ISDN Numbers* section in this manual.

SNMP Client Shell

If you want to configure your BRICK from the SMNP Client Shell (see User's Guide), you can enter the following commands directly at the BRICK's command prompt after logging in to your BRICK as user *admin* with the password *bintec* (please refer to your *Getting Started* manual for different ways of accessing your BRICK).

Routing To enable routing (via IP, IPX, X.25, or bridging) enter the following commands:

isdnDispatchTable

This will display the **isdnDispatchTable**, which should be empty if you access your BRICK for the first time. Here you can create an entry to accept incoming PPP calls. The LocalNumber field can remain empty—this will accept all PPP calls received by your BRICK.

StkNumber=0 Item=ppp

Login via ISDN If you also want to be able to login to your BRICK via ISDN (e.g. from another BRICK) you have to enter the following command:

isdnLoginOnPPPDispatch=allow

This allows incoming ISDN calls with an ISDN service indicator of "telephony" to be connected to the isdn-login daemon even though the call has a matching service in the **isdnDispatchTable** (*isdnDspItem*).

To login to your BRICK from another BRICK use the command

isdnlogin ‹ISDN number of your BRICK› telephony

If you are already using a BinTec ISDN product for UNIX you can enter the line

> *   bricktel   001001

to your */usr/bianca/config/services* file and then use the command

> *isilogin -s bricktel ‹ISDN number of your BRICK›*

to login to your BRICK.

WAN Partner / PPP

Now you can setup a PPP interface for incoming calls. First create a new entry in the ***biboPPPTable***, select *both* CHAP and PAP as authentication protocols, and enter the name and password for your communications partner:

> *biboPPPType=isdn_dialup* ⇨[1]
> *biboPPPAuthentication=both* ⇨
> *biboPPPAuthIdent=**partnerbrick*** ⇨
> *biboPPPAuthSecret=**secret***

Then display the ***biboPPPTable*** and note down the *IfIndex* of this entry. You can now name the interface entry by assigning a new value to the *Descr* field with the appropriate *IfIndex* in the ***IfTable***.

> *IfTable*

> *Descr:‹inx›=**partnerbrick***

Finally enter the ISDN number of your communication partner in the ***biboDialTable***:

> *biboDialTable*

---

1. The arrows "⇨" at the end of these lines indicate that the command continues on the next line, and you have to type all the lines as one command (entering the "Return" key only after the last line).

*IfIndex=**partnerbrick*** ⇨
*Number=‹**ISDN number***› ⇨
Direction=outgoing

Now all incoming calls and outgoing calls to your partner are handled by the PPP interface.

For further instructions on configuring your BinTec router please refer to its User's Guide.