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Network Installation for ES1130 and ES1120

User's Guide

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1 Introduction

This guide tells you how to install and configure your PC's network interface to connect it to the ES1130 and ES1120.

The guide contains the following:

- Introduction (this chapter)
- General remarks on prerequisites ("Prerequisites" on page 7)
- A guide for installation and configuration using Windows 9x ("Installation and Configuration for Windows 9x" on page 9)
- A guide for installation and configuration using NT 4.0 ("Installation and Configuration with NT 4.0" on page 19)
- Instructions on how to test the installation ("Testing the Installation" on page 27)
- Appendix
  - Tested configurations (on page 29)
  - Configuration parameter for TCP/IP (on page 33)
  - Resources for XIRCOM RealPort2 (on page 33)

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2 Prerequisites

Basically, the prerequisites to operate an Ethernet adapter for the connection to the ES1000 do not differ from those for a connection to an ordinary LAN. Any10-MBit 10Base-T or 100-MBit 100Base-TX Ethernet interface can be used.

The following operating systems are supported:

- Microsoft Windows 95a and Winsock 2.0
- Microsoft Windows 95b and Winsock 2.0
- Microsoft Windows 98
- Microsoft Windows NT 4.0 (Service Pack 4 recommended)

This guide describes the installation of the 'XIRCOM RealPort2 CardBus Ethernet 10/100' network adapter. The description also applies to the installation of other manufacturers' network adapters.

ETAS recommends using the 'XIRCOM RealPort2' because of its high performance (100 MBit Ethernet, 32-bit PC-card interface) and its good mechanical properties.

This network adapter can be ordered directly from ETAS.

note

Operating two different PC card types (PCMCIA and CardBus) under NT 4.0 might lead to problems. These problems can be avoided by using either PCMCIA cards or CardBus cards only.
Operating two identical cards under NT 4.0 can cause problems as well.

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2.1 BIOS Update for Notebooks

Problems have been reported concerning the cooperation of modern PCMCIA/ CardBus PC cards and the BIOS of older notebooks. We therefore recommend updating your notebook's BIOS to the latest version.

More information can be found on the relevant manufacturer's homepage. BIOS versions of tested notebooks are listed in the section "Tested Configurations" on page 29.

With a Toshiba notebook, the BIOS version can be determined via **Start** → **Programs** → **Toshiba Utilities** → **Hardware Setup**.

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3 Installation and Configuration for Windows 9x

This chapter describes the installation of the network adapters and the configuration of the TCP/IP protocol for Microsoft Windows 9x.

If a network card already installed is to be replaced by a new one, you must remove the old card first.

3.1 Removing a Network Adapter Card

To remove a network adapter, proceed as follows:

1. Start your PC.
2. Select **Settings** → **Control Panel** → **System** → **Network** from the **Start** menu.

note

If you plan to install another network adapter card for your LAN later, write down the settings of this card before removing it.

3. Remove the network adapter cards via **Start** → **Settings** → **Control Panel** → **System.**
4. In the **System Properties** dialog box, choose the **Device Manager** tab and double-click **Network Adapters.**
5. Select the adapter you want to remove and click **Remove**.
6. Shut down your PC.
7. Remove the network adapter card.

3.2 Installing a Network Adapter Card

The installation and configuration described below refers to a network adapter card dedicated for communication with the ES1000. If you want to install another adapter for your LAN, just repeat the steps. Please note that different settings are necessary for the connection to your LAN. If in doubt, contact your administrator.

To install the new network adapter, proceed as follows:

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1. Plug in the new card and switch on the PC.

   Normally, Windows 9x automatically detects your network adapter. If the automatic detection does not work, choose a new network adapter manually.
2. To do so, double-click the **Hardware** icon in the **Control Panel** window (**Start** → **Settings** → **Control Panel**).
3. Choose the appropriate driver for your card from the disk or CD-ROM supplied by the manufacturer. Additionally, the disks or CD-ROM of Windows 9x may be needed.
4. Check the settings for the new network adapter, especially for address conflicts and the NDIS version used.

note

The NDIS version in Windows 9x must not be higher than 4. Set the option 'NdisVersion to 'Version 4' or below (not 'AUTO') (see 2. on page 11)

5. Restart your PC.
6. To install an additional network adapter card (e.g. to connect to a LAN), repeat the steps above.

Please beware of possible address conflicts between the two adapters - identical interrupts are allowed with PCI-bus adapters or PC cards.

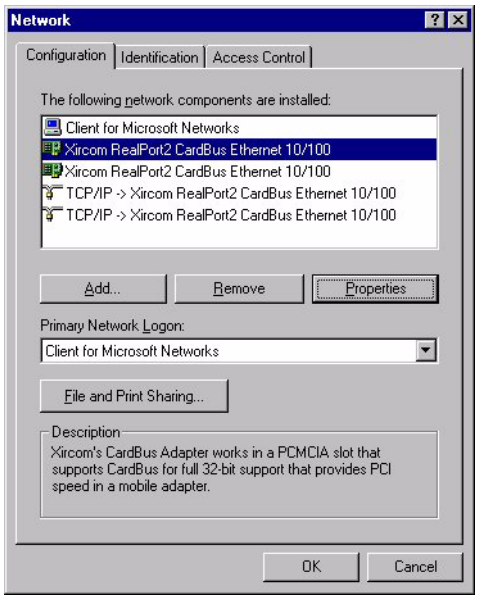
The correct settings for the configuration of the network adapter card (TCP/IP protocol, bindings, etc.) are given in the next section.

3.3 Configuring the Network Adapter

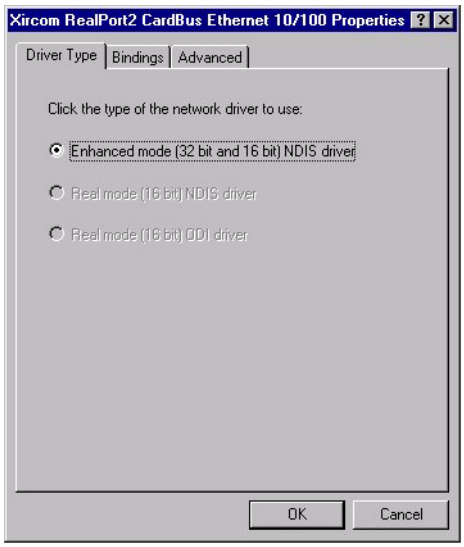
To access the network settings, choose **Start** → **Settings** → **Control Panel** and double-click the **Network** icon.

1. Select the network adapter card for the ES1000 from the list of installed network components (**Configuration** tab) and click **Properties**.

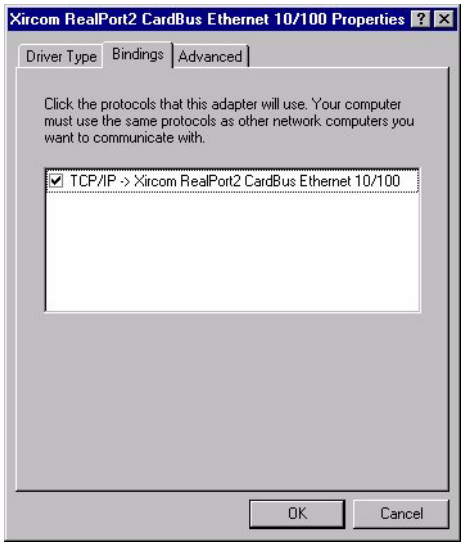
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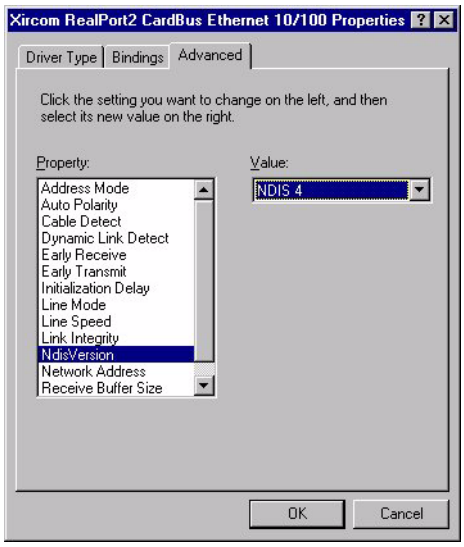


2. The settings in the **Driver Type**, **Bindings** and **Advanced** tabs are as follows:



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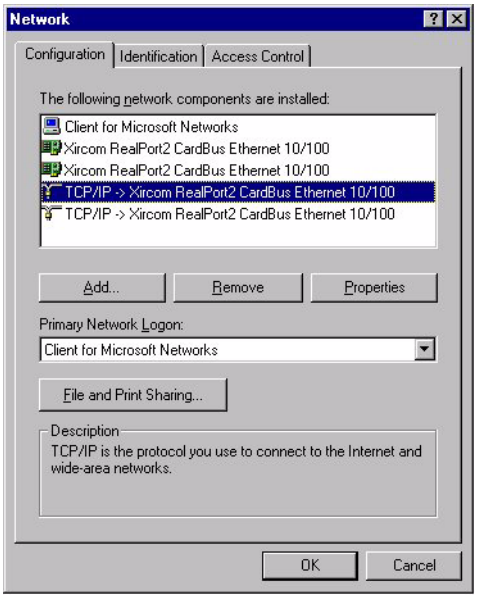


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3.4 Configuring the Network Protocol

1. Select the TCP/IP protocol bound to the network adapter card for the ES1000 from the list of installed network components and click **Properties**.

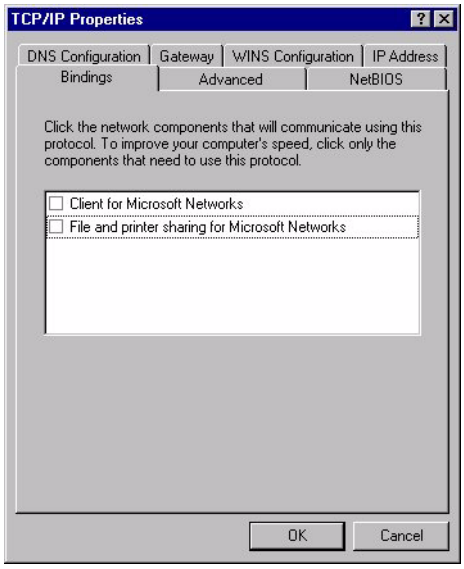


   The **TCP/IP Properties** dialog box opens.

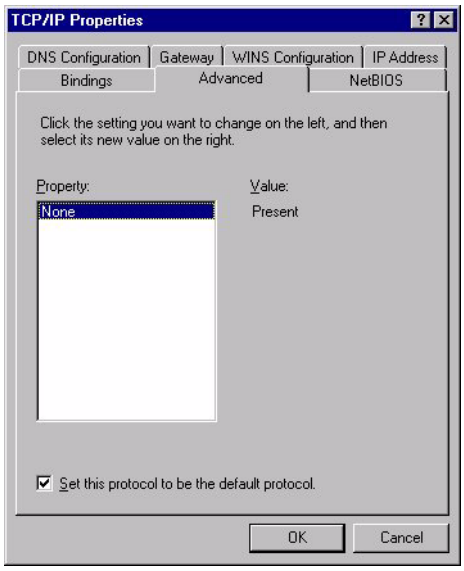
2. A number of settings must be made in this dialog box by selecting the respective tab. Use the settings given in the following figures.

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– Bindings

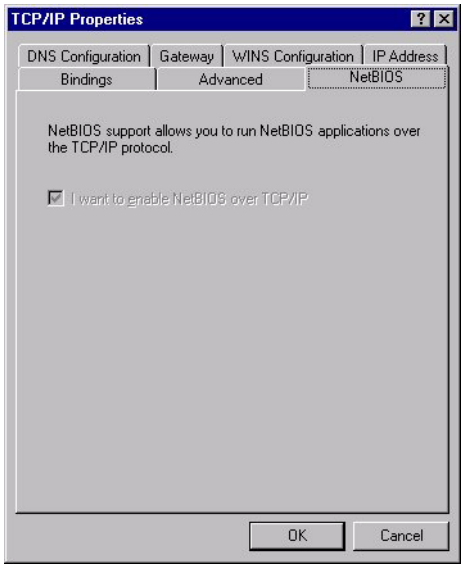


– Advanced

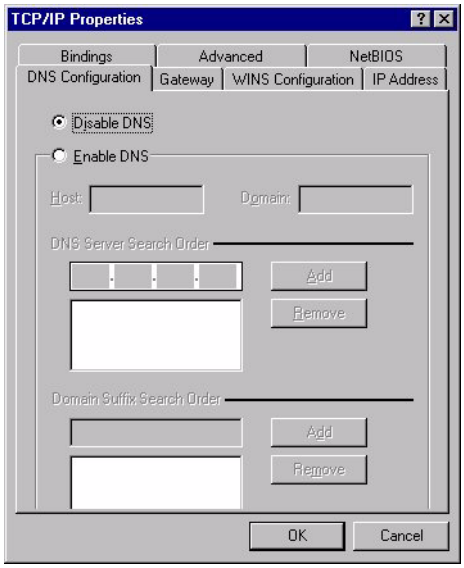


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– NetBIOS

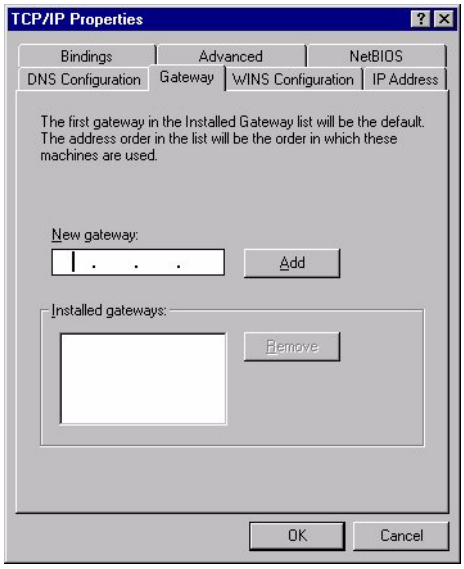


– DNS: use the settings of your LAN (if no LAN connection is present, DNS can be disabled).

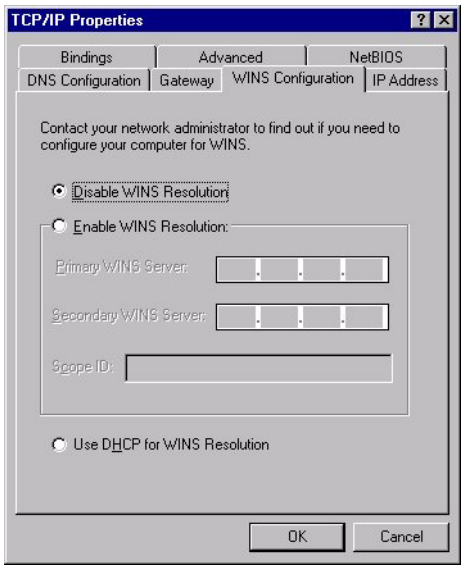


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– Gateway: no gateway required

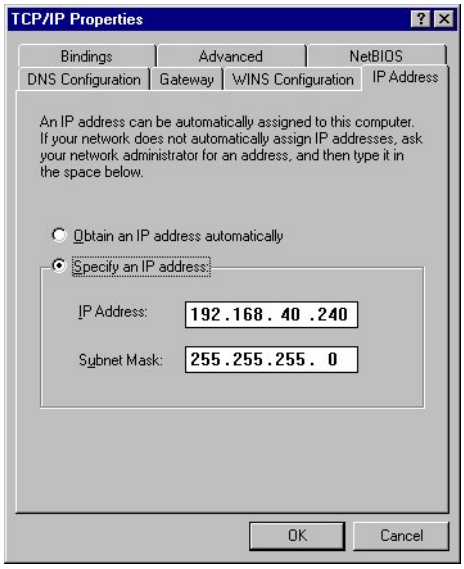


– WINS: use the settings of your LAN (if no LAN connection is present, WINS can be disabled).



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– IP address



If a second network adapter card for the LAN has to be configured, proceed as described above. Ask your administrator for the correct settings. If you have already removed an adapter card for the LAN, enter the old settings.

An overview of all network settings is given in the section "Configuration Parameters for TCP/IP" on page 33.

Hints on testing the installation are given in the chapter "Testing the Installation" on page 27.

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4 Installation and Configuration with NT 4.0

This chapter describes the installation of network adapter cards and the configuration of the TCP/IP protocol for Windows NT 4.0.

If a network card already installed is to be replaced by a new one, you must remove the old card first.

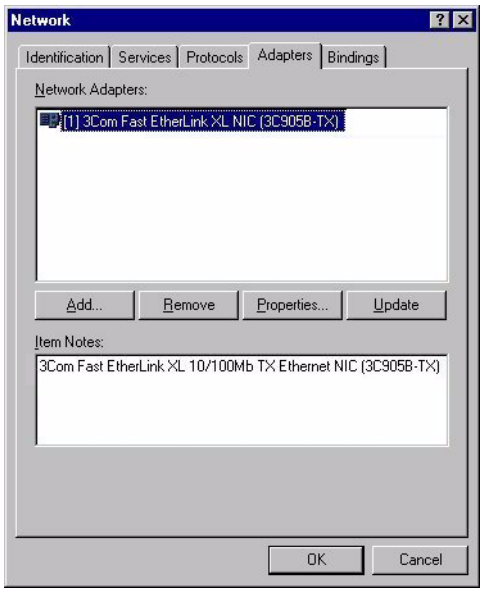
note

You must have administrator privileges to install under Windows NT 4.0.

4.1 Removing a Network Adapter Card

To remove a network adapter card, proceed as follows:

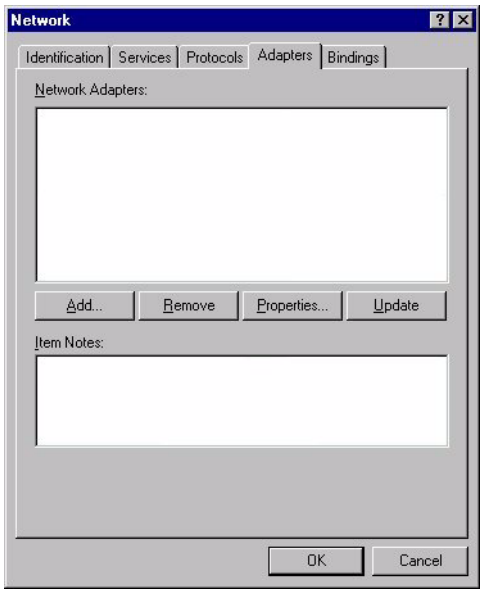
1. Choose **Start** → **Settings** → **Control Panel**.
2. Double-click **Network**.
3. In the **Network** properties dialog box, select the adapter you want to remove and click **Remove.**



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4.2 Installing a Network Adapter Card

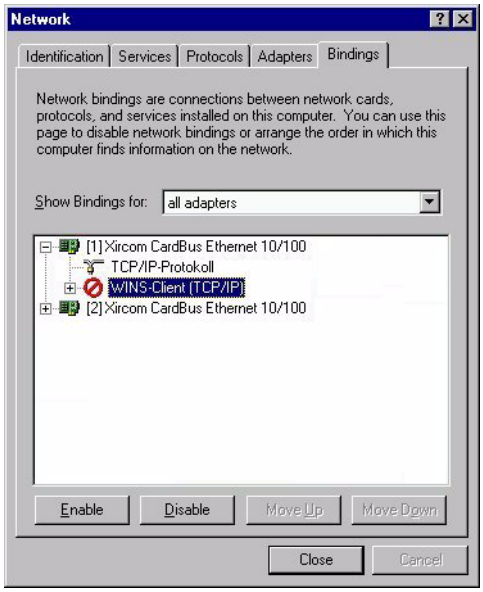
1. Plug in the new card and switch on the PC.
2. To open the **Network** properties dialog box, choose
   Start → **Settings** → **Control Panel**.
3. Select the **Adapters** tab and click **Add..**.



4. Then click **Have Disk...** . Choose the appropriate driver for your card from the disk or CD-ROM supplied by the manufacturer.
5. Follow the instructions given. When asked for a network protocol, choose 'TCP/IP'.

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6. Bindings: WINS client is not needed for communication with the ES1000.



7. Check the settings for the new network adapter, especially for address conflicts (**Start** → **Settings** → **Control Panel**).
8. Double-click **Network** and choose the **Adapters** tab.
9. Select an adapter and click **Properties**.
10. Restart the PC.

To install an additional network adapter card (e.g. to connect to a LAN), repeat the steps above. Please beware of possible address conflicts between the two adapters - identical interrupts are allowed with PCI-bus adapters or PC cards.

note

During the installation of the adapter card an error (Dr. Watson) is occasionally generated but can be ignored. The adapter functions properly after a restart.

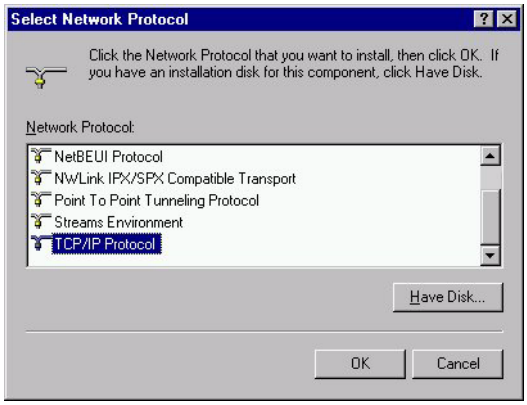
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4.3 Configuring the Network Protocol

To configure the TCP/IP protocol follow these steps:

1. Choose **Start** → **Settings** → **Control Panel** to open the **Network** properties dialog box.
2. Double-click the **Network** icon.
3. Select the **Protocols** tab and then select **TCP/IP Protocol**.

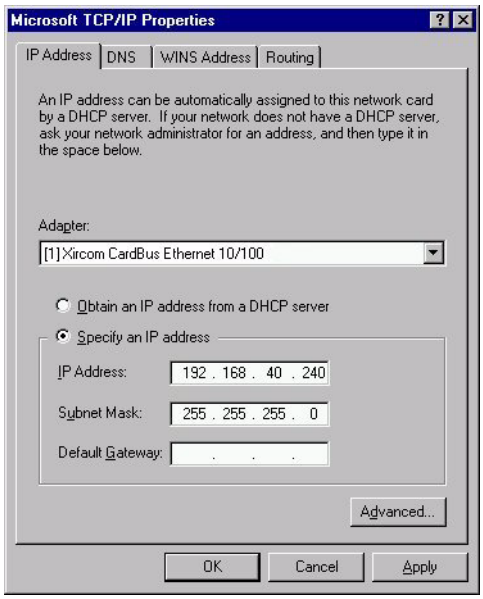
   If the protocol is not available, click **Add...** . The Select Network Protocol window opens.



4. Choose **TCP/IP Protocol** and click **OK**.
5. Select the **Protocols** tab and click **Properties**.
6. Enter the following settings:

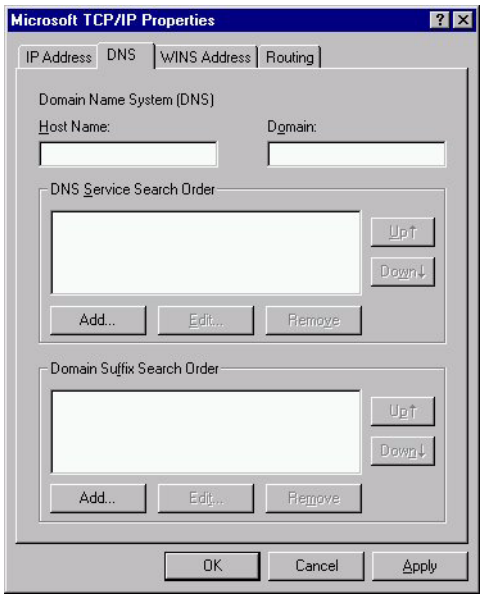
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– IP address:



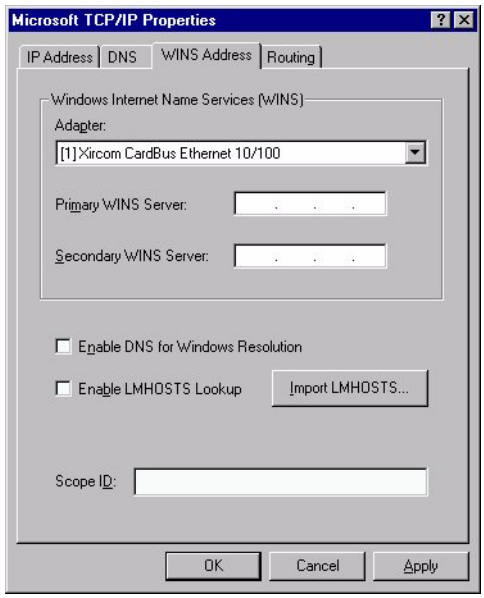
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– DNS: use the settings of your LAN (if no LAN connection is present, no entries are required here).



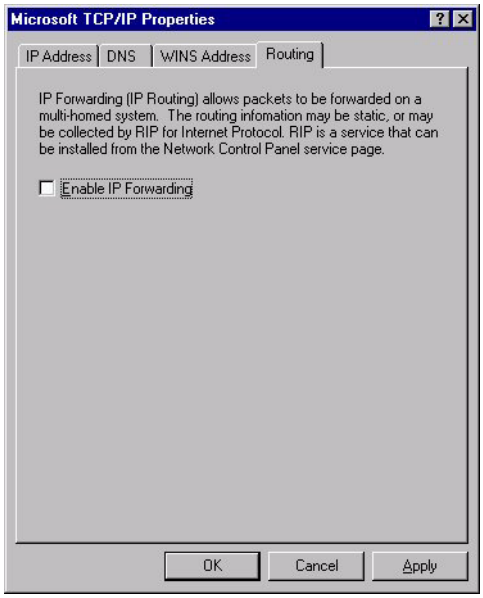
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– WINS: no entries are required here for communication with the ES1000 (WINS can be disabled).



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– Routing: IP forwarding must not be enabled!



If a second network adapter card for the LAN has to be configured, proceed as described above. Ask your administrator for the correct settings. If you have already removed an adapter card for the LAN, enter the old settings.

An overview of all network settings is given in the section "Configuration Parameters for TCP/IP" on page 33.

Hints on testing the installation are given in the next chapter.

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5 Testing the Installation

To check whether the installation of the network adapters and the configuration of the network protocol has been successful, follow these steps:

1. Open a DOS window (**Start** → **Programs** → **Command Prompt**)
2. Enter the following command:
   `ping 192.168.40.240`
   If the Ethernet adapter has been installed correctly, an output will be generated similar to the following:

```
Pinging 192.168.40.240 with 32 bytes of data:

Reply from 192.168.40.240: bytes=32 time<10ms TTL=128
Reply from 192.168.40.240: bytes=32 time<10ms TTL=128
Reply from 192.168.40.240: bytes=32 time<10ms TTL=128
Reply from 192.168.40.240: bytes=32 time<10ms TTL=128
```

If time-out messages are generated, check the installation again or possibly restart your PC.

Testing Communication with the ES1000 System

1. Connect your PC with the respective board (ES1120 or ES1130) using cable K109.
   The standard IP addresses of the boards are:

Board	IP Address
ES1120	192.168.40.10
ES1130	192.168.40.11

2. Enter the following command:
   `ping 192.168.40.10`

   or

   `ping 192.168.40.11`
   If communication with the respective board is working correctly, you will receive an answer like this:

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```
Pinging 192.168.40.10 with 32 bytes of data:

Reply from 192.168.40.10: bytes=32 time<10ms TTL=128
Reply from 192.168.40.10: bytes=32 time<10ms TTL=128
Reply from 192.168.40.10: bytes=32 time<10ms TTL=128
Reply from 192.168.40.10: bytes=32 time<10ms TTL=128
```

If time-out messages are generated, check the installation again or possibly restart your PC.

The network adapter is now installed and the network protocol configured. You can now install or start your new network-enabled INCA/ASCET applications.

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6 Appendix

6.1 Tested Configurations

PC	BIOS Version PCMCIA Mode [1]	Operating System[2]	1st Network Card for ES1000 (Driver Version)	2nd Network Card for Company Network (Driver Version)
Toshiba TECRA 750DVD	8.0 CardBus/16-bit	NT4.0 (Service Pack 4) No CardWizard	XIRCOM RealPort2 Card-Bus Ethernet 10/100, driver V3.01	XIRCOM RealPort2 Card-Bus Ethernet 10/100, driver V3.01
Toshiba TECRA 750DVD	8.0 CardBus/16-bit or Auto	Windows 95a	XIRCOM RealPort2 Card-Bus Ethernet 10/100, driver V3.01	XIRCOM RealPort2 Card-Bus Ethernet 10/100, driver V3.01
Toshiba TECRA 750DVD	8.0 CardBus/16-bit or Auto	Windows 95b	XIRCOM CardBus Ethernet II 10/100, driver V2.6	3Com Megahertz 10/100 LAN CardBus PC Card (Model: 3CCFE575BT) driver V2.6az
Toshiba TECRA 780DVD	7.5 CardBus/16-bit	Windows 95b	XIRCOM RealPort CardBus Ethernet 10/100, driver V2.6	3Com Etherlink III LAN PC Card
Toshiba TECRA 780DVD	7.5 CardBus/16-bit	NT4.0 (Service Pack 4) CardWizard-Plus V5.0	XIRCOM RealPort CardBus Ethernet 10/100, driver V2.6	-

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PC	BIOS Version PCMCIA Mode [1]	Operating System[2]	1st Network Card for ES1000 (Driver Version)	2nd Network Card for Company Network (Driver Version)
Toshiba TECRA 780DVD	7.5	NT4.0 (Service Pack 4) CardWizard-Plus V5.0	XIRCOM CardBus Ethernet II 10/100	3Com Megahertz 10/100 LAN CardBus PC Card (Model: 3CCFE575BT) driver V2.6az
Toshiba TECRA 8000	8.2 Auto	NT4.0 (Service Pack 4) CardWizard-Plus V5.0	3Com Megahertz 10/100 LAN CardBus PC Card (Model: 3CCFE575CT)	3Com Etherlink III LAN PC Card
Toshiba TECRA 8000	9.0 Auto	NT4.0 (Service Pack 4) CardWizard-Plus V5.00.10	Xircom CreditCard Ethernet 10/100 (Model: CE3B-100BTX) driver V2.05A (I/O:0x300, IRQ:10)	
Toshiba TECRA 8000	9.0 Auto	NT4.0 (Service Pack 4) CardWizard-Plus V5.00.10	3Com Megahertz 10/100 LAN CardBus PC Card (Model: 3CCFE574BT) (I/O:0x300, IRQ:10)	Xircom CreditCard Ethernet 10/100 (Model: CE3B-100BTX) driver V2.05A (I/O:0x340, IRQ:7)
Toshiba TECRA 8000DVD	8.2 Auto	NT4.0 (Service Pack 4) CardWizard-Plus V5.0	XIRCOM RealPort CardBus Ethernet 10/100, driver V2.6	-

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PC	BIOS Version PCMCIA Mode [1]	Operating System[2]	1st Network Card for ES1000 (Driver Version)	2nd Network Card for Company Network (Driver Version)
Toshiba TECRA 8000DVD	8.2 Auto	NT4.0 (Service Pack 4) CardWizard-Plus V5.0	XIRCOM CardBus Ethernet II 10/100, driver V2.6	3Com Megahertz 10/100 LAN CardBus PC Card driver V2.6az
Toshiba Tecra 8100	1.60 CardBus/16 Bit	NT4.0 (Service Pack 5) Kein CardWizard	XIRCOM RealPort2 CardBus Ethernet 10/100, driver V3.01	XIRCOM RealPort2 CardBus Ethernet 10/100, driver V3.01
Toshiba Tecra 8100	1.60 CardBus/16 Bit	Windows 95b	XIRCOM RealPort2 CardBus Ethernet 10/100, driver V2.61	XIRCOM RealPort2 CardBus Ethernet 10/100, driver V2.61
Desktop PC (PCI-Bus), motherboard: ASUS P2B-S	AWARD V4.51PG	NT4.0 (Service Pack 5)	3Com EtherLink 10/100 PCI Network Interface Card 3C905C-TX-N	3Com EtherLink 10/100 PCI Network Interface Card 3C905C-TX-N
Desktop PC (PCI-Bus), motherboard: ASUS P2B-S	AWARD V4.51PG	NT4.0 (Service Pack 5)	3Com EtherLink 10/100 PCI Network Interface Card 3C905B-TX-NM	3Com EtherLink 10/100 PCI Network Interface Card 3C905B-TX-NM

[1] The **PC Card Controller Mode** settings can be accessed in the BIOS-SETUP (press 'ESC' while booting) or in the Toshiba hardware (depending on the model) setup via **Start** → **Programs** → **Toshiba Utilities** → **Hardware Setup** → **Hardware Options** → **PC Card** or **Start** → **Control Panel** → **Toshiba Utilities** → **Hardware Setup**.

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[2] The CardWizard for NT 4.0 is on the CD-ROM supplied with your Toshiba notebook in the directory *driveletter*:\COMMON\CWNT\German\SETUP.EXE. No PCMCIA cards should be present in the slots when installing the CardWizard. During installation, the notebook may not be connected to a desk station or to a port replicator.

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6.2 Configuration Parameters for TCP/IP

Parameter	Setting
IP Address PC	192.168.40.240
IP Address ES1120	192.168.40.10
IP Address ES1130	192.168.40.11
Subnet Mask	255.255.255.0
DHCP	No
IP Forwarding	**No**
WINS Client	No (or same as company network)
DNS	No (or same as company network)

6.3 Resources for XIRCOM RealPort2

	Address	I/O Port	IRQ	NDIS Driver Version
Windows 9x				
1st card	000D8000 - 000D87FF 000D8800 - 000D8FFF 000D4000 - 000D7FFF	0280 - 02FF	11	NDIS4 or below
2nd card	000D0000 - 000D07FF 000D0800 - 000D0FFF 000CC000 - 000CFFFF	0400 - 047F	11	NDIS4 or below
Windows NT				
1st card	0x55B84000	0xF500	11	AUTO
2nd card	0x55B80000	0xF000	11	AUTO

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