

Plug-and-Play
(Jumperless)
10/100Base TX
(Full Duplex)
PCI/TX Bus Master
Fast Ethernet Adapter

Network Interface Card / Adapter
High Performance LAN Card for Servers or Workstations

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Introduction

Congratulations on your purchase of a BayLan PCI/TX Fast Ethernet Adapter. This adapter was designed and manufactured for you with reliable service.

The PCI/TX is a highly integrated and cost-effective single-chip adapter that provides 32-bit performance, PCI bus master capability, and full compliance with Fast Ethernet 100Base-TX specifications. It also supports full-duplex operation, making possible 200Mbps of bandwidth at no additional cost.

This feature not only increases the channel bandwidth from 10M to 200Mbps but also avoids the performance degrading problem due to the characteristic of the Ethernet CSMA/CD protocol.

Unpacking List

Before installation, open your adapter card's package and carefully remove all items, which should contain the following.

- PCI/TX adapter
- CD (Installation Wizard, Manual, & Driver)

If anything is missing, please contact your supplier.

Product Features

- Support 32-bit PCI Local Bus Master for high throughput and low processor utilization.
- Plug and Play configuration through the PCI BIOS without jumpers.
- Complete compatibility with the 100Base-TX and 10Base-T Standards.
- Auto-negotiation selects interoperation options for compatibility and best performance.
- Support 10/100Mbps and half/full-duplex network operation.

- Single shield RJ-45 connector for use at either speed (Category 3,4, or 5 and above for 10Base-T Ethernet networks and Category 5 UTP and above for 100BASE-TX Fast Ethernet networks).
- Provide diagnostic LED's for quick troubleshooting.
- Provide Optional WOL & ACPI function.
- Provide Optional Remote Boot ROM socket.

Product Description

The PCI/TX is a dual-speed adapter connected to an Ethernet network with a single RJ-45 connection over unshielded twisted-pair (UTP) cable. The adapter supports 10Mbps and 100Mbps Ethernet networks. On power-up, the adapter can use auto-negotiation to automatically determine line-operating conditions.

- When the adapter is connected to a hub that supports 10Base-T Ethernet (10Mbps), it switches to a network speed of 10/20Mbps.
- When the adapter is connected to a hub that supports 100Base-TX Fast Ethernet (100Mbps), it switches to a network speed of 100/200Mbps.

Configuration of the PCI/TX Adapter

PCI Computer with PnP Auto-Configuration

The steps are used to configure your adapter, which depend on whether your computer system supports the Plug and Play (PnP) specification. In most cases, the PCI computer will be configured automatically by the system's BIOS during boot up. The BIOS automatically assigns the I/O base address and IRQ to the adapter for proper operation.

PCI Computer without PnP Self-Configuring

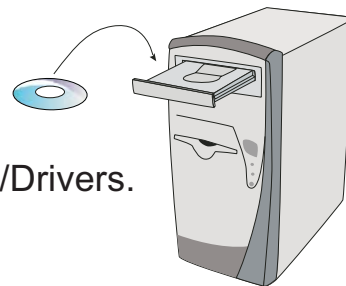
Some PCI computers required additional configuration steps in order to install a PCI adapter. The steps which we recommend are as following:

1. Make sure that the BIOS are set up correctly. In some PCI computer, you may need to enable the PCI slot by using the BIOS setup program, or motherboard jumper changes.
2. Choose a PCI Slot number to use. Remember the PCI Slot number where the adapter was installed, and need to set up as Bus Master (Enabled).
3. Reserve interrupts (IRQs) and/or memory address for ISA adapter. The PCI adapter is prevented to use the same settings which ISA adapter are using. Check your PCI BIOS Setup program; which may be IRQ options such as "Enable for ISA" or "Disable for PCI".
4. Enable the PCI slot and assign IRQx to INTA. In the PCI bus slots, the adapter can only use INTA interrupt line. You must assign a system IRQx to INTA on the PCI slots. This is an important step in configuring the adapter or it will not work properly.

Consult your computer manual for information for changing the settings of the motherboard jumper and the setup of parameters of BIOS for use with PCI adapters.

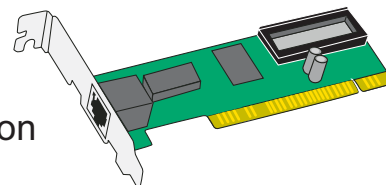
Installing Network Drivers

The adapter can support most popular NOS/Drivers. The software drivers files are located in separate subdirectories of drivers' CD.



Quick Hardware Installation

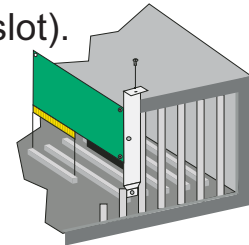
Turn off and unplug your PC before installation of this adapter which requires opening and



manipulating your PC. Exercise caution at all times when working with AC power and static sensitive equipment.

Step 1: Insert card into computer

- Turn OFF the power of computer to prevent any accidental damage.
- Remove your computer's cover (refer to your computer owner's manual).
- Select an available PCI expansion slot which supports Bus Master mode and remove slot cover. Make a note of the slot number (if one is printed on the motherboard, next to this slot).
- Carefully install the adapter by firmly pressing the card into the slot which you have chosen and applying even pressure until the adapter is completely seated in the slot.
- Fasten the retaining bracket with the screw on the slot cover. Make sure the adapter is properly aligned.
- Replace the system box cover and fasten it.



Step 2: Connecting to the Network

This section describes how to connect 10Mbps or 100Mbps network cables to the PCI/TX adapter.

The back plate of the PCI/TX adapter contains one RJ-45 connector. This adapter can use auto-negotiation to automatically determine line-operating conditions, such as 10Base-T, 100Base-TX, or a corresponding Full-Duplex mode based on the type of HUB/SWITCH to which it is connected.

For 10Base-T Ethernet networks, use Category 3, 4, or 5 UTP and above cabling.

For 100Base-TX Ethernet network, use Category 5 UTP and above cabling. The cable segments length **less than or equal to 100m** each (between any station and its supporting HUB/SWITCH).

Note : Refer to Appendix for more information.
Appendix A for RJ-45 Connector Pin Assignments.
Appendix B for Network Cabling.

Troubleshooting

Diagnose the PCI/TX Adapter

To run the setup program. Insert the driver CD into CD-ROM drive and run setup at the DOS prompt.

The setup program can view current configuration and diagnostics the PCI/TX Adapter. This testing includes three separate procedures:

- **View Current Configuration**
- **Setup New Configuration**
- **Run diagnostics Menu**

If the adapter is unable to be connected to the network

Make sure that the cable is installed properly. The network cable must be securely attached to all connections. If the cable is attached, but if the problem persists, try to use different cable.

Note : If you're operating at 100Mbps, you must use UTP Category-5 wiring. If you're directly connecting two workstations (no hub/switch), use a crossover cable. Check the LED lights on the adapter. These lights must help to indicate if there's any problem with the connector, cables, or hub/switch.

Appendix A.

RJ-45 Connector Pin Assignments

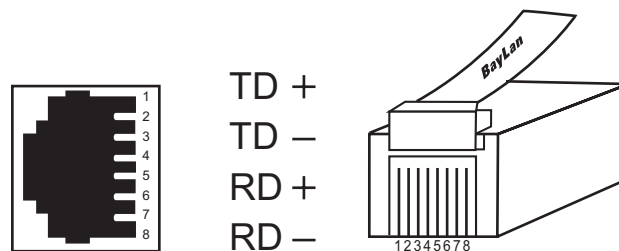


Figure 1. Shows the PCI/TX RJ-45 Connector Pin Assignments

Note: The Pin assignments are identical for 10Base-T and 100Base-TX, by using UTP cable.

Appendix B.

Network cabling

In Fast Ethernet 100Base-TX, the cable, quality, distance and connectors must comply with the **EIA/TIA 568** “Commercial Building Wiring Standard”. IEEE 802.3u Specification: The 100Base-TX specification supports 100Mbps transmission over two or four pairs of twisted Ethernet wiring. In two pair wiring, one pair of wires is used for transmission, and the second is used for collision detection and receiving.

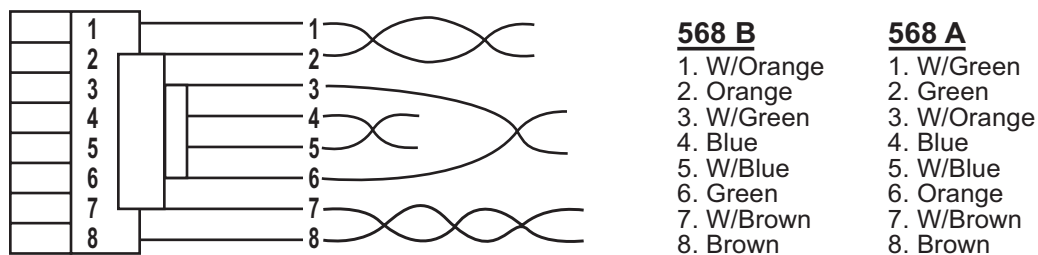


Figure 2. Shows the Unshielded Twisted Pair Wiring

Note: For the 10/100 Mbps twisted pair cable, pins 1&2 must be a pair and pins 3&6 must also be a pair. Each pin must connect straight to the other end of the cable (pins 1 to 1, 2 to 2, 3 to 3, 6 to 6), other pins are not used.

Crossover Cable : For this type of connection 568B color coding on one end & 568A on other end.

Technical Specifications

Standards	IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX
Host Interface	32bit PCI bus master
Media Interface	RJ-45 connector
Hardware interrupt	PCI INTA
Transmission Rate	10Mbps, 100Mbps 20Mbps, 200Mbps (in full-duplex mode)
Host Configuration	IRQ, I/O address, define by PCI system BIOS
Network Type	10Base-T and 100Base-TX
EMI	FCC Class B, CE Marking certification

LIMITED WARRANTY

BayLan warrants that your PCI/TX adapter will be free from defects in material and workmanship and will perform to applicable specifications for one-year warranty period. The warranty period will be calculated from the date of original purchase. This warranty does not cover the damage done to other equipment used in conjunction with this unit.

In case the product is discontinued, it will be upgraded to the next new product at new price less salvage value of your product (Example: Salvage value = Cost/12 X No. Of unused months).

BayLan will replace, at no charge, any adapter that does not meet our warranty. The adapter must be returned in the packaging provided by BayLan with transportation charges prepaid to the authorized BayLan destination. This warranty is void if defect has resulted from accident, abuse, unauthorized repair, modification, misapplication & improper environment power requirement and Grounding of equipment.

This limited warranty gives you specific legal rights. You may have others, which vary from state to state. BayLan reserves the right to change, without notice, product offerings or specifications with advancement in technology.

CE Declaration of Conformity

This equipment complies with requirements relating to electromagnetic compatibility. EN55022 class A for ITE and EN50082-1, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the Member States relating to electromagnetic compatibility.

FCC Warning

This product has been tested and found to comply with the limits for Class B computing device pursuant to Part 15 of FCC Rules. Changes or modification to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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