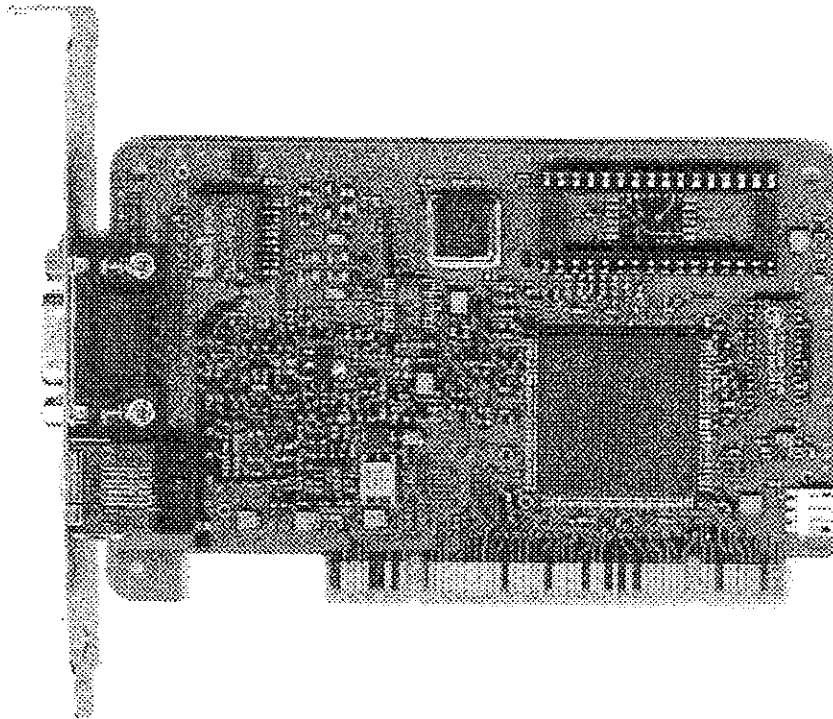


Using the Smart 16/4 PCI Ringnode Mk 3

This page comprises:

- [Introducing the Smart 16/4 PCI Ringnode Mk 3](#)
- [Installing the Smart 16/4 PCI Ringnode Mk 3](#)
- [Managing promiscuous mode](#)
- [Enabling remote PC management using Wake-On-LAN](#)



Related information:

- [Installing driver software](#)
- [Password protecting the Smart 16/4 PCI Ringnode Mk 3](#)
- [EMC compliance statement](#)

Introducing the Smart 16/4 PCI Ringnode Mk 3

The Smart 16/4 PCI Ringnode Mk 3 is the latest token-ring adapter from Madge. It is an enhancement to the Smart 16/4 PCI Ringnode Mk2.

The Smart 16/4 PCI Ringnode Mk 3 supports the following initiatives:

- [DTR – Full Duplex \(dedicated\) Token Ring](#)
- [ACPI - the Advanced Configuration and Power Interface](#)
- [PCI 2.2](#)
- [Remote PC wake-up \(OnNow, Wake-On-LAN, MAGIC PACKET™\)](#)
- [DMI 2.0](#)
- [PC97/98/99](#)
- [Remote booting](#)
- [New security options](#)

DTR – Full Duplex (dedicated) Token Ring

Full Duplex (dedicated) Token Ring is an enhancement of the IEEE 802.5 (Token Ring) specification allowing a dedicated 16Mbps bandwidth simultaneously in both directions between a DTR-enabled token-ring switch port and a token-ring adapter. This allows increased bandwidth to be obtained from a server or delivered to the desktop.

ACPI - the Advanced Configuration and Power Interface

The Advanced Configuration and Power Interface, a specification from Microsoft, Intel, and Toshiba (with support from a host of participating PC and networking industry vendors), is designed to extend and standardise the power management and Plug-and-Play capabilities on the PC platform. ACPI provides a standards-based platform that will enable network managers to remotely administer and manage PCs through the network connection from a single network management console.

The Smart 16/4 PCI Ringnode Mk 3 provides full support for power states D0, D1, D2 and D3 as defined by version 1.0 of the ACPI power management specification. As part of this support, 8 bytes of capability register information are available through PCI configuration space. These capability registers reflect the availability of auxiliary power supply and report the adapter's power consumption as 3W in D0 and D1, and 2.5W in D2 and D3. The Smart 16/4 PCI Ringnode Mk 3 can generate the new power management event signal even when the PCI bus clock is stopped.

For more information about ACPI, visit the ACPI web site at: <http://www.teleport.com/~acpi/>

PCI 2.2

The Smart 16/4 PCI-Ringnode Mk3 is fully compliant with PCI specification 2.1 and with the proposed PCI 2.2 specification. This includes its ability to derive power from a 3.3V auxiliary power supply whilst in sleep mode, with the bus and the rest of the PC system effectively powered off.

Remote PC wake-up

The Smart 16/4 PCI Ringnode Mk3 is one of the few network adapters to support both the Wake-On-LAN and ACPI remote wake-up strategy on the same adapter.

- **OnNow**

OnNow is a Microsoft initiative designed to enable the instant availability of the PC, regardless of its current power state. ACPI-compliance in the PC is a requisite capability for OnNow. To achieve this functionality in a networked environment, the PC's network adapter must also be ACPI-compliant

For information about OnNow from Microsoft, visit <http://www.microsoft.com/hwdev/onnow.htm>.

- **Wake-On-LAN**

Wake-On-LAN is IBM's initial strategy for remotely powering on and configuring a PC through a network management application. Whereas ACPI's remote wake-up capability utilises the PCI bus to send the wake-up signal from the LAN connection to the PC system, Wake-On-LAN requires a cable connection inside the PC from the network adapter to the motherboard. For information about using Wake-On-LAN with your Smart 16/4 PCI Ringnode Mk3, see [Enabling remote PC management using Wake-on-LAN](#), below.

For information about Wake-On-LAN from IBM, visit <http://www.networking.ibm.com/eji/ejiwake.html>.

- **MAGIC PACKET™**

MAGIC PACKET™ is a protocol devised by Advanced Micro Devices (AMD) to trigger the remote wake-up of the PC via the network connection. Wake-On-LAN's remote wake-up function relies on the MAGIC PACKET™ being transmitted over the network connection to initiate the system wake-up sequence; ACPI can also utilise the MAGIC PACKET™, as well as other Power Management techniques.

For more information about Magic Packet™ Technology, read the AMD overview at <http://www.amd.com/products/npd/overview/20212d.html>.

DMI 2.0

To further facilitate the remote management of networked PCs, the Smart 16/4 PCI Ringnode Mk3 also supports DMI (Desktop Management Interface) 2.0, which enables networked PCs to report details about their configuration and peripherals across the network connection to a DMI-enabled management application. This gives the network manager important information to remotely assist in fixing, upgrading, or troubleshooting networked PCs. Check our web site for the DMI agent (<http://www.madge.com>).

PC97/98/99

These terms refer to the PC system design guidelines developed by Intel and Microsoft to assist in the evolution of high quality PC systems and peripherals. The Smart 16/4 PCI Ringnode Mk3 meets all the mandatory requirements of a network adapter in a PC97, PC98 compliant system. It also meets the requirements of the proposed PC99 specification.

For more information about PC Design Guidelines, read the Microsoft specifications at: <http://www.microsoft.com/hwdev/desguid/>

Remote booting

The Smart 16/4 PCI Ringnode Mk3 supports remote booting. By attaching a Smartrom to the Smart 16/4 PCI Ringnode Mk3, you will be able to boot directly from a network server. Future releases of LSS will support remote-boot protocols (for example, RPL and DHCP/BootP).

New security options

- you can configure the Smart 16/4 PCI Ringnode Mk3 to disable promiscuous mode. This prevents desktop users from being able to view network traffic. If you do this, promiscuous mode is permanently disabled and can never again be re-enabled. For more information, see [Managing promiscuous mode](#) below
- you can password protect the adapter's configuration. For more information, see [Password protecting the Smart 16/4 PCI Ringnode Mk 3](#)



Installing the Smart 16/4 PCI Ringnode Mk 3



Always turn off the power to your computer before installing or removing any adapters.



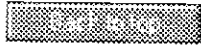
The default ring speed setting for this adapter is 'auto-detect'. This means the adapter will run at the same ring speed as the network (either 4Mbps or 16Mbps). To change the default setting, use Madge Assist.



This adapter has no switches or links that need setting. PCI computers configure PCI adapters automatically.

1. Read the [EMC compliance statement](#) for this adapter.
2. Read the [handling precautions](#).
3. Check that the adapter is [bus compatible](#) with your computer.
4. Remove the blanking plate from the PCI slot nearest the motherboard.
5. Insert the adapter into the slot and secure it by using the retaining screw from the blanking plate that you removed.

6. Connect a data-cable to the appropriate connector on the adapter: the 9-pin D-type connector for STP cabling or the RJ45 connector for UTP cabling (see [Locating the data-cable connectors](#)). The Smart 16/4 PCI Ringnode Mk 3 automatically detects the type of cabling you connect to the adapter.
7. Connect the other end of the data-cable to a working token-ring network.
8. Re-boot the computer.
9. Run Madge Assist to check that the adapter and its connection are working correctly. (See [Configuring and testing adapters with Madge Assist](#).)
10. [Install the driver software.](#)



Managing promiscuous mode

Promiscuous mode is a special reception mode where an adapter will receive all frames on the ring, not just frames which the adapter address-matches. This functionality is used by network traffic monitoring agents.



By default, the Smart 16/4 PCI Ringnode Mk3 supports promiscuous mode.

To use promiscuous mode with the NDIS3 or NDIS4 drivers, you must enable the "Statistic Gathering" option. (See [Driver parameters](#), for your operating system.)

On a Smart 16/4 PCI Ringnode Mk3, there are two ways of disabling promiscuous mode: temporarily and permanently.

1. Temporarily disabling promiscuous mode

To temporarily disable promiscuous mode support on a Smart 16/4 PCI Ringnode Mk3, use Madge Assist (see [Configuring and testing the Smart 16/4 PCI Ringnode Mk 3 with Madge Assist](#)). If promiscuous mode support is disabled in this way, you can use Madge Assist subsequently to re-enable promiscuous mode support.



Use the PWSET.EXE utility to password-protect configuration. (See [Password protection the Smart 16/4 PCI Ringnode Mk 3](#).)

2. Permanently disabling promiscuous mode



Only use the procedures referenced below if you are absolutely sure you want to **permanently** disable promiscuous mode on the adapter.

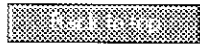
The following are procedures for **permanently** disabling promiscuous mode:

- [with Windows 95 and the NDIS3 driver \(MDGMPORT.SYS\)](#)
- [with Windows 95 and the NDIS4 driver \(MDGNDIS4.SYS\)](#)
- [with Windows NT and the NDIS3 driver \(MDGMPORT.SYS\)](#)
- [with Windows NT and the NDIS4 driver \(MDGNDIS4.SYS\)](#)
- [with Windows 98 and the NDIS3 driver \(MDGMPORT.SYS\)](#)
- [with Windows 98 and the NDIS4 driver \(MDGNDIS4.SYS\)](#)
- [with Novell Netware and the CMDGODLLAN driver](#)

Once you have successfully started Assist or one of the above mentioned drivers on a Smart 16/4 PCI Ringnode Mk3 for which you have permanently disabled promiscuous mode, the adapter will never again be able to support promiscuous mode.



Once the promiscuous mode has been permanently disabled on an adapter, you cannot re-enable promiscuous mode support on that adapter



Enabling remote PC management using Wake-On-LAN

To be able to use the Wake-On-LAN feature of the Smart 16/4 PCI Ringnode Mk3, your PC must provide Wake-On-LAN support. You have to make changes to your PC to enable it to support Wake-On-LAN. The precise nature of these changes will depend on the make and model of your PC. We can only provide guidelines. You will have to refer to your PC documentation for details about your specific PC and set-up.

For more information about Wake-On-LAN, see [Introducing the Smart 16/4 PCI Ringnode Mk 3](#), above.

Setting up your PC to use Wake-On-LAN

1. Fit the Wake-On-LAN cable

First, install the adapter into the PC (see [Installing the Smart 16/4 PCI Ringnode Mk 3](#), above). Using the Wake-On-LAN cable supplied with your Smart 16/4 PCI Ringnode Mk3, fit one end to the 3-pin socket at the back of the adapter (see [picture](#)) and the other end to the Wake-On-LAN socket inside your PC. This socket is usually on the motherboard, but might be on the riser card. Read your PC documentation for further details.

2. Check that your PC's BIOS is enabled to support Wake-On-LAN

Boot the PC and view the BIOS. Change the BIOS parameters to enable power management to support Wake-On-LAN. You will have to read the documentation that came with your PC for more information about accessing and editing the BIOS.

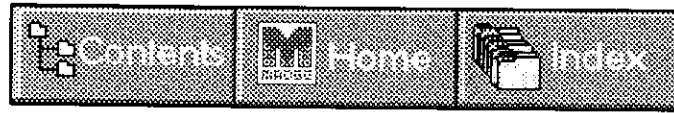
3. Enable your driver software to support Wake-On-LAN

Continue with your installation. You must configure the Wake-On-LAN parameter for the driver you are installing for the Smart 16/4 PCI Ringnode Mk3. The parameter that you use depends on the driver you are installing. By default, the Wake-On-LAN parameter is disabled. The table below displays the Wake-On-LAN parameters. For information about changing parameters, see [Driver parameters](#).

Driver	Wake-On-LAN parameter	How to leave the PC so it can be 'woken-up'
The NDIS 3 driver for Windows 95 and NT, MDGMPort.SYS	change the parameter to: enabled	Use the Windows shutdown function
The NDIS 4 driver for Windows 95/98 and NT, MDGNDIS4.SYS	change the parameter to: enabled	Use the Windows shutdown function
The Client 32 driver for DOS, CMDGODI.LAN	change the parameter to: WOL=YES	Type UNLOAD CMDGODI at the command line. Note that any NLMS loaded after CMDGODI (e.g IPX.NLM or CLIENT32.NLM) must be unloaded first



CMDGODI.LAN does not support Wake-On-LAN on NetWare servers



EMC compliance statement

The statements on this page apply to the following adapter:

- Smart 16/4 PCI Ringnode Mk3

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- this device may not cause harmful interference
- this device must accept any interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is advised that any modification to the board not expressly authorised by the manufacturer may void the user's authority to operate this device.

Canadian Statement

This Class A digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European EMC Directive This product carries the CE mark to indicate that it meets the requirements of the European Directive on Electromagnetic Compatibility (89/336/EEC). It has been tested to the following standards: EN55022, EN50082-1. For operation in commercial or industrial environments (Class A), there are no restrictions on cable types that can be used.

