

**HyperNet**

**Token Ring PC Card**

**HYNTR70002**

**User Guide**

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## **European Community (EC) Electromagnetic Compatibility Directive.**

This equipment had been tested and found to comply with the protection requirements of European Emission Standard EN55022 and the Generic European Immunity Standard EN50082-1. This equipment is designed to operate in a domestic environment and as such is tested to the EN5022 ITE domestic emissions limit. The domestic immunity standard EN50082-1 calls for the following basic standards:

- (a) IEC 801-2 Electrostatic Discharge
- (b) IEC 801-3 RF Immunity
- (c) IEC 801-4 Transient Burst

This product also complies with the requirements of the EMC Directive 89/336/EEC. The products were tested in a typical configuration.

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PCMCIA compatibility and Plug and Play features are assured with full support of all major Card and Socket Services vendors. Compatibility with all major Network Operating Systems is guaranteed by Hypertec's wide range of well tested NOS drivers. Additionally, Hypertec's Token Ring PC adapter is compatible with software packages such as the IBM PC Network Program, the Advanced Program to Program Communication (APPC) package, and the Multi Protocol Transport Services (MPTS) package.

## Features

- Platform independent - Supports all PCMCIA 2.1, type II compliant PCs
- PCMCIA Card and Socket Services support
- Direct enablers to reduce memory requirements included
- LLC 802.2 & 802.5 provides access to ISO and SNA protocols
- Wide selection of drivers
- Support is provided for APPC/PC, NETBIOS, 3270 and AS400 connectivity
- STP and UTP media connections
- Easy installation and configuration
- Self-test and Diagnostic

If you do not have each of these items, contact your supplier before proceeding further

## **Static Electricity Warning**

Static electricity is accumulated naturally in the human body, and can be discharged through electrical components by touching them. This shock can potentially cause permanent internal damage to the component.

When installing the adapter, please observe the following precautions:

Discharge yourself before commencing by touching a grounded metal appliance, such as the metal frame of a computer - while it is tuned off, but still plugged into the wall socket.

Hold the adapter or any other boards by their edges only. Never touch any exposed pins on the adapter.

If possible, install the adapter as soon as you remove it from its anti-static bag, without putting it down. If you must put it down, place it on the anti-static bag in which it was packed.

Do not place the adapter on any metal surface.

adapter is a Type II PCMCIA card, which is compatible with any Type II PCMCIA slot. If your computer has more than one slot, you may insert the adapter in any of them. The Token Ring software automatically determines into which slot the card is inserted.

Gently insert the card into the PCMCIA slot, pushing it until it sits firmly in place. The card will only fit one way; care must be taken not to force it. If it does not register smoothly, withdraw it and check that it is correctly aligned.

You may now connect the STP connection to the keyed socket on the exposed end of the card, again do not force it.

Two types of network cable can be used: Type 1 Shielded Twisted Pair (STP) or Type 3 Unshielded Twisted Pair (UTP). When using UTP cable, a Media Filter needs to be attached to the STP cable.

If you are using Type 1 STP cabling, secure the STP cable to the DB-9 connector. If you are using Type 3 UTP cable, secure the media filter to the DB-9 connector on the cable, and then insert the RJ45 connector of the Type 3 UTP cable into the media filter.

## Software Installation

This section presents the software installation procedures for the HyperNet Token Ring PC card. These procedures must be performed before the first time you use the card.

Note: See the documentation file, README.TXT, located in the root directory of the software diskette for the latest installation updates.

### Card and Socket Services

Below is a brief explanation of Card and Socket Services, its application and advantages/disadvantages. If your computer has Card and Socket Services, refer to the vendor manual for a fuller explanation.

Card and Socket Services is an interface software program standardised by the PCMCIA (Personal Computer Memory Card International Association). Card and Socket Services are either supplied by the notebook vendor or by the operating system vendor.

Socket Services software provides a standardised interface for handling PCMCIA cards, sockets and adapters. Socket Services uses a modest amount of memory and provides a hardware independent method of interfacing.

Socket services. When Card and Socket Services are present, the drivers will automatically configure themselves to work with it. When Card and Socket services are not detected, the drivers will automatically select to work with direct enablers.

#### Hypertec's PCMCIA Support Driver

The Hypertec PCMCIA Support Driver (SPTDRV) either replaces or works in conjunction with the Card & Socket Services software.

Generally, the Hypertec PCMCIA Support Driver should be installed after vendor supplied Card/Socket Services software. See the documentation file for further information.

#### Memory Managers

This section is for installation with direct enablers only. If your installation uses card and socket services, proceed to the next section.

The Hypertec Token Ring PC Card automatically selects a free memory range to use. However, if a memory manager is already loaded you may experience memory setting conflicts.

To avoid this potential conflict, we recommend that you carry out the following steps:

1. Make a copy of the existing config.sys file before editing it.
2. Modify the Memory Manager command line in the config.sys file to exclude the memory range used by the Token Ring PCMCIA Card. For example:
3. For 386Max, type the following:  
device = c:\386max.sys pro=c:\386max.pro ram=d000-d400
4. For EMM386, type the following:  
device = c:\windows\emm386.exe x=d000-d400
5. Re-boot the computer.

#### Backing Up Your Installation Diskettes

Before installing the Token Ring PCMCIA Card software, make sure to create a backup of the supplied diskette. You should keep the original in a safe place and work with the backup diskette. Making a backup will protect the original diskette.

#### Installation Summary

The Token Ring PC Adapter Card software has been designed to make installation simple and quick. Hypertec's Wizard Utility provides detailed on-screen instructions throughout the installation process and a help utility is available at all times.

in "Custom" mode. These procedures are the same as for modifying configuration parameters and running diagnostic tests after the initial installation, as described in Section 4, "Operation".

#### Windows Installation

To install the adapter using Windows:

1. Start Windows.
2. Insert the SPT software diskette into the PC diskette drive.
3. From the Program Manager, select the File menu.  
(For Windows 95, select the Start menu)
4. Select Run...
5. Type A:\SETUP and select OK.
6. Follow the Wizard utility's on-screen instructions for the setup process.

#### DOS Installation

To run the Wizard utility:

1. Insert the diskette into the PC diskette drive and type A:\INSTALL at the DOS prompt. The main installation screen appears.
2. Press OK to confirm the specified destination directory.

After the files are copied, the Network Speed screen appears.

#### Setting the Network Speed

Token Ring networks operate at a speed of either 16 Mbps or 4 Mbps. To modify the speed:

1. Click on the pull down list to select the required speed.
2. Press OK to save the parameters. The Hardware Setup screen appears.

screen indicates the tests status.

#### Running Tests

1. While the tests run, the Close button on this screen changes to a Stop button. To stop the tests, press Stop.
2. If a test failed, a message appears next to the failed status, and the tests stop running. To view troubleshooting information for a failed test, press Details.
3. The Wizard utility gives the option of returning to the Hardware Setup screen and redefining parameters.
4. If a test failed and you returned to the Hardware Setup screen the tests run again when you exit the setup screen.
5. Press Close to exit the test screen.

At this point the driver is installed in your config.sys file. Your original config.sys was saved as config.bak.

The Install Network Driver screen appears.

#### Installing a Network Driver

The Install Network Driver screen presents a list of Network Operating Systems.

1. Select a Network Operating System.  
Note: If you select a system with advanced options, the Advanced button is enabled. In this case, press Advanced to view advanced network options for the selected driver.
2. Follow the instructions from one of the network driver installation sections for your specific Network Operating System.

#### Exiting the Installation Program

When you exit the installation program, the Wizard utility displays that the Hypertec Token Ring PC Card software has been installed. To complete installation, reboot the system.



The following sections present instructions for installing specific Network Operating System drivers. For other Network Operating Systems, please follow the on-screen instructions or print the appropriate documentation file from the DOCS sub-directory on the SPT software diskette.

#### Novell

1. Select the NetWare version of your choice and press Install.  
A screen appears which prompts you to enter the destination directory.
2. Keep the default path or enter a new path and press OK to confirm the destination directory.

A progress screen appears as the wizard utility creates the necessary files, including the STARTNET.BAT file.

*Installation is now complete.*

To run NetWare, type STARTNET, unless you have installed the batch file in your autoexec.bat file.

#### Windows for Workgroups

Hypertec's Token Ring Software diskette contains files and is structured as an OEM import disk for Windows. Using the Wizard program supplied on the diskette, the user may choose special custom configuration for the adapter operation or the easy-to-use auto-configuration selection feature of the installation software.

To correctly perform a new installation of Windows for Workgroups and Network Driver, use the Windows for Workgroups installation program as follows:

1. When installation is complete, select OK and reboot.
2. Insert the Windows for Workgroups (WFW) installation diskette into the diskette drive.
3. Proceed with installation according to the instructions in the Windows for Workgroups installation guide.
4. Select unlisted or updated from the Install Network Adapter window.
5. Insert the Hypertec Token Ring software diskette into the disk drive.
6. Specify the \WFW directory.
7. Select Hypertec PCMCIA Token Ring from the menu and select OK.
8. Follow the on-line instructions to complete installation.

Windows for Workgroups will now copy the appropriate drivers to the hard disk and modify the config.sys, autoexec.bat, system.ini and protocol.ini files.

10. Windows for Workgroups will now copy the appropriate drivers to the hard disk and modify the config.sys, autoexec.bat, system.ini and protocol.ini files.
11. When installation is complete, select OK and reboot.

*Installation is now complete.*

#### Windows 95

Hypertec's Token Ring Software diskette contains files and is structured especially to support Windows 95 Plug & Play installation.

To install the Hypertec Token Ring adapter in Windows 95 operating system:

1. Turn OFF the computer and insert the Token Ring adapter card into the computer's PCMCIA slot.
2. The Windows 95 software automatically detects the adapter and displays the New Hardware Found dialog box. If the software fails to detect the adapter, check that PCMCIA support is enabled in the Windows 95 system. Enable if necessary and reboot the computer.
3. Select the Driver from disk provided by hardware manufacturer option.
4. Type A:\WIN95 and select OK.
5. If a network has not yet been installed, the Windows 95 system will now install the Windows 95 network.

*Installation is now complete.*

Note: We recommend that you read the latest Microsoft information regarding PCMCIA. This information is provided with your Windows 95 operating system.

7. To setup the software, select Configure.
8. From the Configure menu, select LAN adapters and Protocols.
9. From the menu, select Configure.
10. Select Other Adapters.
11. Insert the Hypertec Token Ring PCMCIA software diskette into the diskette drive and type A:\IBMCOM.OS2. Press Enter.
12. From the list of adapters, select the Hypertec PCMCIA Token Ring adapter. Press Add.
13. Add the necessary protocols suited for your network, and select OK.
14. Select Close. Then, select Exit to complete installation. The config.sys file is modified.
15. Go to a Shell and edit the config.sys file to include the following line before the line which includes the sptnds.os2 file name.
16. Device=C:\IBMCOM\MACS\SPTDRV.OS2
17. Restart the computer for the changes to take effect.

*Installation is now complete.*

## **OPERATION**

Once the Token Ring PC Adapter card and its drivers have been properly installed, it operates unattended. This section describes the adapter test and configuration procedures.

### Testing and Configuring the Adapter

The Hypertec Wizard includes advanced adapter self-testing and configuration utilities. These utilities are designed to require minimal user intervention.

The configuration and self-testing is performed automatically during Token Ring installation, as described in the 'Installation Procedures' section. Under normal operating conditions, there is no need to re-run the test and configuration programs.

If, however, you wish to run these programs (after the first installation), or if you wish to perform a custom install, type the following at the DOS prompt:

```
C:\SPT\WIZARD
```

where C:\SPT is the location of the Token Ring adapter files.

The Configuration and Testing screen appears. The menus in this screen contain options for performing the following operations:

## Help

Access help information.

### Viewing Configuration Parameters

To view system configuration parameters, select System Config from the View menu. The configuration information is grouped into three categories. To view specific information, click on the PCMCIA, System or Network button.

### Modifying Configuration Parameters

To modify PCMCIA configuration parameters, select Configure PCMCIA from the Configure menu. The same Hardware Setup screen which appears during the installation process appears. Follow the instructions in the 'Hardware Setup Parameters' section to modify these parameters.

### Modifying the Network Speed

Token Ring networks operate at a speed of either 16 Mbps or 4 Mbps. To modify the Network Speed of your SPT adapter, select Network speed from the Configure menu. The same Network Speed screen which appears during the installation process appears. Follow the instructions in the 'Setting the Network Speed' section to modify this parameter.

### Testing the Adapter

The adapter testing utility automatically performs the following tests:

- Configuration Test

- PCMCIA Tuples Test

- Token Ring Basic Test

If a test fails, the computer stops running all other tests and displays details about the failure.

Under normal operating conditions, there is no need to run the test program. The tests should be run if you encounter problems during or after the installation of the Token Ring PCMCIA card adapter drivers. The program has been designed to detect conflicts originating from either the Token Ring PCMCIA Card, or the host computer.

To test the adapter functions of the Token Ring PCMCIA card, select Start Testing from the Test menu.

The same Test screen which appears during the installation process appears. Follow the instructions in the 'Running Tests' section, for displaying the test results.

Note: If you attempt to run tests when a network driver is loaded, an error message appears and the tests will not run.

*Explanation*

Possible problem in the card configuration.

*Recommended Actions*

Check that the PCMCIA Adapter card is inserted into the PCMCIA slot.

If a memory manager is loaded, make sure it excludes the memory range used by the Token Ring PCMCIA Card.

If the SOCKET keyword is present in the command line of the support driver (SPTDRV) in the config.sys file, then check that it points to the correct slot or remove the keyword.

Try to load the driver when no memory manager is present.

Try setting another memory range.

Host computer PCMCIA controller not recognised

*Explanation*

The driver could not define the host PCMCIA controller.

*Recommended Actions*

Check the computer setup to be sure that the PCMCIA controller has been enabled or use Card and Socket Services.

No PCMCIA card is inserted

*Explanation*

There is no Token Ring card in the computer's PCMCIA slot.

*Recommended Action*

Insert the Hypertec Token Ring PCMCIA Adapter card. If the SOCKET keyword is present in the command line of the support driver (SPTDRV) in the config.sys file, then check that it points to the correct slot or remove the keyword.

Installed card services has no available IRQ

*Explanation*

Installed card services software cannot find enough computer resources.

*Recommended Actions*

Run the card services configuration software to find more resources.

Remove any other PCMCIA card inserted into the computer.

#### *Explanation*

As above

#### *Recommended Actions*

As above

#### Network Driver Troubleshooting

When an error message is received from one of the Network Operating System (NOS) drivers, first check the following:

The SPTDRV driver is loaded in the config.sys before the Network Operating System (NOS) driver.

The Token Ring PCMCIA card is properly inserted into the slot and that all the cables are connected properly.

The Token Ring PCMCIA card is configured to work at the same network speed (4 Mbps or 16 Mbps) as all the other nodes on the network.

Check for a possible MAU problem.

Check for I/O port conflict with other cards.

Check that the keywords used to change default values were entered properly.

If none of the above explanations are applicable, refer to the relevant section below.

#### NDIS Troubleshooting

When an error message is received from the NDIS driver, first check the possible explanations above. Then, check the following:

The protocol manager "/T" (PROTMAN) is loaded in the config.sys before the driver.

The protocol manager parameter specifies the correct directory which includes the protocol.ini file.

The protocol.ini file includes an entry for the driver.

The driver entry uses the following keyword:

"DRIVERNAME=SPTNDS\$"

#### ODI Troubleshooting

When an error message is received from the ODI driver, first check the possible explanations mentioned above. Then, check the following:

The LSL is loaded before the driver.

The LSL "/C" parameter (if used), specifies the correct directory with the net.cfg file.

The net.cfg file has an entry for the driver.

The entry for the driver uses the keyword:

"LINK DRIVER SPTODI"

#### LAN Support Troubleshooting

adapter in the slot ready for you to use next time.

To remove the STP connection from the card, gently squeeze the plastic clips located on the side of the connector and separate it from the card.

Never disconnect the HyperNet PC Card by pulling on the cable.

If at any time during installation you experience difficulties, please contact Hypertec Technical Support on +44 1488 686844 (01488 686844 in the UK).

Weight:

2.1 oz, 62 gr. (including STP connector)

PCMCIA Card Size:

Length - 3.37"(85 mm)

Width - 2.13"(54 mm)

Thickness - 0.197"(5 mm)

Power Consumption:

160mA (active), 40mA (sleep)

Operating Temperature:

0°- 50°C

Operating Humidity:

0% - 90% non-condensing

Certifications:

FCC Part 15, Subpart B class A

CE

Token Ring Protocols:

IEEE 802.2 and 802.5

Data Transfer Rates:

16M or 4Mbits/sec

Software Included:

ODI workstation drivers (DOS & OS/2) for Novell NetWare, NetWare Lite and Novell DOS 7

NDIS 2.0.1 (DOS & OS/2) drivers for Microsoft LAN Manager, Windows for Workgroups, Artisoft LANtastic, Banyan Vines and others

NDIS 3 for Windows 95

Drivers for IBM PC Network Program, IBM OS/2 Extended Services and IBM LAN Server

Wizard utility for installation, self-test and diagnostics

PCMCIA support driver - SPTDRV





or non-Hypertec modification of the product.

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