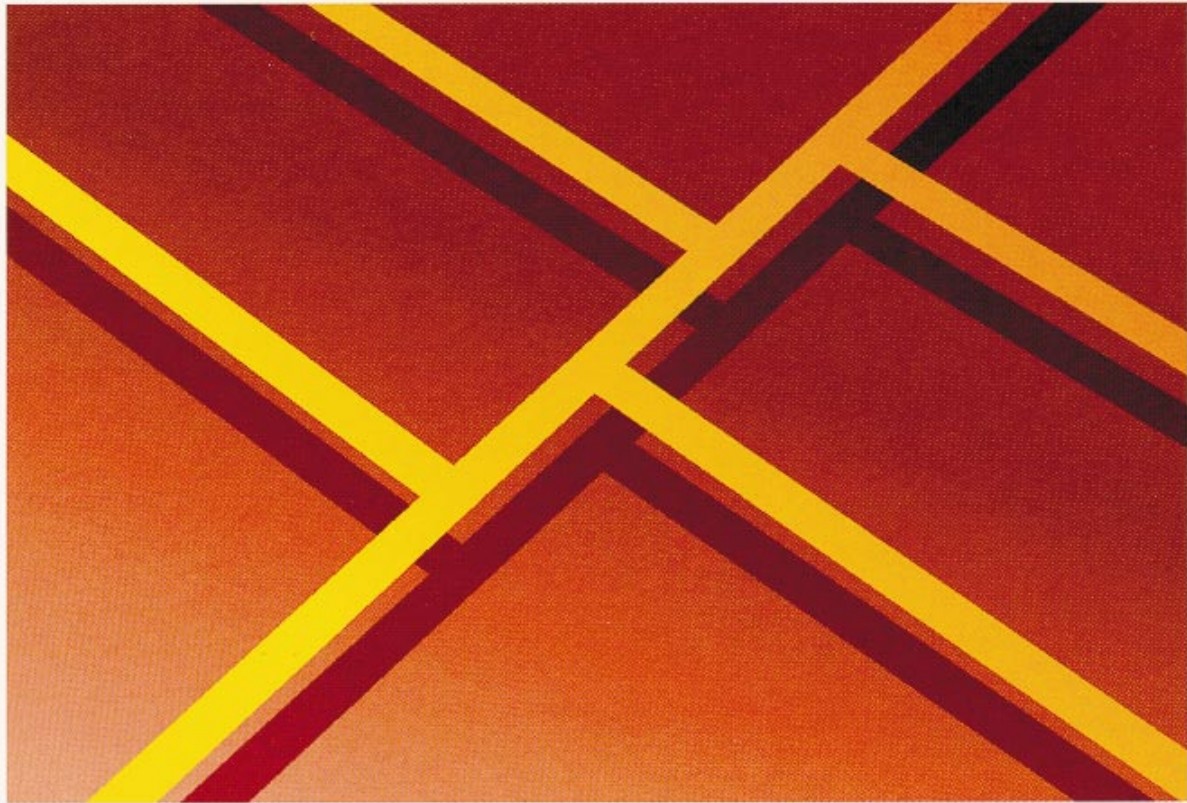


ETHERNET

OC-2920/1.0



Ethernet MCA 10/100 Adapter

Guide to Operations

Ethernet MCA 10/100 Adapter

Guide to Operations

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- 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/television technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifications

If the device is changed or modified without the express approval of Olicom A/S the user may void his or her authority to operate the equipment.

Declaration of Conformity

We Olicom A/S

Nybrovej 114

DK-2800 Lyngby

Denmark

declare under our sole responsibility that the product

Ethernet MCA 10/100 Adapter (OC-2335)

to which this declaration relates, is in conformity with the following standards or other normative documents:

EN 50082-1

EN 55022

EN 60825-1

EN 60950

incl. amendments following the provisions of the 73/23/EEC and 89/336/EEC directives.



CLASS 1 LASER PRODUCT

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About this manual

Welcome to this manual and congratulations on selecting the Olicom Ethernet MCA 10/100 Adapter.

This Guide to Operations is directed towards users without prior knowledge of network adapter installation, and it provides the information required to perform a standard installation of the Ethernet MCA 10/100 Adapter.

This guide contains 11 chapters and four appendices. Reading the sections that deal with the environment in which your adapter will be used will ease installation of the hardware and software described in this guide.

- Chapter 1** is a general introduction to this manual.
- Chapter 2** provides an installation overview.
- Chapter 3** describes the physical installation (hardware).
- Chapter 4** describes Windows 95 Express Installation.
- Chapter 5** describes NetWare Client Express Installation.
- Chapter 6** describes the Setup program.
- Chapter 7** provides guidelines for installation of the adapter driver software in different network environments.
- Chapter 8** describes the utility programs.
- Chapter 9** introduces the Diagnostics program.
- Chapter 10** provides troubleshooting hints.
- Chapter 11** tells how to contact Olicom Technical Support.
- Appendix A** lists the system requirements.
- Appendix B** contains error messages, return codes and suggested actions to recover from an error condition.
- Appendix C** lists the used abbreviations.
- Appendix D** lists the technical specifications and certifications.

Expert users and end-users who require detailed technical information can obtain this from the Olicom online documentation. See page 2 for details.



1. Introduction

The Ethernet MCA 10/100 Adapter (OC-2335) is designed for computers complying to the Micro Channel Architecture specification. The OC-2335 adapter features easy installation, high frame transfer rates and low latency. The adapter has a UTP RJ-45 connector for 100Base-TX and 10Base-T cabling and includes software-detectable network speed, 10 or 100 Mbps.

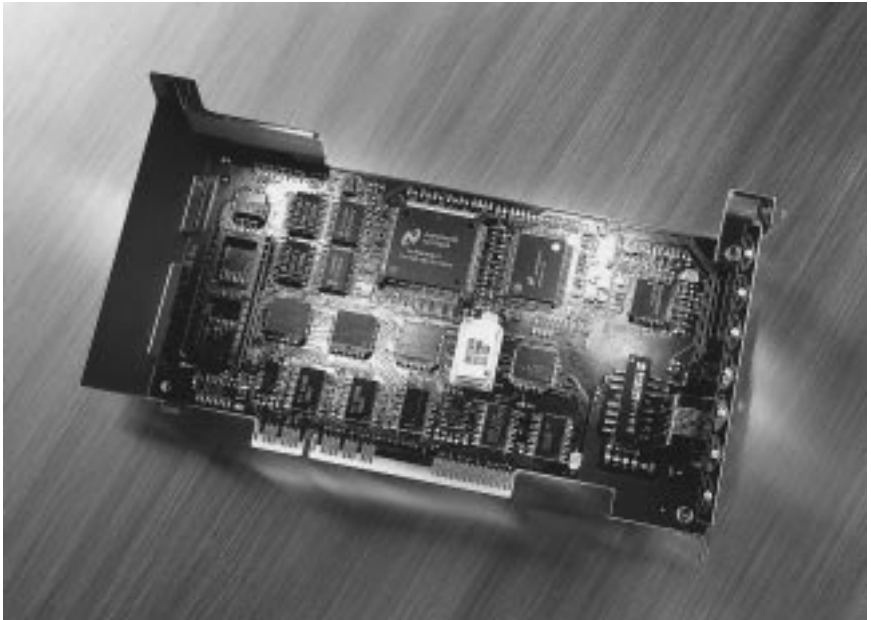


Figure 1. Ethernet MCA 10/100 Adapter

All major Network Operating Systems are supported, and for standard operating modes, no configuration input is required from the user.

Disk Backup

Before performing any task, make copies of all the Olicom disks and store the originals in a safe place.

Use a diskcopy command, for example “DISKCOPY A: A:”.

Package Contents

The Olicom Ethernet MCA 10/100 Adapter package contains:

- One Ethernet MCA 10/100 Adapter (OC-2335) as shown in figure 1.
- Four disks:
 - Setup Disk** containing installation, utilities and documentation
 - NetWare Client Disk** containing Novell NetWare Client for DOS and MS Windows 3.x
 - Driver Disk** containing network drivers
 - Diagnostics Disk** containing adapter diagnostics
- This Guide to Operations, OC-2920
- One warranty card



Online Documentation

This Guide to Operations contains all the information required for a standard adapter installation with default settings. However, if the installation is more complex or more information is needed, Olicom's online documentation provides access to extensive information that complements what is given in this manual. The online documentation is available under both DOS and Windows.

Insert the Setup Disk in drive "A" and run A:SETUP from DOS or Windows and select "Help" or "Installation Overview".

The Setup program is described in detail in chapter 6, *The Setup Program*.

Troubleshooting and getting Help

If the Olicom Ethernet MCA 10/100 Adapter should perform unexpectedly, see chapter 10, *Troubleshooting*, chapter 9, *Diagnostics* or the Olicom online documentation for guidelines. If you cannot solve the problem, see chapter 11, *Contacting Technical Support* for technical assistance.

Late-breaking News

Additional information not available at the time of print is contained in the online documentation: *Late-breaking News*.

Notational Conventions

“CAPITAL LETTERS” (Helvetica) indicates user input. You may use upper or lower case letters when entering names and commands.

“ESC” (Helvetica narrow) indicates key entries, e.g. CTRL and F1.

Italics refer to another section, chapter or document.

“h” following a number indicates hexadecimal notation, for example 02AFh.

“ [] ” (square brackets) indicate an optional entry.

“ < > ” (angle brackets) indicate text to be substituted.

“ Courier typeface ” indicates screen display.

“ □ ” indicates the end of a chapter.



2. Installation Overview

1. Install the adapter in the computer. Chapter 3, *Hardware Installation*, explains this in detail.
2. The system automatically assigns configuration parameters. The MCA parameters are determined by the machine-dependent setup program.
3. Install the adapter driver(s).
If you are using Windows 95, see *Windows 95 Express Installation* on page 11.
If you are using Novell NetWare, see the *NetWare Client Express Installation for DOS and Windows 3.1x* on page 13.
Most major network operating systems (NOSs) or operating systems (OSs) provide installation support for Olicom cards. However, if no procedures are available - or manual driver installation is required - use chapter 7, *Software Installation* and/or the Olicom online documentation as a guideline.

Installation of the Olicom Ethernet MCA 10/100 Adapter is now completed.



3. Hardware Installation

Overview

This section describes how to install the Ethernet MCA 10/100 Adapter in one of the expansion slots in your computer. See the computer documentation for additional information on installing expansion cards. The term “computer” is used as a general term to include PCs, computers and computer systems.

- **Important:** Static electricity can be destructive to sensitive components on the adapter. Discharge yourself by touching a grounded unit before removing the adapter from the anti-static packing bag.

Installation Requirements

- A medium-sized screwdriver
- The Operations Guide for your computer.

Adapter Installation

1. Switch all computer system components *off* and disconnect all main power supply cables.
2. Place the peripheral units: keyboard, monitor, etc. away from the PC, and position the PC itself to give yourself easy access to the back panel.
3. Remove the PC top cover to expose the inside of the PC. See figure 2 for Micro Channel Architecture (MCA-type) computers.
4. The MCA 10/100 Adapter fits a 16- or 32-bit MCA slot.
5. Loosen the thumbscrew that holds the metal plate on the back panel corresponding to the chosen slot.
6. If your computer has an additional plastic cover on the back panel, pry it out carefully with a screwdriver.

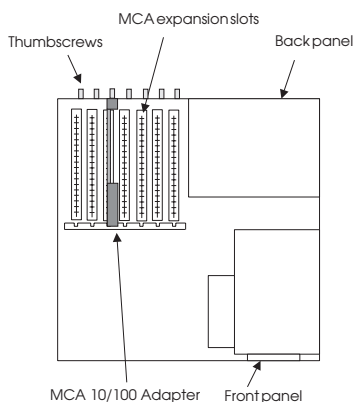


Figure 2. MCA PC Top View

7. Tilt the adapter to let the interface connector slip through the opening in the back panel, and then press the edge connector firmly into the chosen expansion slot. (Make sure that the end of the Ethernet MCA 10/100 Adapter fits into the card guide at the front panel).
8. Secure the card with the thumbscrew from the previously-removed metal bracket and replace the PC top cover.

Connecting the Adapter Cable

1. Insert the modular telephone jack in the RJ-45 connector. The jack is secured and correctly inserted when you hear a click.
For 10 Mbps operation, a category 3, 4 or 5 cable is required.
For 100 Mbps operation, a category 5 cable is required.

➔ **Note:** Make absolutely sure that you connect the adapter cable to the adapter you have just installed. Connecting the cable to an expansion card other than the Ethernet MCA 10/100 Adapter could result in serious damage to the expansion card and/or the Ethernet Network.

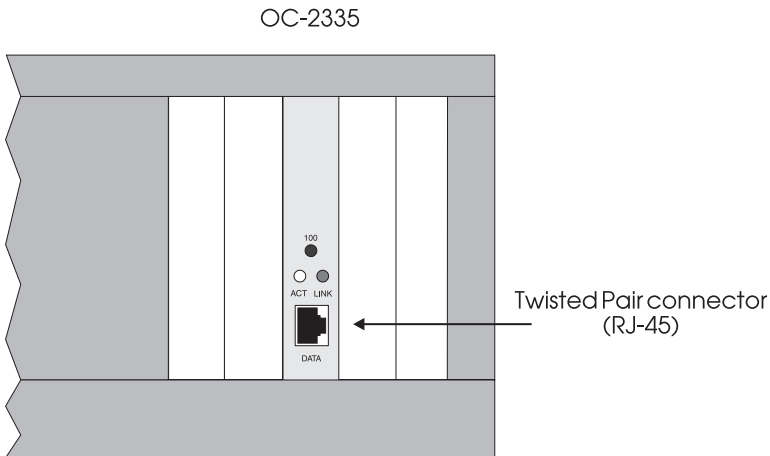


Figure 3. Back Panel

2. Connect the other end of the cable to a wall outlet or a transceiver.
3. Make sure that the PC is turned *off* then re-connect the main power supply cable.
4. Switch power *on*.

MCA Adapter Configuration

1. Turn power *off* and insert disk in drive “A” the backup copy of the REFERENCE/USER diskette that came with your computer. If you have not yet made a backup copy of the REFERENCE/USER diskette, do so by selecting the “BACKUP THE REFERENCE DISKETTE/COPY USER DISKETTE” function from the MAIN MENU on the original diskette.
2. Turn power *on* to start the PC from the diskette and wait for the MAIN MENU to appear.

► **Note:** Do not at this stage choose to run an automatic configuration as you are prompted to do!

3. Select the “COPY OPTION DISKETTE” function and follow the instructions.
4. When prompted for an option diskette, insert the Driver diskette that came with the Ethernet MCA 10/100 Adapter.
When the adapter description file has been copied onto your REFERENCE/USER diskette, you are returned to the MAIN MENU.
5. Select the “SET CONFIGURATION” function to invoke the configuration menu.
6. Select “RUN AUTOMATIC CONFIGURATION”.
The default settings are: I/O address location: 200h, interrupt level: IRQ2, and RPL: RPL disabled.
Select the “VIEW CONFIGURATION” function from the SET CONFIGURATION menu if you want to know the exact settings.

► **Note:** If you are installing to NetWare 3.12, NetWare 4.x, or Windows 95, select the “VIEW CONFIGURATION” function from the SET CONFIGURATION menu. Make a note of the slot number, as you will need it later.

You may now proceed to chapter 7 to install the driver software.



4. Windows 95 Express Installation

Windows 95 will normally install new devices with little or no user intervention. This is however not the case for MCA adapters, as Windows 95 cannot autodetect these adapters. Follow the steps below to install the Ethernet MCA 10/100 Adapter.

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot and connect the cable between the adapter and the network as described in chapter 3.
2. Start Windows 95.
3. Select “Settings” and “Control Panel” from the Windows 95 “Start Menu”.
4. From the “Control Panel”, select “Network”.
5. Press “Add” and select “Add Adapter”.
6. From the Select Network Adapters window, press “Have Disk”, insert the Olicom Driver disk, and select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)”.
7. Press “OK” to complete the installation.
8. Restart Windows 95 for the changes to take effect.



5. NetWare Client Express Installation for DOS and Windows 3.1x

NetWare Client Express Install is for DOS and Windows 3.x users who want to configure their computer as a Novell NetWare Client (DOS ODI workstation) using Novell's Virtual Loadable Module.

Express Install installs the necessary drivers and programs to attach your PC to a Novell NetWare network and also lets you install the utilities provided with the Ethernet MCA 10/100 Adapter.

The following disks are required:

- The Olicom Setup Disk
 - The Olicom NetWare Client Disk
1. Make sure the adapter is inserted and connected as described in chapter 3.
 2. Insert the Olicom Setup Disk, select "Run..." and enter:

A:\SETUP

and press Enter (or click on "OK").

Alternatively, enter "A:\INSTALL" from the DOS prompt.

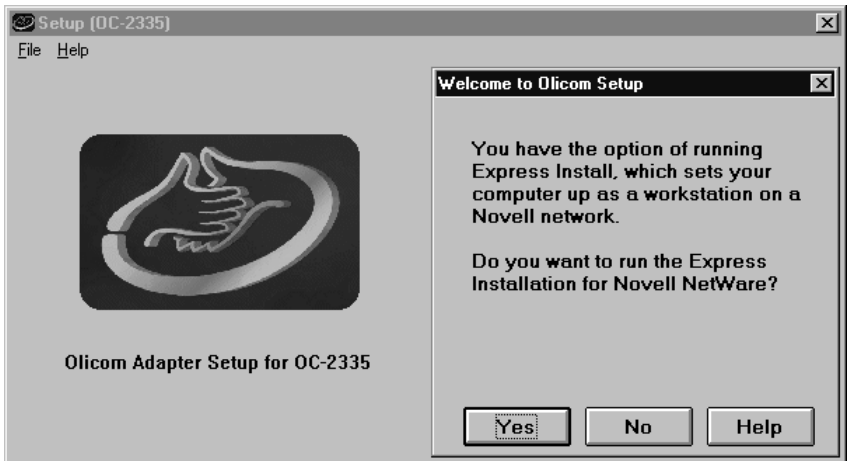


Figure 4. Opening Screen - NetWare Client Express Install

3. Select the "Yes" button in the "Welcome to Olicom Setup" to run the Express Installation (use the mouse or press Enter).

4. Read the NetWare Client license agreement and select “Yes”, if the terms are acceptable to you. If you do not agree to license terms, you may return the product for a full refund.
5. You are prompted for the destination directory for the Novell files. If required, change the default directory (C:\NWCLIENT). Make sure that the Windows directory is correctly specified.
If you do not want to install the Windows support files, click the box to remove the check mark.
Select “OK” to continue.
6. The files are then copied from the disks to the hard disk.
Insert the appropriate disks when prompted to do so.
7. When all the files have been copied to the hard disk, changes are made to CONFIG.SYS and AUTOEXEC.BAT (and also to the SYSTEM.INI and WIN.INI files if you have accepted Windows support).
When asked whether or not you want to automatically login to the NetWare server each time you re-boot the PC, respond “Yes” to add the necessary commands to perform a login on each reboot, respond “No” to load only the drivers required to access the NetWare server.
8. After installing the Novell files, you may install the utilities that come with the Ethernet MCA 10/100 Adapter.
9. Re-boot the computer to complete the installation.

The Ethernet MCA 10/100 Adapter is now installed and operational.



6. The Setup Program

The Setup program on the Olicom Setup Disk can be used to install the utilities that come with the adapter. The Setup program also gives access to Olicom's extensive on-line documentation containing detailed information on how to install the software drivers required in various operating environments. The Setup program can be run both under DOS and under Windows.

Running the Setup Program

Windows 95 and Windows NT

1. Insert the Olicom Setup Disk and run

```
A:\SETUP
```



Figure 5. Setup Start Screen - Windows 95 and Windows NT

2. Select “Windows 95 driver upgrade” if you want to update the network driver used in Windows 95, see also *Microsoft Windows 95* on page 18.

► **Note:** This button is not available if run under Windows NT.

3. Select “Help” or “Installation Overview” to access the on-line documentation, select “Utility Installation” to install the utilities that come with the Ethernet MCA 10/100 Adapter.

DOS, Windows 3.x

1. From Windows 3.x

Insert the Olicom Setup Disk and run

A:\SETUP

From DOS

Insert the Olicom Setup Disk and type

A:\INSTALL

- When prompted for “Express Installation”, select “No” to display the Setup Program options shown in figure 6.



Figure 6. Setup Start Screen - Windows 3.x and DOS

- Select “Installation Overview” or “Help” to access the on-line documentation or select “Utility Installation” to install the utilities that came with the Ethernet MCA 10/100 Adapter.

Press the buttons on the screen with a mouse or use the Alt key with the underlined “hot keys” to activate a button.



7. Software Installation

Why Adapter Drivers?

The adapter driver software creates an interface between the adapter and the client software loaded on the workstation which is required to operate in the Network Operating System environment.

All major network operating system environments provide facilities for the installation of adapter driver software and Olicom drivers are often pre-defined in the relevant configuration utilities. If the facility to install Olicom drivers from the Network Operating System is available, Olicom recommends that this approach is taken. However, if no such procedures are available, or manual installation is preferred, use the following sections as guidelines for the adapter driver installation. Extensive installation procedures are available in the Olicom online documentation on the Olicom Setup Disk.

Supported Environments and Drivers

Environment	Driver	Page
MS Windows 95	OCE3XM.SYS	18
MS Windows NT	OCE3XM.SYS	20
MS Windows for Workgroups 3.11	OCE3XND2.DOS	25
	OCE3XODI.COM	25
MS Network Client 3.0	OCE3XND2.DOS	28
NetWare DOS ODI Workstations	OCE3XODI.COM	29
NetWare Client 32 for Windows 95	OCE3XODI.LAN	32
NetWare Client 32 for Windows 3.1x	OCE3XODI.LAN	34
NetWare Client 32 for DOS	OCE3XODI.LAN	35
NetWare OS/2 Requester	OCE3XODI.SYS	35
NetWare 4.x Server	OCE3XODI.LAN	37
NetWare 3.12 Server	OCE3XODI.LAN	38
IBM LAN Support Program	OCE3XND2.DOS	40
IBM DOS LAN Services	OCE3XND2.DOS	40
IBM NTS/2 and IBM E.S.	OCE3XND2.OS2	43
IBM LAPS - LAN Server 3.0	OCE3XND2.OS2	43
IBM MPTS - LAN Server 4.0/5.0, OS/2 WARP	OCE3XND2.OS2	44

Microsoft Windows 95

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot and connect the cable between the adapter and the network as described in chapter 3.
2. Start Windows 95.
3. Select “Settings” and “Control Panel” from the Windows 95 “Start Menu”.
4. From the “Control Panel”, select “Network”.
5. Press “Add” and select “Add Adapter”.
6. From the Select Network Adapters window, press “Have Disk”, insert the Olicom Driver disk, and select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)”.
7. Press “OK” to complete the installation.
8. Restart Windows 95 for the changes to take effect.

► **Note:** NetWare Client 32 for Windows 95 is described on page page 32.

Multiple Adapter Configuration - Windows 95

If installing more than one Ethernet MCA 10/100 Adapter in the same computer, the network driver must be installed once for each network adapter. The first driver will load on the first adapter, the second driver on the second adapter, and so forth.

Adapter Parameters

To configure the network adapter, open “Network” in the “Control Panel”, select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and click the “Properties” button. Click the “Advanced” tab to set the adapter parameters. The default parameters will work correctly for most configurations. Use defaults if you do not know what the parameters do.

LAN Speed (Auto, 10 Mbps, 100 Mbps)

This parameter can be used to force the Ethernet MCA 10/100 Adapter to use a specified data rate of either 10 Mbps or 100 Mbps. If “Auto” is selected, the Ethernet MCA 10/100 Adapter will auto-negotiate the speed and use the highest possible value.

Duplex (Auto, Half duplex, Full duplex)

This parameter can be used to force the Ethernet MCA 10/100 Adapter into a specified duplex mode, that is full or half duplex. If “Auto” is selected, the Ethernet MCA 10/100 Adapter will auto-negotiate the duplex mode and use the best possible value. In some hubs and switches the auto-negotiation of duplex operation is unresolved. In such cases half duplex operation will be used. If full duplex operation is required, use “Full Duplex” to force this mode.

Network address

Use the network address field if you do not want to use the adapter's burned-in Ethernet address.

The address entered may be preceded by an address format identifier (I or T), I is for IEEE standard address format also known as canonical or LSB format. T is for IBM Token-Ring Network format, also known as non-canonical format or MSB format. The IEEE standard notation will be used if this identifier is left out.

The value must be a locally administered address. If the IEEE standard notation is used, the address must be in the following format:

IX*XXXXXXXXXX or just X*XXXXXXXXXX, where X is any hexadecimal digit and * is either 2, 6, A, or E.

Example: 060012345678

If Token-Ring Network format is used, the address must be in the following format:

T*XXXXXXXXXX,

where X is any hexadecimal digit and * is either 4, 5, 6, or 7.

Example: T400012345678

NDIS 3.0 Error Messages

NDIS 3.0 error messages and suggested actions are described in appendix B.

Microsoft Windows NT

The adapter driver installation procedure for Microsoft Windows NT Workstation is identical to that of Microsoft Windows NT Server. In the following, both will be referred to as Windows NT. The installation procedure is however different for versions 3.5x and 4.0 of Windows NT. Before you begin the installation process, review the “Configuring the Network” section in the Windows NT System Guide.

The NDIS 3.0 Miniport driver installation procedure described below will copy all necessary set-up files to the Windows NT “System32” directory and the driver to the “System32\Drivers” directory. In addition, several changes will be made to the system registry. Do not attempt to edit the registry manually; all driver parameters can be set from the network section of the control panel.

Installation Procedure

The installation procedure allows installation either during the initial Windows NT installation or after Windows NT has been successfully installed on the system. If you are running Windows NT 4.0, proceed to the Windows NT 4.0 section. If you are running Windows NT 3.5x, proceed to the Windows NT 3.5x section.

Windows NT 4.0

Adapter Installation during Windows NT Installation

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot as described in chapter 3.
2. Follow the instructions in the Windows NT System Guide to begin the Windows NT 4.0 installation process.
3. If you have chosen custom setup, do not start the adapter search in the “Network Setup Wizard” dialog box. Choose instead “Select from list”.
4. Click the “Have Disk...” button and enter the full path to the Olicom setup files. If you are installing from the Olicom Driver Disk, enter:
A:\
5. Select the correct adapter type and press the “OK” button.
6. Click the “Next” button when all adapters have been added.
7. Follow the Network Setup Wizard to choose appropriate Protocols and Services to continue the installation. You will be prompted twice for the path to your NT installation files. First enter the path to the NT installation files (for example the Windows NT CD-ROM) and secondly enter the path to the Olicom setup files (same path as entered under step 4).
8. Follow the Network Setup Wizard to finish the installation.

Adapter Installation after Windows NT Installation

If you are installing a network adapter after Windows NT has been successfully installed on your system, you must be logged on with administrative rights. This is necessary in order to be able to add, configure and remove network adapters in Windows NT.

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot as described in chapter 3.
2. From the Start menu, select the “Settings”, “Control Panel” and double-click the Network icon. Choose the “Adapters” tab and click the “Add...” button.
3. Click the “Have Disk...” button, and enter the full path to the Olicom setup files. If you are installing from the Olicom Driver Disk, enter:

A:\

4. Select the correct adapter type and press the “OK” button.
5. Click the “Close” button in the Network dialog box when all adapters have been added.
6. The settings will not take effect, until the system is restarted. System restart can be initiated by selecting the “Yes” option in the dialog box shown when you exit the Network Setup Panel.



Note: If the system is already using an adapter of the same type, the driver has to be updated manually. See the next steps to accomplish this.

1. Select “Add/Remove Programs” from the Control Panel.
2. Select “Windows NT Setup” tab.
3. Click the “Have Disk ...” button and enter the full path to the Olicom setup files. When installing from the Olicom Setup Disk, enter:

A:\

4. Select “Update Olicom Ethernet miniport driver” and restart the system for the changes to be effective.

Windows NT 3.5x

Adapter Installation during Windows NT Installation

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot as described in chapter 3.
2. Follow the instructions in the Windows NT System Guide to begin Windows NT installation.
3. If you have selected custom set-up, select “Do Not Detect” when the “Network Adapter Card Detection” window displays.
4. When the message “Setup did not detect a network card” displays, select “Continue” to go to the adapter card setup phase.
5. Continue with step 5 in the “Adapter Installation after Windows NT Installation” section below.

Adapter Installation after Windows NT Installation

If you are installing a network adapter after Windows NT has been successfully installed on the system, you must be logged on with administrative rights to be able to add, configure and remove adapters.

1. Install the Ethernet MCA 10/100 Adapter in a free expansion slot as described in chapter 3.
2. Select the Control Panel in the Main window.
3. Select the Network icon.
4. In the Network Settings panel, select the “Add adapter” button.
5. In the list of Network Adapter Cards, select “<Other> Requires disk from manufacturer” and press the “Continue” button.
6. Enter the full path to the setup files. When installing from the Olicom Driver Disk enter:

A:\
7. Select the correct adapter type and press the “OK” button. The setup program now copies installation files to the hard disk.
8. Review the binding settings by selecting the “Bindings” button. Press “OK” to return from the Network Bindings window.
9. Select the “OK” button in the Network control panel when all adapters have been added.

10. The settings will not take effect until the system is restarted. System restart can be initiated by selecting the “Restart now” option in the dialog box shown when you exit the Network Control Panel.

► **Note:** If the system is already using an adapter of the same type, the driver has to be updated manually. See the next steps to accomplish this.

1. Insert the Olicom Driver Disk and copy the file OCE3XM.SYS from the disk to the Windows NT directory “\system32\drivers”.
2. Reboot the system for the changes to be effective.

Adapter Parameters

When configuring an adapter, the following parameters can be modified.

Speed (Auto, 10 Mbps, 100 Mbps)

This parameter can be used to force the Ethernet MCA 10/100 Adapter to use a specified data rate of either 10 Mbps or 100 Mbps. If “Auto” is selected, the Ethernet MCA 10/100 Adapter will auto-negotiate the speed and use the highest possible value.

Duplex (Auto, Half, Full)

This parameter can be used to force the Ethernet MCA 10/100 Adapter into a specified duplex mode, that is full or half duplex. If “Auto” is selected, the Ethernet MCA 10/100 Adapter will auto-negotiate the duplex mode and use the best possible value. In some hubs and switches the auto-negotiation of duplex operation is unresolved. In such cases half duplex operation will be used. If full duplex operation is required, use “Full” to force this mode.

Network Address

Use the network address field if you do not want to use the adapter's burned-in Ethernet address.

The address entered may be preceded by an address format identifier (I or T), I is for IEEE standard address format also known as canonical or LSB format. T is for IBM Token-Ring Network format, also known as non-canonical format or MSB format. The IEEE standard notation will be used if this identifier is left out.

The value must be a locally administered address. If the IEEE standard notation is used, the address must be in the following format:

IX*XXXXXXXXXX or just X*XXXXXXXXXX, where X is any hexadecimal digit and * is either 2, 6, A, or E.

Example: 060012345678

If Token-Ring Network format is used, the address must be in the following format:

T*XXXXXXXXXXXX,

where X is any hexadecimal digit and * is either 4, 5, 6, or 7.

Example: T400012345678

NDIS 3.0 Error Messages

NDIS 3.0 error messages and suggested actions are described in appendix B.

Microsoft Windows for Workgroups 3.11

With Windows for Workgroups 3.11 the following configurations can be used:

- NDIS 2.0 driver
- ODI driver

If access to a Novell server is required, see “*Microsoft WfW 3.11 ODI Installation*” in the Olicom online documentation.

Install NDIS Driver

The installation is done by adding the driver from the Olicom Driver Disk.

1. Select the “Network Setup” icon from the “Network” window.
2. In the “Network Setup” panel click the “Networks...” button.
3. Select “Install Microsoft Windows Network” and make sure the “No additional network” radio button is selected.
4. Click the “OK” button or press Enter.
5. Click the “Drivers...” button.
6. If you are replacing a previous LAN adapter, select the “Remove” button to delete that adapter.
7. In the “Network Drivers” panel click the “Add Adapter...” button.
8. Highlight the “Unlisted or Updated Network Adapter” choice and click the “OK” button.
9. The setup program prompts for a vendor-provided network driver disk. Insert the Olicom Driver Disk, change the path specified to “A:” and click “OK”. If the Olicom Driver Disk is located in another directory or drive, enter the correct path or use the “Browse” function.
10. In the “Unlisted or Updated Network Adapter” panel, select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and click “OK”.
11. If you need to change any driver parameters, highlight “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and click the “Setup...” button in the “Network Drivers” panel.
12. If you want to change any of the parameters for the NDIS driver, click the “Advanced...” button.
 - a) Highlight the parameter you wish to change and enter a value in the box below the parameters or select the “Not present” button if the parameter should be omitted from PROTOCOL.INI.
 - b) Click the “Set” button when the parameter is correct.
 - c) Click the “OK” button when all parameters have been set correctly.

13. Add additional network drivers and/or protocols in the “Network Drivers” panel.
14. Click the “Close” button when done.
15. To share files and/or printers, change the settings in the “Sharing” panel by clicking the “Sharing...” button. Click “OK” to return from the “Sharing” panel.
16. Click the “OK” button when done.
17. If the network is being installed for the first time, enter a user name, workgroup name and a computer name. Make sure the computer name is unique throughout the network. Click “OK” when done.
18. Setup may require some additional files from the Windows for Workgroups 3.11 distribution disks. Insert these when prompted.
19. Windows for Workgroups 3.11 automatically changes the CONFIG.SYS, AUTOEXEC.BAT, SYSTEM.INI and PROTOCOL.INI files if necessary. Click “OK” to confirm these changes.
20. Select “Restart Computer” to make the changes take effect. Remember to save any un-saved information before restarting the system.

Adapter Parameters

To view or change the adapter parameter settings for the Olicom driver, do the following:

1. Select the “Network Setup” icon from the Network Window.
2. Select the “Drivers...” button.
3. Highlight the adapter you wish to review.
4. Click the “Setup...” button.
5. Click the “Advanced...” button.
6. Highlight the adapter parameter you wish to review. The value is displayed in the box below the “Advanced Network Adapter Settings” box.
7. To change a setting, enter the new value in the “Value” field for the proper parameter.
8. Click the “Set” button to accept the setting.
9. When all parameters have been set correctly, click the “OK” button. Click the “OK” button in the “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” panel to return to the “Network Drivers” panel.
10. Click “Close” to exit the drivers panel.

11. Selecting “OK” in the “Network Setup” panel will create a new set of network files, that is, PROTOCOL.INI, SYSTEM.INI etc. Click “OK”. The changes will take effect when you re-start the computer.

The default parameters will work correctly for most configurations. Use defaults if you do not know what the parameters do.

SPEED (0, 10, 100)

This parameter can be used to specify auto-negotiation of speed (by default), or to force the adapter to use a specific data range of either 10 Mbps or 100 Mbps. If “0” is specified (or parameter is omitted), the adapter will auto-negotiate the speed and use the highest possible value.

DUPLEX (AUTO, HALF, FULL)

This parameter can be used to specify auto-negotiation of duplex mode (the default), or to force the adapter to use a specific duplex setting. If “AUTO” is specified (or parameter is omitted), the adapter will auto-negotiate the duplex mode and use the best possible value. In some hubs and switches the auto-negotiation of duplex mode is unresolved, and the driver defaults to half duplex operation. Use “FULL” to force full duplex operation.

IOBASE (OPTIONAL)

Indicates the current I/O address configuration of the network adapter. This setting must match the I/O base address setting for the adapter. This parameter is used to identify a specific adapter in a PC configuration with several Ethernet MCA 10/100 Adapters.

NETADDRESS

Use the Network Address field if you do not want to use the network adapter’s burned in Ethernet address. The value entered must be a locally administered address, that is of the format “X*XXXXXXXXXX” where “X” is any hexadecimal digit and “*” is either 2, 6, A or E. For example, “02123456789A” is a valid network address. If the Olicom network driver encounters an invalid network address, the invalid network address error message is posted.

Multiple Adapter Configuration (WfW 3.11)

If installing more than one Ethernet MCA 10/100 Adapter in the same computer, the network driver must be installed once for each network adapter.

Microsoft Network Client 3.0 for DOS

This section describes how to install the NDIS 2.0 MAC driver with Microsoft Network Client v. 3.0 for MS-DOS.

1. Run the Microsoft Network Client “SETUP” program either from the installation disk or from the \NET directory on your hard disk.
2. When you are prompted to select a network adapter, choose “Network adapter not shown on list below ...” if your Olicom adapter is not contained in the list.
3. Insert the Olicom Driver Disk (and change the path to “A:” if necessary).
4. Press Enter and select the Olicom adapter.
5. Follow the instructions from the Microsoft Network Client SETUP program to complete the installation.

For additional information about adapter configuration parameters, see *Configuring the NDIS 2.0 MAC Driver* in the Olicom online documentation.

Novell NetWare Workstations

If the Novell NetWare version provides installation support for Olicom adapters and drivers, use the native NOS installation utility. Otherwise, proceed with the relevant section in this chapter.

With Novell server operating systems up to version 3.11, Novell shipped the NETX client software. With versions 3.12 and 4.x, Novell ships the VLM client software. While both may be used, the VLM client is required if you want to take advantage of the new functionality in version 3.12 and 4.x servers.

NetWare DOS ODI Workstations

VLM Installation

For installation of the NetWare DOS/Windows 3.x VLM client, run the NOVELL install program. When the installation requests the driver diskette, insert the Olicom Driver Disk supplied with the adapter and select the OCE3XODI driver. The NET.CFG file is generated by the Novell install program.

The VLM (Virtual Loadable Module) client is loaded using the following sequence of commands:

LSL.COM	(Link support module, Novell supplied)
OCE3XODI.COM	(Ethernet ODI driver)
IPXODI.COM	(IPX/SPX Protocol module, Novell supplied)
VLM.EXE	(NetWare Requester, Novell supplied)

If you let the install program modify your CONFIG.SYS and AUTOEXEC.BAT files, these commands are automatically executed during boot.

NETX installation

This installation procedure requires the following software and documentation:

- Novell NetWare DOS ODI support programs
 - Olicom Driver Disk
1. Copy the Novell NetWare DOS ODI support programs to a disk as explained in the Novell documentation.
 2. Copy the OCE3XODI.COM driver to the same disk as the Novell NetWare DOS ODI support programs:

```
COPY A:\DOS\OCE3XODI.COM C:\<path>
```

3. Insert the following line in the file AUTOEXEC.BAT:

```
OCE3XODI
```

OCE3XODI must be loaded after LSL, but before any protocol stacks (for example, IPXODI).

Sample AUTOEXEC.BAT:

```
LSL                (Link support module, Novell supplied)
OCE3XODI           (Ethernet ODI driver)
IPXODI             (IPX/SPX Protocol module, Novell supplied)
NETX               (NetWare Requester, Novell supplied)
```

Other protocol stacks and requesters are possible. See the Novell NetWare documentation.

4. Edit the NET.CFG file, if desired, to configure the workstation. See the Novell documentation provided with the ODI Shell for general information about the NET.CFG file.

Sample NET.CFG:

```
# Start of NET.CFG
# Two adapters, with both SNAP and 802.2 support
# and with locally assigned node addresses:
```

```
Link driver OCE3XODI
  Port 300
  Speed 100
  Duplex Auto
  Node address 060011110002
  Frame Ethernet_802.2
  Frame Ethernet_SNAP
```

```
Link driver OCE3XODI
  Port 340
  Duplex Auto
  Node address 020011110001
  Frame Ethernet_802.2
  Frame Ethernet_SNAP
```

```
# End of NET.CFG
```

The line “Link Driver ...” must begin in the first column and the parameters that follow must be indented.

The following parameters may be set with the OCE3XODI driver:

PORT

The I/O base for the adapter.

In the majority of cases there is no need to specify this parameter as the driver will search for an adapter at all valid I/O bases.

However, if you have installed two or more adapters on the same machine, you must specify this parameter in every LINK DRIVER OCE3XODI entry in NET.CFG.

Possible values for the Ethernet MCA 10/100 Adapter are: 200, 240, 280, 2C0, 300, 340, 380, 3C0 (Hex).

SPEED (Auto, 10, 100)

This parameter can be used to force the Ethernet MCA 10/100 Adapter to use a specified data rate of either 10 Mbps or 100 Mbps. If “Auto” is selected (parameter omitted or zero) the Ethernet MCA 10/100 Adapter will auto-negotiate the speed and use the highest possible value.

DUPLEX (AUTO, HALF, FULL)

This parameter can be used to force the Ethernet MCA 10/100 Adapter into a specified duplex mode, that is full or half duplex. If “AUTO” is selected (parameter omitted or zero) the Ethernet MCA 10/100 Adapter will auto-negotiate the duplex mode and use the best possible value.

In some hubs and switches the auto-negotiation of duplex operation is unresolved. In such cases half duplex operation will be used. If full duplex operation is required, use “Full” to force this mode.

NODE

Enter this parameter only if you want to manually administer node addresses in your installation. If not entered, the on-board, globally-assigned address (Burned-in Address) is used.

If an address is entered, the 11th digit from the right must be 2, 6, A or E as in 02123456789A.

FRAME

The media frame type parameter determines the Ethernet packet header(s) that the driver will support.

Supported values for this parameter are:

Ethernet_802.2

Ethernet_802.3

Ethernet_II

Ethernet_SNAP

If the parameter is omitted, the driver selects Ethernet_802.2, which is the current default frame type for ODI drivers. Existing LANs may be using Ethernet_802.3.

More than one frame type may be enabled by repeating the parameter on separate lines.

NetWare Client 32 for Windows 95

This installation requires:

- Novell NetWare Client 32 for Windows 95 installation disks or CD-ROM
- Microsoft Windows 95 CD-ROM (or disks)
- Olicom Driver Disk

The installation consists of three steps:

1. Installing the NDIS 3.0 Miniport driver
2. Installing the NetWare Client 32 software
3. Converting the NDIS 3.0 Miniport driver to a Novell ODI LAN driver (if desired)

Installing the NDIS 3.0 Miniport Driver

If your NDIS 3.0 Miniport is already installed and running, proceed to Installing the NetWare Client 32 Software. Otherwise install the NDIS 3.0 Miniport driver as described under “*Microsoft Windows 95*” on page 18.

Installing the NetWare Client 32 Software

1. Run the setup program on the NetWare Client 32 installation disks to install the Novell NetWare Client 32 for Windows 95. See the Novell NetWare installation guide for details.
2. When you have installed Novell NetWare Client 32, choose “Reboot” to restart the system.
3. The installation is now completed.
If you want to use the Novell ODI LAN driver rather than the NDIS 3.0 Miniport driver, proceed to “*Converting the NDIS 3.0 Miniport Driver to a Novell ODI LAN Driver*”.

Converting the NDIS 3.0 Miniport Driver to a Novell ODI LAN Driver

1. Open the Network configuration screen (Start/Settings/Control Panel/Network) and look for any reference to “Olicom Ethernet MCA 10/100 Adapter (OC-2335)”. Highlight all instances with the mouse and click “Remove”. When all instances of “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” has disappeared, click “OK” and restart the PC.
2. Open the Network Configuration screen (Start/Settings/Control Panel/Network), choose Add/Adapter/Have Disk, and type:

A:\NETWARE\NW4X

 Click on “Olicom Ethernet MCA 10/100 Adapter (OC-2335) 32 Bit ODI” and press “OK”.
3. When the system then prompts for the NetWare Client 32 setup disk, insert the disk and click “OK”.
If you did not install NetWare Client 32 from disk, enter the correct path to the Client 32 files and click “OK”.
4. The system may prompt for the source of the Windows 95 installation files.
If Windows 95 was installed from disk, insert the requested disk.
If Windows was installed from CD-ROM, make sure the original CD-ROM is inserted and enter the path to the installation files.
If Windows was pre-installed on the hard disk, the path usually is C:\WINDOWS\OPTIONS\CABS.
You may also be prompted for the location of the network driver. If so, insert the Olicom Driver Disk, type A:\NETWARE\NW4X and click “OK”.
5. If the system prompts for the remaining NetWare Client 32 disks, insert the disks one by one and click “OK”. If you did not install NetWare Client 32 from disk, enter the correct path to the Client 32 files and click “OK”.
6. When the installation is completed, press “OK” to close Network Properties screen and “Yes” to restart the PC.



Note: If you want to re-use the NDIS 3.0 Miniport driver, remove the OCE3XODI.INF file from the C:\WINDOWS\INF directory. Open the Network configuration screen (Start/Settings/Control Panel/Network) and look for any reference to “Olicom Ethernet MCA 10/100 Adapter (OC-2335) 32 Bit ODI”. Highlight all instances with the mouse and click “Remove”. When all instances of “Olicom Ethernet MCA 10/100 Adapter (OC-2335) 32 Bit ODI” have disappeared, click “OK” to restart the PC, and install the NDIS 3.0 Miniport driver as described under “*Microsoft Windows 95*” on page 18.

NetWare Client 32 for Windows 3.1x

This installation requires:

- Novell NetWare Client 32 for DOS/Windows 3.1x installation diskettes
- Olicom Driver Disk

NetWare Client 32 version 2.12

1. Run the install program on the NetWare Client 32 for DOS/Windows 3.1x installation diskettes and follow the installation guidelines given by Novell. See the Novell installation guide for details.
2. When prompted for Network Board drivers, select “USER SUPPLIED DRIVER”.
3. Insert the Olicom Driver Disk and specify the path to the Olicom NetWare Client 32 drivers:

A:\NETWARE\NW4X\OCE3XODI.LAN

4. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” driver and follow the instructions to complete the installation.

NetWare Client 32 version 2.20

1. Run the install program on the NetWare Client 32 for DOS/Windows 3.1x installation diskettes and follow the installation guidelines given by Novell. See the Novell installation guide for details.
2. When prompted for LAN adapter, select “Have Disk”.
3. Insert the Olicom Driver Disk and specify the path to the Olicom NetWare Client 32 drivers:

A:\NETWARE\NW4X\

4. Select the manufacturer “Olicom” and the model “Olicom Ethernet MCA 10/100 Adapter (OC-2335) (Have Disk)”, and follow the instructions to complete the installation.

NetWare Client 32 for DOS

This installation requires:

- Novell NetWare Client 32 for DOS/Windows 3.1x installation disks
 - Olicom Driver Disk
1. Run the install program on the NetWare Client 32 for DOS/Windows 3.1x installation disks and follow the installation guidelines given by Novell. See the Novell installation guide for details.
 2. When prompted for Network Board drivers, select “USER SPECIFIED 32 BIT DRIVER” or “OTHER DRIVERS”.
 3. Insert the Olicom Driver Disk and specify the path to the Olicom NetWare Client 32 drivers:

A:\NETWARE\NW4X

Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and follow the instructions to complete the installation.

NetWare OS/2 Requester

This installation procedure requires the following software and related documentation:

- Novell NetWare Requester for OS/2 v. 2.0 or higher
 - Olicom Driver Disk
 - OS/2 v. 1.1 or higher
1. Install the NetWare Requester for OS/2 on the OS/2 workstation. See the “NOVELL NetWare Requester for OS/2 Supplement” manual. Some versions of the OS/2 Requester Installation Program require that one of the Novell supplied drivers is loaded. If so, simply choose one at random, and then replace it with the Olicom driver in step 3.
 2. Copy the OCE3XODI.SYS driver to the OS/2 workstation directory that contains the NetWare device drivers:

COPY A:\OS2\OCE3XODI.SYS C:\<path>

(<path> was chosen during NetWare Requester installation)

3. Insert the following line in CONFIG.SYS to load OCE3XODI.SYS:

DEVICE=C:\<path>\OCE3XODI.SYS

The line must be inserted where the network adapter driver statements, supplied with the OS/2 Requester, are disabled by “rems”.

Supplementary information about the NET.CFG file:

In the OS/2 environment the NetWare modules are configured via the NET.CFG text file. The following information describes the valid configuration options for the OCE3XODI.SYS driver.

Sample NET.CFG:

```
Link Support
  Buffers 10 1514
Link Driver OCE3XODI
  Frame Ethernet_802.2
```

► **Note:** The line heading the driver section (Link Driver OCE3XODI) must not have any preceding spaces on the line, whereas the options must be indented one or more spaces.

See the previous section, NetWare DOS ODI Workstation for information on parameters to use with the OCE3XODI driver.

Novell NetWare Servers

The Ethernet MCA Adapter may be installed in NetWare 4.x and 3.12 servers. Error messages for NetWare are listed in appendix B.

NetWare 4.x Servers

1. If the NetWare 4.x server operating system has not been installed already, install it now. As part of the installation process, the INSTALL utility prompts for a LAN driver. Proceed to step 4.
2. If the server is up, load the INSTALL.NLM utility at the server console.
3. If you are using NetWare 4.0x, select "Maintenance/Selective Install" and then "LAN driver options".
If you are using NetWare 4.10 or 4.11, select "Driver Options" and then "Configure Network Drivers".
4. Enter "Select additional driver" and insert the Olicom Driver Disk when prompted. The Ethernet MCA Adapter driver requires a SLOT parameter. If a SLOT parameter is not supplied to the INSTALL utility, you must switch to the console screen where the driver presents a list of available SLOT numbers and awaits user input.

If the modules are already loaded, make sure that NBI.NLM is version 1.50 or higher. This is required by the driver. Use the command "MODULES" to make sure that the modules are loaded and which revisions they have. The required modules are located on the Olicom Driver disk in:

\NETWARE\NW4X

5. Press F3, set up the path to:

A:\NETWARE\NW4X

and follow the instructions

Hints

1. In an IPX internal router configuration (a server with two adapters, each connected to a different network), the data transfer rate across the router can be low. This happens if client workstations have CPU speeds greater than or equal to the server. You may be able to increase the data transfer rate by adding the following to STARTUP.NCF:

SET MAXIMUM INTERRUPT EVENTS = 100000

The default setting is 10.

- If you have problems loading the driver on multiple adapters and the initialization fails due to “Insufficient RCBs”, increase the number of buffers allocated to the server. Add the following to STARTUP.NCF:

```
SET MINIMUM PACKET RECEIVE BUFFERS = 100 (or larger)
SET MAXIMUM PACKET RECEIVE BUFFERS = 500 (or larger)
```

The MINIMUM value specified must be at least 30 times the number of Olicom Ethernet PCI/II 10 Adapters in the computer. The recommended settings are:


```
1-3 adapters: 100
4 adapters: 150
```

The MAXIMUM you can specify depends on the amount of memory in the server, but it must be greater than the MINIMUM.

NetWare 3.12 Server

- Insert the Olicom Driver Disk in drive “A” and load the following NLMs:

```
LOAD A:\NETWARE\NW312\NBI31X.NLM (see note)
LOAD A:\NETWARE\NW312\MSM31X.NLM
LOAD A:\NETWARE\NW312\ETHERTSM.NLM
```

 **Note:** Disregard the warning message that appears. The driver will load. If the modules are already loaded, make sure that NBI.NLM (NBI31X.NLM) is version 1.50 or higher. This is required by the driver. Use the command “MODULES” to make sure that the modules are loaded and which revisions they have. The modules are located on the Olicom Driver disk in \NETWARE\NW312

- With the Olicom Driver Disk in drive “A”, load the adapter driver with the following commands (substitute appropriate values for “xxx” and “yyy”):

```
LOAD A:\NETWARE\NW312\OCE3XODI.LAN SLOT=xxx
BIND IPX OCE3XODI NET=yyy
```

- With the server now accessible, copy the OCE3XODI.LAN server driver and the NLMs from the Olicom Driver Disk in a NetWare workstation to the SYSTEM directory of the connected server.
- Ensure automatic loading of the Novell server driver at re-boot by inserting the following commands in the server’s AUTOEXEC.NCF file (substitute appropriate values for “xxx” and “yyy”):

```
LOAD NBI31X.NLM
LOAD MSM31X.NLM
LOAD ETHERTSM.NLM
LOAD OCE3XODI SLOT=xxx
BIND IPX OCE3XODI NET=yyy
```

Hints

1. In an IPX internal router configuration (a server with two adapters, each connected to a different network), the data transfer rate across the router can be low. This happens if client workstations have CPU speeds equal to or higher than the server. You may be able to increase the data transfer rate by adding the following to `STARTUP.NCF`:

```
SET MAXIMUM INTERRUPT EVENTS = 100000
```

The default setting is 10.

IBM DOS Environment

IBM LAN Support Program (DOS)

This section describes the procedure for installing the Olicom NDIS 2.0 MAC driver in the IBM LAN Support Program for DOS with the IBM Installation Aid.

1. Follow the guidelines described by IBM for “*Installing the LAN Support Program*” with the “*Installation Aid*” program.
2. Run the Installation Aid program:

DXMAID

3. When prompted for changes in the “Setup” window, select “YES” in the field labelled “Do you have Driver Diskettes?”.
4. When the “Process Driver Diskette” window appears, insert the Olicom Driver Disk and type:

A:\IBM\NDIS.DOS

5. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” in the “ADAPTER DRIVER” window.
6. Press F5 to change or view the NDIS driver parameters.
For more information about parameters which may be used for configuring the network adapter, see the Olicom online documentation for detailed information.
7. Follow the IBM guidelines to complete the installation.

The MAC driver for the adapter is now installed in the LAN Support Program configuration. To install the IBM DOS LAN Requester, follow the guidelines given by IBM.

IBM DOS LAN Services - DLS

The adapter driver can be installed either during DOS LAN Services installation or after DOS LAN Services has been successfully installed. The installation described below covers DOS LAN Services versions 4.0 and 5.0.

Driver Installation during DOS LAN Services Installation

1. Start the installation as described by IBM with the following command:

A:\INSTALL

2. When prompted for the type of network card used, select “Network card not shown in list below” and press Enter to continue.

3. Insert the Olicom Driver Disk into drive “A” and specify the location of the OEMSETUP.INF file to be:

A:\IBM\NDIS.DOS

4. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and change if required the default settings by selecting “Edit settings for network card driver”.
5. Select “Driver configuration is correct” and press Enter to continue.
6. Follow the guidelines given by IBM to proceed with the installation.
7. When the “Installation Complete” screen appears, press F3 for Exit without rebooting.
8. Copy the driver from the Olicom Driver Disk to your default DOS LAN Services (for example C:\NET) directory by inserting the Olicom Driver Disk into drive “A” and entering the following command:

COPY A:\IBM\NDIS.DOS\OCE3XND2.DOS C:\NET

9. Reboot your PC to start DOS LAN Services.

Driver Installation after DOS LAN Services Installation

1. Start the installation as described by IBM with the following command:

C:\NET\INSTALL

2. Select “The listed options are correct” and press Enter to continue.
3. Select “Network Card” and press Enter to continue.
4. Select “Change driver for network card” and press Enter to continue.
5. Select “Network card not shown in list below” and press Enter to continue.
6. Insert the Olicom Driver Disk into drive “A” and specify the location of the OEMSETUP.INF file to be

A:\IBM\NDIS.DOS

7. Press Enter to continue.
8. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” and change - if required - the default settings by selecting “Edit settings for network card driver”.
9. Select “Driver configuration is correct” and press Enter to continue.
10. Follow the guidelines given by IBM to complete the installation.

11. Copy the driver from the Olicom Driver Disk to your default DOS LAN Services directory (for example C:\NET) by inserting the Olicom Driver Disk into drive "A" and entering:

```
COPY A:\IBM\NDIS.DOS\OCE3XND2.DOS C:\NET
```

and press Enter to continue.

12. The configuration will become active when the system is rebooted.

IBM OS/2 Environment

IBM Extended Services 1.0 and IBM LAN Server products use the NDIS interface. The NDIS 2.0 drivers for DOS and OS/2 are also referred to as MAC drivers.

IBM NTS/2 and IBM Extended Services

This section describes how to install the MAC driver for the adapter with IBM NTS/2 and IBM Extended Services.

1. Start the Communication Manager and select “Advanced”, “Configuration”, “LAN Adapter and Protocol Support” and “Copy additional network adapter drivers”.
2. When requested to do so, insert the Olicom Driver Disk and enter the path to the driver:

A:\IBM\NDIS.OS2

3. When the network driver has been copied, select “Configure workstation” and configure the workstation (refer the IBM documentation).
See also “*Configuring the NDIS 2.0 MAC Driver*” in the Olicom online documentation.

IBM LAPS - LAN Server 3.0

This section describes how to install the MAC driver for the Ethernet MCA 10/100 Adapters with LAN Server 3.0:

- during installation of LAN Adapter and Protocol Support (LAPS)
- after installation of LAN Adapter and Protocol Support (LAPS)


Install the MAC Driver during Installation of LAPS

1. Insert the “*IBM Network Transport Services/2, LAN Adapter and Protocol Support*” diskette and run the LAPS program (that is A:\LAPS).
2. Select “Install” in the LAN Adapter and Protocol Support program’s main menu. The program installs LAPS on the hard disk.
3. At a certain stage during installation the “Protocol Support programs main menu” reappears, but this time with the “Install”, “Configure”, “Remove”, “Exit” and “Help” options selectable.
Proceed with the installation as described in “Install the MAC Driver after Installation of LAPS”, step 2.

Install the MAC Driver after Installation of LAPS

1. Make \IBMCOM the current directory and run the LAPS program by typing:


```
CD \IBMCOM
LAPS
```
2. Select the “Install” option in the LAPS main menu.
3. When prompted for the source path of “Additional Network Drivers”, insert the Olicom Driver Disk, enter the path “A:\IBM\NDIS.OS2” and select “OK”.
4. When the message “Installation Complete” appears on screen, select “OK”. Configuration of the Ethernet adapter can now take place.
5. Select “Configure”, “Configure LAN Transport” and “Continue”.
6. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” as the network adapter by adding it to “Current Configuration”.
The parameters of the Olicom adapter may now be edited.
7. Select “Olicom Ethernet MCA 10/100 Adapter (OC-2335)” in the current configuration list and then “Edit”.

 **Note:** If you have more than one Ethernet MCA Adapter in your system, you should set the “I/O Address” parameter for “Olicom Ethernet MCA 10/100 Adapter (OC-2335)”.

8. Add and configure protocols to suit the requirements.
9. Select “OK” when the configuration of the LAN Transports is complete.
10. Select “Exit” in the LAPS main menu and let LAPS update CONFIG.SYS on the boot drive by selecting “Continue”.
11. Follow instructions given by LAPS to complete the installation.

IBM MPTS - LAN Server 4.0/5.0, OS/2 WARP

You may choose between driver installation during MPTS (Multi-Protocol Transport Services) installation or after MPTS installation.

MAC Driver Installation during MPTS Installation

1. Install MPTS as described by IBM.
2. At a point during the installation the MPTS main menu will appear again, but with the “Exit”, “Configure”, “Install”, “Remove”, and “Help” options selectable.
3. Proceed with the installation as described in step 2 under “Driver Installation after MPTS Installation”.

MAC Driver Installation after MPTS Installation

1. Run the MPTS program. Make \IBMCOM your current directory (by typing "CD \IBMCOM") and type "MPTS".
2. Select the "Configure" option in the MPTS main menu.
3. Select "LAN Adapters and Protocols" and then "Configure". Push the "Other Adapters..." button.
4. Insert the Olicom Driver Disk, enter the path "A:\IBM\NDIS.OS2" and press "OK".
5. Select "Olicom Ethernet MCA 10/100 Adapter (OC-2335)" as your network adapter card by adding it to the "Current Configuration".
6. Edit the parameters of the Ethernet MCA Adapter by first selecting "Olicom Ethernet MCA 10/100 Adapter (OC-2335)" in the current configuration list and then selecting "Edit".



Note: If you have more than one Ethernet MCA Adapter in your system, you should set the "I/O Address" parameter for "Olicom Ethernet MCA 10/100 Adapter (OC-2335)".

7. Add and configure protocols to suit your requirements.
8. Select "OK" when the configuration of the LAPS configuration complete and select "Close" to end configuration.
9. Select "Exit" in the MPTS main menu and let MPTS update your CONFIG.SYS on your boot drive by selecting "Continue".
10. Follow instructions given by MPTS to complete the installation. The Ethernet Adapter will become active when the system is rebooted.

Configuring the NDIS 2.0 MAC Driver

Configuration of the NDIS 2.0 MAC driver is described in detail in the Olicom online documentation, *Configuring the NDIS 2.0 MAC Driver*.

NDIS 2.0 MAC Driver Messages

When you boot your system, a number of messages is displayed on the screen. Some messages are for information only and some are information about errors.

During driver load, the following text is displayed:

```
DOS NDIS 2.02: MAC Driver for Ethernet ISA/MCA 10/100
Adapters vx.xx (xxxxxx)
Copyright 1997, Olicom A/S. All Rights Reserved.
OC-2335 MAC driver installed.
Using I/O address XXX-XXX, IRQ YY
100 Mbps, Half duplex operation detected.
```

The speed and duplex operation displayed in the last line will vary depending on the detected mode and/or settings from PROTOCOL.INI.

If messages other than the one above is displayed, a failure is indicated. See the error message listings in appendix B.



8. Utilities

Four utility programs are available from the “Utility Installation” button in the Setup program. The utilities are as follows:

- Adapter Information for Windows - AIW
- Desktop Management Interface - DMI
- Novell SNMP Installation
- The Setup Program (Olicom Adapter Setup Program)

See the Olicom online help for details about *Desktop Management Interface*, *Novell SNMP Installation* and *The Setup Program*.

Adapter Information for Windows

The Adapter Information for Windows (AIW) program displays information about the adapter and the adapter driver. By nature the AIW program is only available from Windows. The following information is available via AIW:

- Adapter type, serial number and configuration data
- Driver name, type, version and configuration data
- Driver statistics in numeric form
- System files
- Network traffic information in graphical form
- How to contact Olicom Support and Sales Offices
- Other Olicom products
- If needed, configuration data can be saved to a file or printed

System Requirements

- Microsoft Windows 3.1x, Windows for Workgroups 3.1x, Windows 95, or Windows NT
- An Olicom DMI enabled driver:
 - OCE3XODI.COM (DOS ODI driver)
 - OCE3XND2.DOS (NDIS 2.0 DOS driver)
 - OCE3XM.SYS (NDIS 3.0 Miniport driver)

Installation

1. Insert the Olicom Setup Disk into drive “A”.
2. From Windows 95 or Windows NT 4.0, select “Run” from the Start menu, type:

A:\SETUP

and select “OK” to start setup.

From Windows 3.1x or Windows NT 3.5x, select “File” and “Run” from the Main program group, type:

A:\SETUP

and press “OK” to start setup.

3. From the Setup program, select “Utility Installation” and “Olicom Adapter Information for Windows”.
4. Follow the instructions to complete the installation.

The installation process creates a new program group in which the AIW logo is located.

Activation

1. Double-click on the AIW icon to activate the AIW program.
2. For more details about AIW options, select the “Help” menu or press F1.

Uninstalling AIW

If required, the AIW application can be uninstalled by manually deleting the program files from your hard disk. These files are by default placed in the C:\OLICOM directory, and are as follows: AIW.EXE, AIW.HLP, AIW.INI, ILIB31HT.DLL, OLIAIW.DLL, OLIAIW.VXD, and OLIAIW32.DLL.

Any files in the HTML subdirectory may also be deleted.



9. Diagnostics

The Ethernet MCA 10/100 Adapter is supplied with a diagnostics program that can be used to:

- Test the adapter and the adapter cable(s) if you suspect a problem.
- View the current adapter configuration

► **Important:** The Diagnostics Program must be run from the Olicom Diagnostics Disk.

Running the Diagnostics Program

1. Make sure that the adapter is connected to the network.
2. Insert the Olicom Diagnostics Disk in the disk drive.
3. Boot the system from the Olicom Diagnostics Disk.

Adapter Test

To test that the adapter itself is working in the current configuration, run the internal tests by selecting “Run Diag” from the main window.

Note that the network connection will not be tested (see below).

Network Connection Test

To test the network connection you must first setup a secondary workstation with an Olicom Ethernet adapter.

1. Start the Diagnostics Program on the secondary workstation and run the internal tests as described above (preferably from a copy of the Olicom Diagnostics Disk).
2. Select “Be Responder” to set up the secondary workstation as a responder (a responder is a station on the LAN which echoes packets transmitted from other workstations running the network diagnostics).
3. When the responder is started on the secondary workstation, select “Network Test” on the primary workstation.

The network diagnostics first attempts to transmit packets onto the network. If a network responder is detected, packets will be transmitted on the physical net between the machine running the test and the responder.

If no network responder is detected, you can do an Internal loopback test.

An Internal loopback test performs a loopback in the cable without transmitting frames to the network.

Additional Information

See also the Diagnostics Program online help for further information about the program.



10. Troubleshooting

Problems and Solutions

Problem	Solutions
You are informed: "No adapter found"	<p>Make sure there is an Ethernet MCA Adapter in the computer.</p> <p>Make sure the adapter is seated firmly in the slot.</p>
LINK LED (light green) does not light. (The status LEDs are described in figure 7 on page 52).	<p>Make sure you have loaded the network drivers.</p> <p>Check all connections at the adapter and the hub.</p> <p>Try another port on the hub.</p> <p>Make sure that the hub and adapter ports are configured for the correct speed, 10 or 100 Mbps.</p> <p>If the adapter is connected to a switch, check that the adapter duplex setting is correct.</p>
ACTIVITY LED (yellow) does not light. (The status LEDs are described in figure 7 on page 52).	<p>Make sure you have loaded the network drivers.</p> <p>Check the network protocols on the server and the client.</p> <p>If the adapter is connected to a switch, check that the adapter duplex setting is correct.</p> <p>Check all connections at the adapter and the hub.</p> <p>Try another port on the hub.</p> <p>Make sure that you are using Category 5 cabling.</p>
Data is corrupted or sporadic at 100 Mbps.	<p>Make sure that you are using Category 5 cabling.</p>
Diagnostics are OK, but the network connection fails.	<p>Make sure that the network cable is securely connected.</p> <p>Make sure that you are using Category 5 cabling for 100 Mbps.</p> <p>Check that the cable media is correct and that the cable is connected to an attachment unit.</p> <p>Check the network protocols on the server and the client.</p> <p>Make sure the correct frame is used (Novell NetWare only).</p>

The adapter stopped working when another adapter was installed in the PC.	Ensure that the adapter is firmly seated. Run the adapter diagnostics. Make sure that the cable is connected to the Ethernet MCA 10/100 Adapter and not another device.
---	---

Table 1. Problems and Solutions

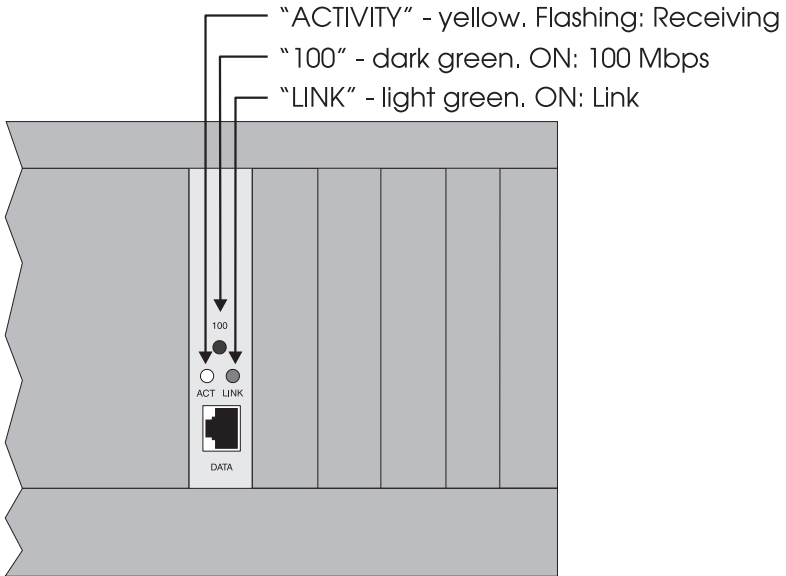


Figure 7. Status LEDs

EMM386 Memory Manager

On some system, drivers may halt the system while being loaded, if the DOS memory manager EMM386.EXE is installed. This problem does not occur for EMM386.EXE v. 4.49 supplied with MS-DOS v. 6.22 (or later) or IBM-DOS v. 7.0.

In some cases it is possible to load the driver *before* EMM386.EXE to circumvent the problem.

Everything has been tried! What now?

If you cannot resolve the problem and have tried the suggested actions in appendix B, write down the encountered error message(s) and retrieve as much information as possible about your system configuration (drivers, PC brand and model, operating system, network operating system, etc.) and fill it in the *Problem Report Form* on page 58.

Contact Olicom Support when you have collected this information.



11. Contacting Technical Support

If support is not provided by your organization or the local vendor, you can at any time relay information to or contact Olicom Technical Support via one of the listed services. In addition, BBS, e-mail, FTP or WWW provide up-to-date software updates, application notes, quick fixes and various utilities which may solve your problem.

Before You Contact Olicom Technical Support

- Run the adapter diagnostics and write down the message(s)
- Simplify the environment by removing memory managers, etc.
- Change the configuration if you suspect a resource conflict
- Remove other devices one by one to detect a possible conflict
- Fill in as much as possible in the included Problem Report Form

Hotline Support

Call the following numbers for help with *any* problem you may encounter when installing Olicom software and hardware products:

- Europe:** (+45) 4527 0102 (Denmark, Monday to Friday, 8 am to 6 pm GMT + 1)
 (+48) 39 125 071 (Poland, Monday to Friday, 8 am to 6 pm GMT + 1)
 (+44) 1494 556 611 (UK, Monday to Friday, 9 am to 6 pm GMT)
 0 800 919 508 (inside the UK, Monday to Friday, 9 am to 6 pm GMT)
- USA:** (+1) 1-800-OLICOM-1 (24 hours a day, 7 days a week)
 (+1) 972 516 4638 (24 hours a day, 7 days a week)

Fax Support

For assistance with any problem you may encounter when installing Olicom software and hardware products, Olicom's Support department will reply either by fax or by telephone within 24 hours, Monday to Friday. Use one of the following fax numbers:

- Europe:** (+45) 4527 0240 (Denmark)
 (+48) 58 346 1238 (Poland)
 (+44) 1494 556 616 (UK)
- USA:** (+1) 972 516 0640

Bulletin Board Service

All Olicom's support services are available via our BBS: software updates, application notes, quick fixes, various utilities, etc. The Bulletin Board Service (BBS) can be contacted using either a standard modem or an ISDN modem.

Standard Modem Requirements

Modem speed: 2400, 4800, 7200, 9600, 12000, 14400, 28800 bps
Modem standard: CCITT V21/V22/V22bis/V32/V34/V42bis/HST/MNP5
Parity: N (none)
Databits: 8
Stop bits: 1
Transfer protocols: Xmodem, Ymodem, Zmodem, Kermit and Sealink.

Use one of the following numbers:

Europe: (+45) 45 27 01 00 (and create your own account)

USA: (+1) 972 422 9835

ISDN Modem

Use the following number:

Europe: (+45) 45 96 32 48 (Denmark)

Internet E-Mail

Olicom customer support is available on e-mail through Internet. Use one of the following e-mail addresses:

Europe: support@olicom.dk

USA: support@olicom.com

Anonymous Internet FTP Server

All Olicom's support services can be obtained from our anonymous FTP server: software updates, application notes, quick fixes, etc. To connect, open an FTP session to:

Europe: ftp.olicom.dk

USA: ftp.olicom.com

Internet World Wide Web Server (WWW)

The Olicom WWW server contains up-to-date information about Olicom products, newsletters and press releases. It also contains addresses of all Olicom offices and support centers worldwide. Our software library contains the latest driver and software revisions. The WWW server can be accessed using the following web addresses:

Europe: <http://www.olicom.dk>

USA: <http://www.olicom.com>

Olicom Support WEB

The Olicom Support WEB contains technical support hints, a problem report form, drivers and software updates.

Europe: <http://www.olicom.dk>

USA: <http://www.olicom.com>

Select “SERVICES & SUPPORT” from the main menu to access the area with technical support hints and problem report form registration.

Select “SOFTWARE” from the main menu to access the software library.

Problem Report Form

Fill in both sides of this Problem Report Form, print out the relevant system configuration files and FAX or mail to Olicom Technical Support. You can also fill in and send a Problem Report Form from Olicom's web site on the Internet.

Problem Description
Network Information

Adapter Information		
Adapter type		
ECO level and serial number (see labels on the back of the adapter)		
I/O address		
Interrupt		
Driver Information		
Driver Disk		
Operating system		
Network OS		
Driver name		
Version (usually the same as file time stamp)		
PC Information		
PC type/vendor/model		
Bus type/processor		
Memory		
Additional boards		
BIOS version		
Motherboard rev.		
Print out and attach these configuration files:		
CONFIG.SYS	for workstations and OS/2 servers	Check here: <input type="checkbox"/>
AUTOEXEC.BAT	for all workstations	Check here: <input type="checkbox"/>
PROTOCOL.INI	for NDIS workstations and servers	Check here: <input type="checkbox"/>
LANMAN.INI	for NDIS workstations and servers	Check here: <input type="checkbox"/>
IBMLAN.INI	for NDIS workstations and servers	Check here: <input type="checkbox"/>
DOSLAN.INI	for NDIS workstations and servers	Check here: <input type="checkbox"/>
NET.CFG	for NetWare workstations	Check here: <input type="checkbox"/>
AUTOEXEC.NCF	for NetWare servers	Check here: <input type="checkbox"/>
STARTUP.NCF	for NetWare servers	Check here: <input type="checkbox"/>
AIW report	for all Windows configurations	Check here: <input type="checkbox"/>

Name: _____ Company: _____

Address: _____ Country: _____

Telephone/FAX: _____ E-mail: _____

Appendix A. System Requirements

- A free MCA expansion slot
- MS-DOS v. 3.3 or higher – for Novell NetWare DOS workstation environments
- OS/2 v. 1.x or higher – for Novell NetWare OS/2 Requester environments
- NetWare 3.1x or higher – for Novell NetWare 386 Server environments
- MS-DOS v. 3.3 or higher – for IBM PC LAN Program environments
- MS-DOS v. 3.2 or higher – for Microsoft DOS LAN Manager environments
- MS-OS/2 v. 1.0 or higher – for Microsoft OS/2 LAN Manager environments
- IBM-OS/2 v. 2.0 or higher – for IBM LAN Server/Extended Services
- MS Windows 95 – for Microsoft Windows 95 environments
- MS Windows NT – for Microsoft Windows NT environments
- One of the following I/O address ranges must be free:
 - 200h - 21Fh
 - 240h - 25Fh
 - 280h - 29Fh
 - 2C0h - 2DFh
 - 300h - 31Fh
 - 340h - 35Fh
 - 380h - 39Fh
 - 3C0h - 3DFh
- One of the following input levels must be free: 2, 3, 4, 5, 10, 11, 12 or 15
- Free memory capacity to load the Ethernet MCA 10/100 Adapter driver, the network operating system and the required applications



Appendix B. Driver Messages

This appendix consists of six sections. Each section describes driver messages and return codes that may appear during installation and operation with the Ethernet MCA Adapter and the network operating system or support program.

The sections cover the following topics:

Section B.1, Microsoft/IBM NDIS 2.0 MAC Driver

Describes error messages generated by the NDIS 2.0 driver.

Section B.2, Microsoft NDIS 3.0 Miniport Driver

Describes error messages generated by the NDIS 3.0 driver.

Section B.3, DOS ODI Driver

Describes error generated by the DOS ODI driver

Section B.4, OS/2 ODI Driver

Describes error generated by the OS/2 ODI driver

Section B.5, NetWare Server ODI and Client 32 Driver

Describes error generated by the server driver

Section B.6, Diagnostics Error Messages

Describes error messages produced by the diagnostics program.

B.1 Microsoft/IBM NDIS 2.0 MAC Driver

The NDIS 2.0 drivers, OCE3XND2.DOS and OCE3XND2.OS2 may generate the following warnings and error messages.

Information messages

During driver load, a sign-on banner like the following is displayed:

```
DOS NDIS 2.02: MAC Driver for Ethernet ISA MCA 10/100 Adapters vx.xx (xxxxxx)
Copyright 1997, Olicom A/S. All Rights Reserved.
OC-2335 MAC driver installed. Using I/O address XXX-XXX, IRQ YY.
100 Mbps, Half duplex operation detected.
```

The speed and duplex operation displayed in the last line will vary depending on the detected mode and/or settings from PROTOCOL.INI.

Warnings

Warning messages are displayed if an invalid value has been entered for a parameter in PROTOCOL.INI or if non-fatal errors are detected during driver load.

Warning: Illegal speed setting in PROTOCOL.INI (must be 10 or 100).

The speed setting in PROTOCOL.INI is not specified correctly (possible values are 10, 100, or 0). If this error occurs, the driver defaults to 0 (Auto) and continues to load.

Warning: Illegal duplex setting in PROTOCOL.INI (must be HALF or FULL).

The duplex setting in PROTOCOL.INI is not specified correctly (possible values are HALF, FULL, or AUTO). If this error occurs, the driver defaults to AUTO and continues to load.

Warning: Illegal Transmit buffer count in PROTOCOL.INI.

The XMITBUFCOUNT parameter in PROTOCOL.INI is invalid. DOS: Valid values are 2 to 8. Default is 4. OS/2: Valid values are 2 to 32. Default is 20.

Warning: Error allocating DMI handle, function disabled.

DOS only: The driver could not allocate a handle for DMI interface. The interface is disabled.

Errors

Error messages displays fatal errors detected during driver load.

Failure: Unable to allocate GDT, Driver not loaded.

OS/2 only: The required number of GTDs is not available for the driver to operate. Free some GDTs by disabling other devices in the system.

Failure: Protocol.ini does not have an entry for OCE3X.

There are no sections in PROTOCOL.INI for the OCE3X driver. Review the PROTOCOL.INI file.

Failure: PROTOCOL.INI does not have a valid DRIVERNAME.

The driver name is not valid in the OCE3X section in PROTOCOL.INI. Review the PROTOCOL.INI file.

Failure: Protocol Manager did not accept LAN Card driver.

The protocol manager was not able to bind the driver. Review the PROTOCOL.INI file.

Failure: Could not find adapter at specified IOBASE.

The driver could not find the adapter at the address specified by the IOBASE keyword in the OCE3X section of the PROTOCOL.INI file. Note that IOBASE needs only be specified if you have more than one Ethernet MCA 10/100 Adapter in your computer.

Failure: Invalid IOBASE specified in PROTOCOL.INI.

The IOBASE parameter is present in the OCE3X section of the PROTOCOL.INI file, but the parameter specified is not valid. Remove the IOBASE entry in PROTOCOL.INI or change the IOBASE parameter to a legal value. If the IOBASE entry is present in PROTOCOL.INI, the value must match the I/O address setting for an installed adapter.

Failure: Invalid burned in address or checksum.

The EEPROM contained an invalid burned-in address or the checksum stored was not correct. Run adapter diagnostics.

Failure: Invalid Interrupt read from adapter.

The Interrupt read from the adapter is invalid. Change the interrupt selection on the adapter and retry the operation.

Failure: No adapters found.

The driver could not find an Ethernet Adapter at any valid I/O address. If the IOBASE keyword is not present in the OCE3X section of the PROTOCOL.INI file, the driver will search for an adapter at all valid I/O addresses. If no adapters are found at any of the valid I/O addresses, this message is displayed. Otherwise, the driver will inform you of the I/O address where the adapter was found in the MAC Driver installed information string.

Failure: EEPROM checksum error, Run diagnostics.

The EEPROM checksum stored was not correct. Run adapter diagnostics.

B.2 Microsoft NDIS 3.0 Miniport Driver

The NDIS 3.0 error messages reported under Microsoft Windows 95 and Microsoft Windows NT are identical. However, the way in which the errors are reported to the user differs.

Windows 95

In Windows 95 error codes reported by the NDIS 3.0 Miniport driver are written to the NDISLOG.TXT file located in your Windows directory. An example of an error message reported by the NDIS driver could be:

```
Olicom Ethernet MCA 10/100 Adapter (OC-2335) (0000).  
Error Code=0XC000138B, 0X00000011, 0X00000000, 0XC0FDA528, 0X00000000
```

The text “**0XC000138B**” describes the error and refers to a specific error code, listed below. Ignore the leading “**0XC000**” (resulting in error code 138B for the example above - Adapter not found).

If you experience any problems, you should make a backup copy of the NDISLOG.TXT file before restarting Windows 95.

Windows NT

When running Windows NT, NDIS 3.0 errors are reported using the Event Log. This log can be examined using the Event Viewer located in the Administrative Tools window.

If you experience any problems with the network, check if any error messages or warnings are posted by the driver by using the Event Viewer found in the Administrative Tools window. All error messages and/or warnings posted by the Olicom Miniport driver have the Source field set to OCE3XM. System error messages, related to the Olicom driver, may occur with different source names, for example “Service Control Manager”.

The messages are listed according to Event field and are described below in Event number order. Display the message description by highlighting the message and press Enter.

If you experience any problems, write down the “Event ID”, “Source”, “Description” and “Data” fields in the “Event Detail” window.

NDIS 3.0 Miniport Driver Error Messages

For each error message below the first line contains the error code used by Windows 95. The second line contains the “Event ID” and “Data” fields used by Windows NT.

Code Description

1388 Resource Conflict

5000 OCE3XM1: Has encountered a conflict in resources and could not load.

Action: Check the resources used by the network adapter(s) to ensure, that no conflicts exists.

1389 Out of Resources

5001 OCE3XM1: Could not allocate the resources necessary for operation

Action: The driver failed to load, because it tried to allocate too many resources.

138A Hardware Failure

5002 OCE3XM1: Has determined that the adapter is not functioning properly.

Action: The adapter could not be found or is not working properly. Check I/O base settings and retry the operation.

138B Adapter Not Found

5003 OCE3XM1: Could not find an adapter.

Action: The adapter could not be found by the MAC driver. Check I/O base settings and retry the operation.

138C Interrupt Connect

5004 OCE3XM1: Could not connect to the interrupt number supplied.

Action: The interrupt is already used by another device. Change the adapter interrupt number and retry the operation.

138D Driver Failure

5005 OCE3XM1: Has encountered an internal error and has failed.

Action: An internal error has been discovered. Contact Olicom Technical Support.

138E Bad Version

5006 OCE3XM1: The version number is incorrect for this driver.

Action: The driver version is incorrect. Contact Olicom Technical Support.

138F Time out

5007 OCE3XM1: Timed out during an operation.

Action: A time-out error occurred. Contact Olicom Technical Support.

1390 Network Address

5008 OCE3XM1: Has encountered an invalid network address.

Action: An invalid network address was specified. Change the locally administered network address and restart your system. The driver uses the burned-in address when loading.

1393 Missing Configuration Parameter

5011 OCE3XM1: A required parameter is missing from the Registry.

Action: A parameter necessary for operation has been omitted in the registry. Use the Network Setup to set proper parameters.

1396 Adapter Disabled

5014 OCE3XM1: The adapter is disabled. The driver cannot open the adapter.

Action: Make sure the Olicom adapter driver is properly installed. Remove the adapter and install it again using the method described in this help file. See also the troubleshooting section for further information on how to enable the adapter.

1397 I/O Port Conflict

5015 OCE3XM1: There is an I/O port conflict.

Action: The ports used by the MAC driver is already in use by another device. Change the I/O address for the adapter.

139A Interrupt Conflict

5018 OCE3XM1: There is a interrupt conflict at interrupt number XX.

Action: Change the interrupt selection on the adapter and re-try the operation.

B.3 DOS ODI Driver

This text describes the possible error messages displayed by the DOS ODI driver, OCE3XODI.COM.

Most of the error messages are listed with no further explanation as the error message itself gives sufficient information on cause and action to take.

The DOS ODI driver can display error messages when the driver loads. The error messages can be displayed in two ways:

“OCE3XODI- DOS-<text> or just “<text>”.

Common DOS ODI Errors

OCE3XODI-DOS-1 The LSL is not loaded.

Load the LSL or see the Novell NetWare documentation.

OCE3XODI-DOS-2 The LSL has no more room for a board using Frame <<frame>>.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-3 Could not find OCE3XODI MLID to unload.

See the Novell NetWare documentation.

OCE3XODI-DOS-4 A TSR is loaded above the OCE3XODI MLID.

IPXODI, NETX or VLM are probably loaded. Unload these program before unloading OCE3XODI. See the Novell NetWare documentation.

OCE3XODI-DOS-5 OCE3XODI MLID could not be unloaded; the operation was aborted.

As stated.

OCE3XODI-DOS-6 The adapter did not initialize. OCE3XODI did not load.

Run the DIAG program.

Contact your place of purchase if the error condition persists.

OCE3XODI-DOS-7 You need another MLID Section Heading in the NET.CFG file in order to load the MLID again.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-8 A NET.CFG is required to load the MLID again.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-9 The NET.CFG entry has been ignored.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-11 The MLID does not support frame <<frame>>.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-12 The protocol keyword must have a frame type. Entry ignored.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-13 The MLID could not register Protocol ID for protocol stack <<stack>> for frame type <<frame>>.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-14 This version of LSL is not supported.

Use v. 2.14 or higher.

OCE3XODI-DOS-15 The frame type is already activated for frame <<frame>>.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-16 The node address was incorrectly specified in NET.CFG.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-17 An invalid keyword was specified in NET.CFG on line <<line>>.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-18 The frame type specified in the NET.CFG is not supported.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-19 An invalid Ethernet node address is specified in NET.CFG. The MLID modified the incorrect address bits.

Locate and fix the error in NET.CFG. See also the NetWare documentation.

OCE3XODI-DOS-20 This version of the statistics table is not supported.

See the Novell NetWare documentation.

OCE3XODI-DOS-21 A program hooked Int 2F after the OCE3XODI MLID.

IPXODI, NETX or VLM are probably loaded. Unload these program before unloading OCE3XODI.

Errors specific to the OCE3XODI.COM DOS ODI Driver

OCE3XODI-DOS-51 This driver only supports AT or MCA class machines.

The driver has detected that your PC does not conform with the AT or MCA specifications. Contact your place of purchase.

OCE3XODI-DOS-52 Adapter not found.

Check that the OC-2335 is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program. Contact your place of purchase if the error condition persists.

OCE3XODI-DOS-53 Error accessing EEPROM on adapter.

The driver has located the OC-2335 adapter in the system but cannot access its EEPROM. Check that the adapter is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program. Contact your place of purchase if the error condition persists.

OCE3XODI-DOS-54 Adapter failed Built In Self Test.

Check that the OC-2335 is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program. Contact your place of purchase if the error condition persists.

OCE3XODI-DOS-55 The Media could not be selected.

The media type selected with DIAG or via keywords cannot be selected. Remove any keywords from the NET.CFG file and try again. If this does not solve the problem, then run the DIAG program.

OCE3XODI-DOS-56 Adapter must be inserted in a 16 bit slot.

Move your adapter to a 16 bit slot.

OCE3XODI-DOS-57 Invalid Burned In Address or checksum.

Run the OC-2335 DIAG program.

OCE3XODI-DOS-59 I/O port address in NET.CFG is invalid.

Locate and fix the error in NET.CFG See also the netware documentation.

OCE3XODI-DOS-72 INT parameter read from adapter is invalid.

Check that the OC-2335 is properly inserted. Then run the DIAG program. Contact your place of purchase if the error condition persists.

OCE3XODI-DOS-80 The Media could not be AUTO detected.

The media could not be automatically detected. Check that the cable is properly attached. Then run the DIAG program.

OCE3XODI-DOS-81 Cable appears to be disconnected.

Check that the cable is connected. If this does not solve the problem, then run the DIAG program.

Invalid SPEED keyword in NET.CFG

Values supported:

AUTO - Automatic network speed detection

10 - Force 10 Mbps

100 - Force 100 Mbps

Action: Use a legal value for SPEED. Default: Auto.

Invalid DUPLEX keyword in NET.CFG.

Values supported:

AUTO - Automatic media detector

FULL - Force Full duplex

HALF - Force Half duplex

Action: Use a legal value for DUPLEX. Default: AUTO.

B.4 OS/2 ODI Driver

The OCE3XODI.SYS OS/2 ODI Driver may generate the following warnings and error messages:

OCE3XODI-OS/2 Attempt to add MLID protocol ID failed.

There is too little memory in the computer.

OCE3XODI-OS/2 Attempt to allocate memory for Virtual Boards failed.

There is too little memory in the computer.

OCE3XODI-OS/2 LSL support module not installed.

Make sure the Novell LSL.SYS is loaded in CONFIG.SYS
See also the Netware documentation.

OCE3XODI-OS/2 This driver only supports AT or MCA class machines.

The driver has detected that your PC does not conform with the AT or MCA specifications.
Contact your place of purchase.

OCE3XODI-OS/2 This driver only supports 386 processors or higher.

Make sure that the PC is a 386+.

OCE3XODI-OS/2 Error installing interrupt handler.

Try configuring the adapter with another interrupt request level.

OCE3XODI-OS/2 Adapter not found.

Check that the OC-2335 is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-OS/2 Error accessing EEPROM on adapter.

The driver has located the OC-2335 adapter in the system but cannot access its EEPROM. Check that the adapter is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-OS/2 Adapter failed Built In Self Test.

Contact your place of purchase.

OCE3XODI-OS/2 The Media could not be selected.

The media type selected with DIAG or via keywords cannot be selected. Remove any keywords from the NET.CFG file and try again. If this does not solve the problem, then run the DIAG program.

OCE3XODI-OS/2 Adapter must be inserted in a 16 bit slot.

Move your adapter to a 16 bit slot.

OCE3XODI-OS/2 Invalid Burned In Address or checksum.

Run the OC-2335 DIAG program.

OCE3XODI-OS/2 I/O port address in NET.CFG is invalid.

Locate and fix the error in NET.CFG See also the NetWare documentation.

OCE3XODI-OS/2 INT parameter from adapter is invalid.

Check that the OC-2335 is properly inserted. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-OS/2 The Media could not be AUTO detected.

The media could not be automatically detected. Check that the cable is properly attached.
Then run the DIAG program.

OCE3XODI-OS/2 Cable appears to be disconnected.

Check that the cable is connected. If this does not solve the problem, then run the DIAG program.

OCE3XODI-OS/2 Invalid Node Override, Group Address bit was set now reset.

The NET.CFG file specifies an illegal Node Address

OCE3XODI-OS/2 Invalid Node Override, Local Administrated bit was reset now set.

The NET.CFG file specifies an illegal Node Address

OCE3XODI-OS/2 Invalid SPEED keyword in NET.CFG

Values supported:

AUTO - Automatic network speed detection

10 - Force 10 Mbps

10 - Force 100 Mbps

Action: Use a legal value for SPEED. Default: Auto.

OCE3XODI-OS/2 Invalid DUPLEX keyword in NET.CFG.

Values supported:

AUTO - Automatic media detector

FULL - Force Full duplex

HALF - Force Half duplex

Action: Use a legal value for DUPLEX. Default: AUTO

B.5 NetWare Server ODI Driver

The OCE3XODI.LAN and OCE3X311 LAN drivers may generate the following error messages.

OCE3XODI-NW-50 Adapter not found.

Check that the OC-2335 is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-NW-51 Unable to determine interrupt level.

Check that the OC-2335 is properly inserted. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-NW-52 Unable to locate configuration.

Should never occur. Contact place of purchase.

OCE3XODI-NW-53 Adapter must be inserted in a 16 bit slot.

Move your adapter to a 16 bit slot.

OCE3XODI-NW-57 Adapter failed Built In Self Test.

Should never occur. Contact your place of purchase.

OCE3XODI-NW-58 Error accessing EEPROM on adapter.

The driver has located the OC-2335 adapter in the system but cannot access its EEPROM. Check that the adapter is properly inserted. If this does not solve the problem, check that all software components are properly installed. Then run the DIAG program.
Contact your place of purchase if the error condition persists.

OCE3XODI-NW-59 The Media could not be selected.

The media type selected with DIAG or via keywords cannot be selected. Remove any keywords from the NET.CFG file and try again. If this does not solve the problem, then run the DIAG program.

OCE3XODI-NW-60 The Media could not be AUTO detected.

The media could not be automatically detected. Check that the cable is properly attached. Then run the DIAG program.

Cable seems to be disconnected.

Action: Ensure that the network cable is properly inserted in the adapter and attached to the network

Cable disconnect resolved - Detected xx Mbps, yy duplex where xx = 10 or 100 and yy is "full", "half" or "half (unresolved)".

Action: If the message says "half (unresolved)" duplex, the adapter was not able to resolve the duplex abilities of its link partner (hub or switch) and half duplex will be used. If full duplex operation is wanted, you must use the "DUPLEX=FULL" keyword when loading the OCE3XODI.LAN driver.

Error: Value for SPEED is invalid.

Values supported:

AUTO - Automatic network speed detection

10 - Force 10 Mbps

100 - Force 100 Mbps

Action: Use a legal value for SPEED. Default: AUTO.

Error: Value for DUPLEX is invalid.

Values supported:

AUTO - Automatic media detection

FULL - Force full duplex

HALF - Force half duplex

Action: Use a legal value for DUPLEX. Default: AUTO.

B.6 Diagnostics Error Messages

If errors are detected, make sure that:

- The cabling matches the current test mode
- The cabling is properly connected
- The connectors are free of physical damage
- The adapter speed matches the network speed
- No resource conflicts present (I/O address range, interrupt level, etc.)

► **Note:** Running the test on a heavily-loaded network may cause the Transmit/Receive test to report errors.

Whenever an error is detected by the diagnostics program, an error message is displayed on the screen. These messages are self-explanatory, meaning that next to the error message you will find a more detailed description *and* suggestions to solving the error condition. For this reason you will not find diagnostics error messages and suggested actions in this publication.



Appendix C. Abbreviations

AUI	Attachment Unit Interface
BIA	Burned-in Address
BIOS	Basic Input Output System
BNC	Bayonet-Neill-Concelman
CPU	Central Processing Unit
DLC	Data Link Control
DMA	Direct Memory Access
DMI	Desktop Management Interface
DOS	Disk Operating System
EEPROM	Electrically Erasable Programable Read-Only Memory
EISA	Extended Industry Standard Architecture
ISA	Industry-Standard Architecture
LAN	Local Area Network
LAPS	LAN Adapter Protocol Support
LED	Light Emiting Diode
MAC	Media Access Control
MCA	Micro Channel Architecture
NDIS	Network Driver Interface Specification
NetBIOS	Network Basic Input Output System.
NIC	Network Interface Card (= Adapter)
NOS	Network Operating System
NT	New Technology
NWay	Speed detection protocol
ODI	Open Data-Link Interface
OS/2	Operating System /2
PCI	Peripheral Component Interconnect
PnP	Plug and Play
PROM	Programable Read Only Memory

RAM	Random Access Memory
RPL	Remote Program Load
VLM	Virtual Loadable Module



Appendix D. Technical Information

Controller: National Semiconductor DP83800
Media connector: 8-pin RJ-45 for UTP with on-board media filter

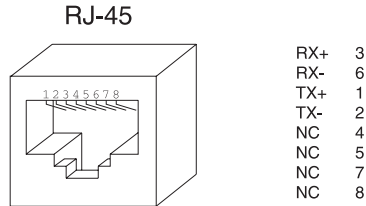


Figure 8. RJ-45 Connector Configuration

Power requirements: 5.5 Watts @ +5 Volt DC

Operating temperature: +10°C to +40°C

Humidity (relative): 8% to 80% non-condensing

Size: 162 x 88 mm (6.4" x 3.5")

On-board memory: 8 Kbyte

Network Interface: 10Base-T
100Base-TX

Certification: FCC Part 15, subpart B, Class B
EN 50082-1/1992
EN 55022/1987 Class B (CISPR 22, Class B)
EN 60825-1
EN 60950 incl. amendments

I/O window: 32 bytes

Data Path Width: 16 bit

Data Transfer: PIO

I/O Address 200h - 21Fh, 240h - 25Fh,
280h - 29Fh, 2C0h - 2DFh,
300h - 31Fh, 340h - 35Fh,
380h - 39Fh, 3C0h - 3DFh.

Interrupt Level: 2, 3, 4, 5, 10, 11, 12 or 15

LED Indicators: Dark green "100" LED: ON/OFF = 100/10 Mbps
Light green "LINK" LED: ON = Link
Yellow "ACTIVITY" LED: Flashing = Receiving

Status LEDs

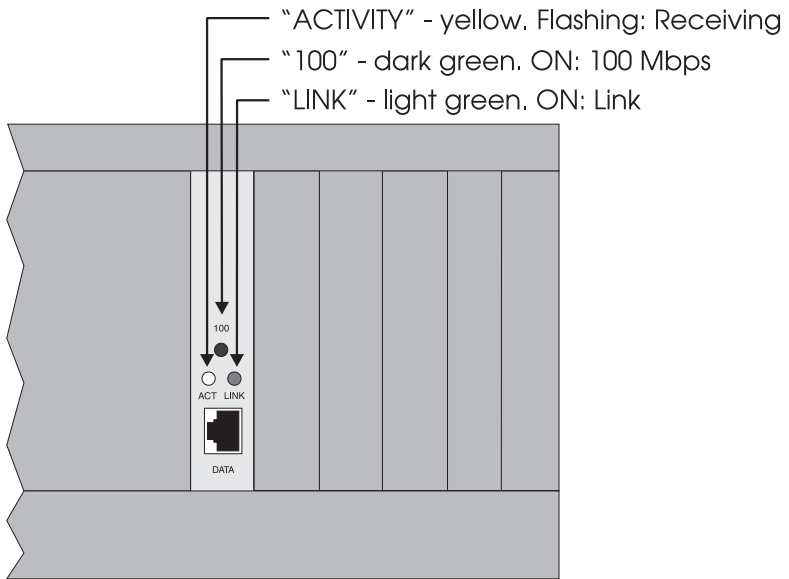


Figure 9. Status LEDs



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