

Help Contents v6.2.1

It is highly recommended that you read the sections marked with the symbol before using the MTL.

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If you are new to Windows Help then note the following:

Click on underlined green text to bring up information on that subject.

Click on items in pictures (such as the Micro House logo above) to also bring up information.

Commonly Overlooked Features

The following information is provided to inform you of features that should be noted for optimum results from the MTL. Please read these sections carefully before using the MTL.

Accessing Drivers

To determine if a product has drivers in the MTL, look in the <u>Hit List</u> for a diskette symbol next to the component make & model. If a component has the symbol, select the component with one click of the mouse, and then select the drivers button. You will be presented with the <u>Drivers & Software</u> selection window which allows you to extract single files or the entire diskette(s).

Low Memory Edition

There are *low memory* and *standard memory* editions of the MTL. The standard memory edition is the default version installed. The low memory edition does not use bitmaps and other graphics in the interface, but does get the job done using far less system memory. Try this edition if your system has less than 4MB or runs slowly while using the MTL.

Change the memory edition by running the setup program or by modifying the MH.INI file that is in your Windows directory with a text editor (such as notepad or winpad) and edit the line:

BITMAPS=1 (one) for the standard edition (default). **BITMAPS=0** (zero) for the low memory edition.

Wild Card Searches

You can enter the wild card character * when in criteria searches. For example, entering in **S*** for the **MAKE** in a hard drive criteria search would pull up all companies that start with the letter **S**.

Context-Sensitive Help

Context-sensitive help is available. Press the **F1** key and a Help window that relates to the section you are in will pop up.

Automatic Button Help

Move the cursor to a button and leave it there for 1 or more seconds. A message will pop-up describing that button. To change the time that it takes for the messages to appear edit the following entry in the MH.INI file that is in your Windows directory with a text editor (such as notepad or winpad):

ButtonHelpTime= 2000 (1000 for each second, 0 disables).

Info Button Options

Some diagrams contain information for more than one model. This is because the diagrams represent multiple models that have the same exact jumper settings. If this is the case, clicking on on the <u>Toolbar</u> will bring up the specs for the *first* model represented. To get to the next and previous models use the controls at the right of the information window (above the *about* button).

Virtual Memory Helps

The MTL is very memory intensive. To ensure the best results, your system should have the Windows virtual memory feature enabled. To check to see if your system is taking advantage of this feature, open the *Control Panel*, click on *386 Enhanced*, and then click on *Virtual Memory*. To change the settings, click on *Change*. It is also recommended that the system running the MTL have at least 8MB of memory.

Jumperless Controllers (No Diagrams)

There are several controller cards (both network and hard drive) that contain no user configurable jumper

settings. Micro House does not diagram these controllers, so choosing one of these from the <u>Hit List</u> will not bring up a diagram. You will, however, be presented with the item's complete specifications (as if you had chosen the **II** Button).

Missing Hard Drive Jumper Settings

You may notice that there are no documents for a number of hard drives. The reason for this is that we have listings for some drives going back to 1984 and are unable to obtain jumper settings on these older drives. You can click on the I button on the Hit List window to display the complete parameters on these drives, but double clicking on the drive entry will not bring up the diagram. If you have jumper settings on any of these missing drives, please fax them to us at 303-443-3323, other MTL users would greatly appreciate it!

IDE Identify Notes

The IDE Identify feature only works with IDE-type hard drives. Please note that Windows 32-bit disk access **must be disabled**. If your hard drive is not an IDE, or 32-bit disk access is enabled, then don't use this feature! Your Windows system will become unstable and you will have to re-boot your computer.

In rare situations, the IDE Drive Inquiry may cause a network fault. To avoid this problem when the MTL is installed to a network, the .INI will default to hiding the IDE Drive Inquiry feature. You may enable the feature on networks by altering the .INI, but you do so at a slight risk of temporary system lock-up.

DisableIDEIdentify=TRUE / FALSE

Country Selection

You can select which countries to view in the company locator section. The * character can be entered to view all countries. The country and company that you were last viewing is saved in the MH.INI file.

Main Board Bus Type Selection

You can now select not only the number of bus slots a main board has, but also if it has *any* of the specified bus types. The check box to the right of each bus type selects this.

Help Button in the About Box

A help button has been added to the About Box. You can still also use F1 at any time to pull up help.

Drivers button in Info Boxes (NICS, I/O, and HD Controllers)

A new drivers button has been added to the NIC, I/O Card, and HD Controller <u>Info Boxes</u>. You can still select drivers from the Hit List.

HP4 Printer Problems

Some customers experience problems when printing to HP4 printers or printers that emulate them. These problems usually disappear when the latest drivers are used. Recent drivers for the HP LJ4 are included on the CD in the \DRIVERS\HP directory. If this does not work then try setting your HP printer driver to the raster setting.

Information Request Forms

The <u>Information Request Forms</u> section provides forms to be filled out and submitted for equipment that does not appear in the MTL.

Educational Bundle

The educational bundle version of the MTL does not come with a manual. The information in this help file contains the entire content of the manual and more. All references to a manual should be directed to this help file.

Big Red Self Test

The educational bundle version of the MTL now includes the Big Red Self Test for Service and Support. An icon is added to the MTL program group at installation time and can be run from there. If you want to

| simply run it from the CD then change to the \SELFTEST directory and run BIGRED.EXE from within Windows. |
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New This Update

The following information is new to the MTL this update. Please read this section and <u>Commonly</u> <u>Overlooked Features</u> carefully before using the MTL.

Toll Free Support Line

A new toll free support line has been implemented for <u>subscribers</u>! If you <u>subscribe</u> to the update service then you have access to unlimited toll free support at. If you dont subscribe, you should! <u>Look here</u> for information on this great service.

Operating System Port Drivers

The CD-ROM now has a new subdirectory, SYSDRVR. It is located in the KEY directory. The SYSDRVR directory contains "Port Drivers" for several operating systems. These drivers allow programs to more easily locate the NetSentinel hardware key. For more information, see the Networks and the Key

Manufacturers Database

- 1) The Country field has been eliminated and replaced with the Office field. The Office field will list all the separate offices for a given company in alphabetical order. If there is more than one company office in a given country, the country name will be listed as many times as there are offices there.
- 2) The default country may be changed by editing the MH.INI files DefaultCountry setting as follows (France is used in this particular example):

[MH Library]
DefaultCountry=France

Please not that the name of the country must be spelled to match the spelling used in the MTL.

3) WWW and E-mail addresses have been added.

Criteria Search Changes

1) Information dialogs are now more detailed. Formerly, if a hardware characteristic did not fall into one of the common categories offered on the Criteria Search dialog, it was then encompassed under the general term Other. No further details on the Other characteristic were offered. This additional information is now included in the Information dialog.

Use an Other category in the Criteria Search dialog to produce a <u>Hit List</u>. Highlight a desired entry, then click on the **II** button. The Information dialog will appear. The Other entry will now be replaced with a specific category.

2) CPU clock speed categories in the Main Board section no longer reflect internal or external ratings. All CPU speeds are now assumed to be the internal speed rating in MHz.

Help Balloons

Help Balloons now pop up only within the boundaries of the MTL dialogs in order to avoid conflicts with other windows in Windows NT or Windows 95.

Downloading Drivers

When downloading drivers into a single directory, the MTL will warn if a file is about to be overwritten and allow the file's name to be changed.

Reference Chapters

Encyclopedia Reference Documents are now in Windows Help File format. Key Word searches no

longer cover these documents. Reference chapters may be searched using the Windows Help engine.

Micro House on the WWW

Micro House International now has a World Wide Web site at http//www.microhouse.com. Frequently asked questions, interesting information, product news, and other information can be found. Services for <u>subscribers</u> are not yet on-line but are being constructed and will be available soon!

New Window Option: Load Document

A new load document option has been added to the main MTL window. This will allow you to load documents that you download from our BBS, FTP Site, and WWW Sites.

Revised Clear Button

The Clear button is now disabled when the Criteria Search is empty (no options selected). If you enter some criteria, and then wish to clear all criteria so that they are all at their default of *, you can then select the Clear button.

Click Here for New Information on Using the MTL on a Novell Network.

Specifically, the following topics are covered:

- 1) Running the Micro House Technical Library on an Windows 95 Client with a Novell Server
- 2) Difficulty locating the hardware key with high speed computers

See the Help Contents (Index) for the complete help menu.

Information Request Forms

If you can not locate information for specific hardware in the MTL, you may request the information from the Micro House Department of Research. Print out the appropriate form, fill it in, and submit it by faxing the sheet to (303) 443-3323, calling (with all the information in front of you) (303) 443-3389, or mailing the form to:

Attn.: OEM Research Micro House International, Inc. 2477 55th Street, Suite 101 Boulder Colorado 80301

(Note: Electronic versions of the forms are available on our WWW Site in the Subscriber area at http://www.microhouse.com/MTL/mtlvip.htm)

We will use our resources to try to obtain the information for you and include it on the next version of the MTL. We often have data on hand that we received after the last release, so we may already have your information on hand. Subscribers may call our toll free support line.

If you have information that is not in the MTL, please submit it to us so that we can make it available to you and other customers on the next release.

Hard Drive Information Request Form
HD Controller Card Information Request Form
Main Board Information Request Form
Network Interface Card Information Request Form
Various Cards Information Request Form

Hard Drive Information Request Form Please complete as thoroughly as possible and fax to (303) 443-3323.

> To: Micro House Research Department

| Your Name: |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Your Company: |
| Your Voice Number: |
| Your Fax Number: |
| Information Requested:Jumpers Specifications Other |
| Make: |
| Model: |
| Usually the correct Make & Model is sufficient for us to get information on Hard Drives. If you are not able to supply the correct Make & Model, you should fill out as much of the following as possible to aid in trying to determine the Make & Model of the drive. Any even remotely helpful information including name and/or number of companies who may OEM, be |
| the parent company of, or themselves manufacture the hardware in question: |
| Interface: |
| Capacity: |
| Physical Dimensions: |
| From what machine: |
| Labeling of the Jumpers: |
| Other markings on the drive: |

If you feel that it would help, draw a rough diagram of the drive showing location & labeling of jumpers, interface, & power:

HD Controller Information Request Form

Please complete as thoroughly as possible and fax to (303) 443-3323.

> To: Micro House Research Department Your Name: Your Company: Your Voice Number: Your Fax Number: Information Requested: Jumpers Specifications Other. . . Make: Model: Usually the correct Make & Model is sufficient for us to get information on Controller Cards. If you are not able to supply the correct Make & Model, you should fill out as much of the following as possible to aid in trying to determine the Make & Model of the card. Any even remotely helpful information including name and/or number of companies who may OEM, be the parent company of, or themselves manufacture the hardware in question: Interface: ___ST506-412 ___ESDI ___SCSI ___IDE ___Other. . . Bus: __XT __ISA __EISA __VESA __Other. . I/O Support (indicate all that apply):

If you feel that it would help, draw a rough diagram of the controller showing location & labeling of jumpers, interface, & other components:

___Floppy ___Hard ___Drive(s) ___Serial ___Parallel ___Other(s). . .

Main Board Information Request Form

Please complete as thoroughly as possible and fax to (303) 443-3323.

> To: Micro House Research Department

| Your Name: Your Company: Your Voice Number: Your Fax Number: | | | | |
|-----------------------------------------------------------------------|---------|----------------|-------|--|
| Information Requested: | Jumpers | Specifications | Other | |
| Make: Model: | | | | |

Any even remotely helpful information including name and/or number of companies who may OEM, be the parent company of, or themselves manufacture the hardware in question:

Network Card Information Request Form

Please complete as thoroughly as possible and fax to (303) 443-3323.

> To: Micro House Research Department

| Your Name: | | | | |
|------------------------|---------|----------------|-------|--|
| Your Company: | | | | |
| Your Voice Number: | | | | |
| Your Fax Number: | | | | |
| Information Requested: | Jumpers | Specifications | Other | |
| Make: | | | | |
| Model: | | | | |

Any even remotely helpful information including name and/or number of companies who may OEM, be the parent company of, or themselves manufacture the hardware in question:

Various Card Information Request Form

Please complete as thoroughly as possible and fax to (303) 443-3323.

> To: Micro House Research Department

| Your Name: | | | | |
|------------------------|---------|----------------|-------|--|
| Your Company: | | | | |
| Your Voice Number: | | | | |
| Your Fax Number: | | | | |
| Information Requested: | Jumpers | Specifications | Other | |
| Make: | | | | |
| Model: | | | | |

The Make & Model may not be sufficient for us to get information on Other I/O Cards. You should provide as much information as possible to have the best chance at acquiring the desired information on the card.

Any even remotely helpful information including name and/or number of companies who may OEM, be the parent company of, or themselves manufacture the hardware in question:

If you feel that it would help, draw a rough diagram of the controller showing location & labeling of jumpers, interface, & other components:

Troubleshooting

Following are some hints and solutions for many problems commonly experienced when attempting to use the MTL.

- Common Key Problems
- Application Errors
- "Call to Undefined Dynalink" Message
- Font Display Problems
- HP LaserJet 4 Print Problems
- Installation program hangs while searching for the CD
- "Invalid SearchIndexPath..." Message
- Non-English Versions of Windows
- "Unable to Load Borland Controls" Message

Still having problems? Call the MTL support line at 303-443-3389.

Application Errors

If you get any application errors, Window errors, or any other messages while running the MTL, try to replicate the error, that is, identify the sequence of steps that will reliably cause the error. Remember that for any Windows error, most programs will continue to get errors until you restart the machine.

HP LaserJet 4 Print Problems

HP Laserjet 4 printing problems? Install the latest drivers for the HP Laserjet 4. They are available on the CD in the DRIVERS/HP directory. Any updates are also available from our BBS at (303) 443-9957. The file name is L4WIN3.ZIP. Additionally, configuring your HP driver to the raster setting usually clears up printing problems.

Font Display Problems
Font display problems? Ensure that True Type Fonts are enabled in your Control Panel/Fonts section.
Also, ensure that no MHFonts are installed in your Control Panel when the MTL is not running. The MTL automatically loads and unloads the MHFonts it needs.

Non-English Versions of Windows

Non-English versions of Windows will look for the language specific version of the file BWCC.DLL. For example: BWCCESP.DLL is the Spanish version of BWCC.DLL. Micro House does not currently have non-English versions of BWCC.DLL. If you do not have a version of BWCC.DLL in your language, you should copy BWCC.DLL (which **is** provided with the software) and re-name it to the filename that your version of Windows is looking for.

Installation program hangs while searching for the CD

If the Installation program hangs while searching for the CD, reboot the machine and call up the directory of the CD from DOS (DIR command). If the CD is inaccessible from DOS, then you will need to resolve this problem first (check the MSCDEX entry in your AUTOEXEC.BAT file for proper configuration).

"Unable to Load Borland Controls" Message

During the installation of the MTL, the program halts with the error message "Unable to Load Borland Controls".

The MTL installation routine attempts to copy BWCC.DLL to the hard drive. If a previous version is on the hard drive, it may cause this problem.

Search the hard drive for copies of BWCC.DLL. If copies are found, remove or temporarily rename them. Run the installation to completion. Rename any temporary file(s) back to BWCC.DLL

"Call to Undefined Dynalink" Message

Attempting to run the MTL causes an Application Error "Call to Undefined Dynalink"

This is caused when two or more windows applications use different versions of the same DLL file. When an application is run, it attempts to load it's DLL into memory. If one version of a DLL is already in memory, an application cannot load a different version of the same DLL.

Determine which applications are attempting to load the same DLL. Do not run both applications simultaneously.

"Invalid SearchIndexPath..." Message

Running the MTL gives an "Invalid SearchIndexPath..." error message.

This is usually caused by running the MH executable from one release with a CD ROM platter from a different quarterly release. The executable portion of the MTL (MH.EXE) is frequently being updated or enhanced. Thus, it must be re-installed with each quarterly update.

Run INSTALL.EXE from the update diskette provided with each new CD ROM.



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About the MTL

The Micro House Technical Library (MTL) is arranged into four major categories:

Main Boards

Diagrams and documentation covering almost 4,000 different main boards with jumper settings, memory configurations, cache configurations, miscellaneous jumper configurations, connection, and component locations.

Hard Drives and Hard Drive Controllers

Diagrams and documentation for hundreds of hard drives and controller cards covering jumper settings, performance specifications, and component locations. Also included are complete parameters (CMOS) and specifications on over 3,000 hard drives including capacity (formatted megabytes), physical (and logical where appropriate) number of heads, cylinders, sectors per track, seek times, form factor (size), height, interface type, encoding, landing zone (parking cylinder), write precompensation cylinder, reduced write current cylinder, and MTBF. The printed version is a two volume three ring bound set that is updated quarterly.

Network Interface Cards

Diagrams and documentation covering over 1,000 network interface cards with jumper settings and specifications.

I/O Cards

Diagrams and documentation covering over 1,000 I/O adapters such as video, serial, parallel, sound, and modem cards.

Also by Micro House:



Professional Hard Drive Setup Software



The 60 Second IDE Installation Software.

Click on a logo to find out more about that item.

Call Micro House or check out our World Wide Web site at http://www.microhouse.com for more information on these and other Micro House products.

Using the Key

The hardware key is not required for merely running the installation software INSTALL.EXE and SETUP.EXE, but it must be present for the MTL to be run.

For stand-alone versions, the key must be installed on a printer port (port 1,2 or 3) on the computer system where the MTL will be run. (For network versions of the MTL, see the <u>Networks and the Key</u> section.) A printer *may* be attached to the other side of the key. **The key must not be attached to an external SCSI port!**

If the computer is close to a wall or other obstacle, you can attach an extension cable to the port, then attach the key to the cable. Use a straight-through DB-25 male-to-DB-25 female cable.

Also see these sections. . .

When the Key is Not Required

Networks and the Key

Common Key Problems

When the Key is Not Required

- If you have purchased *only* The Encyclopedia of Network Cards stand-alone version and no other books in your MTL, then a key is not included or required.
- The INSTALL and SETUP programs do not require the key to be installed.

Note that all stand-alone versions can not be accessed across a network, even if there is only one workstation accessing it. You must purchase a single-user network version if this is desired.

Networks and the Key

The following information only applies if you own the network version of the MTL. The stand-alone and educational bundle versions do not allow access through a network.

Locate your network in the NETWORK column and then load the specified program. Only load the .EXE program onto **one** workstation (the one with the key attached), not all. *If you have purchased a standalone (non-network) version then* **none** *of these programs need to be loaded.* If you have problems getting the software to detect the key, please see the <u>Common Key Problems</u> section.

NETWORK
Novell NetWare 2.15 or 2.2
PROGRAM
NSRVDI.EXE

Novell NetWare 3.1x or 4.x NSRVNI.NLM (See note 1)

Microsoft LanManager NSRVDN.EXE

Microsoft Windows for Workgroups NSRVDN.EXE (See note 2)
Microsoft Windows NT NSRVGX.EXE (See note 3)

Banyan Vines NSRVDN.EXE
All other NETBIOS networks NSRVDN.EXE

Click <u>here</u> for specific information on setting up a Windows NT Key Server. Click <u>here</u> for specific information on setting up a Windows 95 Key Server.

Note 1: The NSRVNI.NLM is loaded onto the NetWare 3.1x or 4.x file server. You may alternatively load NSRVDI.EXE on a workstation that is running NetWare 3.1x or 4.x instead of loading the NLM onto the file server. You may want to do this if you do not wish to install the key on the server, resources on the workstation will be dedicated to the key and that station must be active whenever anyone else wishes to use the MTL.

Note 2: <u>Windows for Workgroups</u> requires the following statement in the AUTOEXEC.BAT file of the computer with the key **before** loading NSRVDN.EXE: <u>NET START NETBEUI</u>

Note 3: Further details on Windows NT key problems, click here

Note 4: Further details can be found in the DOC files that are in the \KEY subdirectory on theCD and also in the <u>Common Key Problems</u> and <u>Network Specific Problems</u> sections.

Windows NT Key Server Setup

The KEY directory contains NSRVGX.EXE, the latest driver for accessing the NetSentinel key on a file server running Windows NT or Windows 95. The NSRVGX.EXE file replaces the file of the same name in the KEY directory of the CD-ROM.

To set up an NT Workstation or File Server as a key server:

- 1) Install the Windows NT Port Driver from the KEY\SYSDRVR directory of the CD-ROM. This provides a way for a computer running NT to access the NetSentinel key plugged into its parallel port.
- 2) Load the NSRVGX.EXE program on the NT Workstation or File Server. Use the file in the KEY subdirectory of the MTL. NSRVGX.EXE must use the NetBEUI protocol. Other protocols will be supported in the future. If the NetBEUI protocol isn't installed, install it using the Control Panel. Create an Icon for NSRVGX.EXE in the Startup program group in Program Manager. This makes sure that NSRVGX.EXE is loaded every time the computer is booted. While loading, NSRVGX.EXE may take about a minute to find the key. Once NSRVGX.EXE has successfully loaded, there will be a NetSentinel icon at the bottom of the screen. Double-click on the icon and check the protocol that is being used. The NetBIOS/NETBEUI protocol should be listed. If not, there is an error in the system configuration. Check the documentation that is included in the KEY\SYSDRVR and KEY\SYSDRVR\WIN_NT directories on the CD-ROM.
- 3) Set the default protocol on the workstation to NetBEUI protocol. On the workstation, go into network settings under the Control Panel. (Control Panel is found under Settings under the Start button.) Double-click on NetBEUI in the list of installed network components and under Advanced Properties. Set it to be the default protocol.

Reboot the computer for the change to take effect.

Windows 95 Key Server Setup

The KEY directory contains NSRVGX.EXE, the driver for accessing the key on a file server running Windows NT or Windows 95. If you are using an older version, then replace it with this one.

To set up a Windows 95 Workstation or File Server as a key server:

1) Plug the NetSentinel key into a parallel port on the computer.

NSRVGX.EXE must use the NetBEUI protocol. Other protocols will be supported in the future. If the NetBEUI protocol isn't installed, install it using the Control Panel.

2) Test the NetSentinel Key

Run the NSRVGX.EXE program. It may take a minute to load. If the time it takes to load is prohibitive, consider designating another computer as a NetSentinel key server. NSRVGX.EXE will slow down the key server while HSRVGX searches for the key, but the key server's performance after NSRVGX loads will be unaffected.

- 3) Install the NSRVGX.EXE program on the Windows 95 workstation or file server so that it loads every time the computer boots.
- A) Run the Register Editor by clicking on the Start button, selecting Run, and typing REGEDIT followed by Enter.
 - B) Double-click on HKEY LOCAL MACHINE to expand it.
 - C) Double-click on SOFTWARE to expand it.
 - D) Double-click on Microsoft to expand it.
 - E) Double-click on Windows to expand it.
 - F) Double-click on CurrentVersion to expand it.
 - G) Double-click on Windows to expand it.
 - H) Click once on RunServices to select it.
 - I) From the Edit menu, select Edit/New/String Value.
 - J) Type 'NSRVGX' and press Enter
 - K) Press Enter again to edit the data string.
- L) Type the path and name of the NSRVGX.EXE file. For Example: C:\LIBRARY\KEY\ NSRVGX.EXE
 - M) Select 'OK' to store the string.
 - N) Close the Register Editor.
 - O) Reboot the computer.

NSRVGX may take a minute to load. NSRVGX can be removed by following the above process and selecting NSRVGX and pressing the delete key. Once NSRVGX.EXE has successfully loaded, there will be a NetSentinel icon at the bottom of the screen. Double-click on the icon and check the protocol that is being used. The NetBIOS/NETBEUI protocol should be listed. If not, there is an error in the system configuration. Check the documentation that is included in the KEY\SYSDRVR and KEY\SYSDRVR\WIN_NT directories on the CD-ROM.

4) Set NetBEUI to be the default protocol on the MTL workstation.

On workstations that need to access the NetSentinel key, go into network settings under the Control Panel. (Control Panel is found under Settings under the Start button.) Double-click on NetBEUI in the list of installed network components and under Advanced Properties. Set it to be the default protocol.

Reboot the workstation for the change to take effect.

Common Key Problems

Please see the <u>Network Specific Problems</u> section for additional information regarding network installations.

- Is the key attached to a parallel printer port?

 Make absolutely sure that it is not attached to some other type of 25-pin port that looks similar.
- Are you using a multi-I/O card that supports IDE drives?

 Some cards (especially those with a Winbond chip on them) generate too much interference. The key should be installed on a parallel-port-only card. (It may be possible to dissipate the noise by attaching 6 feet of cable to the printer port and attaching the key to the cable.)
- Are there any other devices connected to the parallel port?

 If so, try accessing the key without the devices present to determine if it is they that are causing the conflict. Attaching a SCSI device or Lap-Link to the key may damage the key.
- Connect a printer to the key and try printing to the printer from another program to see if the port is active and the card is functioning. Try detecting the key with the printer disconnected and with it connected, with the printer turned on and with the printer turned off.
- Are you using a Micro-Channel computer? Make sure that parallel port DMA is disabled.
- You need at least 4MB of memory available, the more available, the smoother and more quickly the program will run.
- Make sure you are running Windows in Enhanced mode (Help, About Program Manager). The MTL will only run in Enhanced mode.
- Pocket LAN adapters will not work with the key.
- I have a device hooked to the printer port that will not allow the key to be installed. You will need to install another parallel port for the key. The PC can have up to 3 such ports. Call Micro House if you can not locate a source for a second or third parallel port card.
- I need to use my printer on the same port as the key. A printer can be plugged in to the end of the key.
- I have another software package that uses a key.

 The key for the MTL should be compatible with your existing key. Plug in your existing key and then plug the MTL key in to it. You can then plug a printer to the MTL key.

 If either of the software packages fails to work then the keys are not compatible. You will have to remove your existing key and plug in only the MTL key while using the MTL, or use a different parallel port address.
- Because the key uses the IBM printer adapter as the design model for its hardware interface, it is compatible with the wide range of hardware adhering to the IBM standard for parallel interfaces. However, not all computers or other hardware properly implement this standard. For example, some computer printer ports do not provide pull-up resistors to power the key. This is especially true with some laptop computers. In such a case, a printer plugged in and on will draw enough current for the key to be activated. Because the problems experienced with these systems are caused by use of a non-standard IBM parallel port, they can usually be corrected by replacing the parallel port with a truly IBM-compatible parallel port, or by adding a second printer adapter card exclusively for the card.

If all else fails, disable as much software as you can that still allows your machine to function. You may wish to boot from floppy to avoid having to alter your configuration files. Remove any nonessential hardware, especially anything that has to do with the parallel port and the card on which it is implemented. Ideally remove any cards that have parallel ports on them and install the key onto a card that is parallel port only. The key should be able to be detected in this simplest of scenarios.

Still having problems? Call the toll free MTL support line at 800-222-5916.

Network Specific Problems

Check these sections for your specific problem.

Key Not Found under NetWare

Key Not Found under Windows 95

Key Not Found under WFW 3.11

Key Not Found WFW 3.11 in conjunction with Novell 3.11

Key Not Found running under Novell Netware Lite 1.0

Key Not Found when using I/O Cards with Winbond chip

Key Not Found running PowerLan network software

Key Not Found after running LapLink

Key Not Found under Windows NT

Key Not Found under NetWare

If you are using Novell, ensure that the NETX is at least version 3.26 (NETX /?) and IPX is 3.1 (or IPX/ODI version 1.2) or greater. There is a utility in the \KEY directory on the CD called IXSTAT3 that returns information about your workstation that will also show you what shell versions you are running. If they are not the correct versions you can get them from the \DRIVERS\NETWARE directory on the CD.

Are you using a product called "Map Assist" to attach the CD drive to the net? That program does not always work with our product.

The NLM may appear to be stuck or locked-up after it is loaded. Try pressing ALT-ESC to switch back to the console screen. The key NLM will continue to run. If you want to unload it type UNLOAD NSRVNI35 Occasionally loading the NLM will crash the entire network. Most often this is cause by a conflict with another NLM. Try loading the key NLM first. If the problem persists, load the key NLM first and the others one at a time to determine which one is causing the conflict. If you cannot get the NLM to load properly, you probably ought to load the TSR from a workstation where the key is attached. Another possibility is that a BIOS is conflicting with the NLM. Specifically, a network card with its I/O address set to 0300 will cause the NLM to crash the network when trying to load.

Still having difficulties?

In order for the MTL to find the hardware key when it is attached to a Novell File Server, the NWIPXSPX.DLL file must be in the default Windows or Windows System directory. Use the NWIPXSPX.DLL file that is in the key directory on the MTL CD-ROM if there is not one in the Windows or System directories.

Be sure to select "Client for Netware Networks" in the Network Configuration.

Difficulty locating the hardware key with high speed computers?

Fast computer systems such as those with Pentium processors may have trouble locating the hardware key across a network. Two key-server programs are provided on the diskette (not CD-ROM) that address this problem:

NSRVDI.EXE NSRVNI.NLM

NSRVDI.EXE is a DOS based program which broadcasts hardware key information across a network.

NSRVNI.NLM is a Netware Loadable Module which broadcasts hardware key information across a network.

These can be used in place of the programs of the same name that are on the MTL CD-ROM. Please consult the user manual for instructions on how to load these programs.

Key Not Found under WFW 3.11

WARNING: DO NOT USE THIS SOLUTION ON NOVELL/WFW COMBINATION NETWORKS. IT WILL DISABLE THE NOVELL ODI DRIVERS. See <u>Key Not Found WFW 3.11 in conjunction with Novell 3.11</u>

At the station where the key is installed (server), run: NET START FULL NSRVDN35.EXE

At other stations (clients), run: NET START

For both server and clients:
Load WFW
Go in to Network Setup
Click on Drivers
You will see a list of net cards and protocols
Click on setup
Under driver type select Real Mode and Enhanced Mode NDIS Driver

Select OK. Workstations NET.CFG (if applicable) and AUTOEXEC.BAT will be updated with the new configuration. Allow WFW to reboot the workstation and the new driver will be used.

Key Not Found under Windows 95

This only applies to Windows 95 clients on a Netware LAN: Ensure the Windows '95 Client has support enabled for both Microsoft and Netware Networks. As well, copy file NWIPXSPX.DLL from the LIBRARY directory to the WINDOWS directory. To verify the network setup:

- Click on START.
- Click on Settings.
- Click on Control Panel.
- Click on Network Icon.
- The text box for Installed Network Components should list:

Client for Netware Networks

■ If one is not listed, add the missing network support.

To add network support:

- Click on Add button.
- Click on Client.
- Add missing network support.

Still having difficulties?

In order for the MTL to find the hardware key when it is attached to a Novell File Server, the NWIPXSPX.DLL file must be in the default Windows or Windows System directory. Use the NWIPXSPX.DLL file that is in the key directory on the MTL CD-ROM if there is not one in the Windows or System directories.

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Key Not Found WFW 3.11 in conjunction with Novell 3.11

Windows for Workgroups installs a proprietary IPX/SPX driver that does not allocate resources properly. On the 16th query of the key, all IPX/SPX resources are exhausted, so the key signature does not reach the MTL program.

Ensure that the NETBEUI and IPX/SPX Compatible Transport drivers are loaded and the IPX/SPX Compatible Transport with NETBIOS is disabled. To verify this Load WFW, and enter Network Setup. The screen example below is the minimum that should appear.

To remove the NETBIOS driver, Click on Driver button, and highlight the IPX/SPX Compatible Transport Driver with NETBIOS that is installed on your system. Click on Remove from the menu on the right. WFW will update all your boot files, your net.cfg, and your protocol.ini. When WFW asks if you would like to restart windows, select yes. The MTL and key will then function normally.

Key Not Found running under Novell Netware Lite 1.0The cause of the problem is NetWare Lite 1.0 which, by default, loads only IPX instead of IPX/SPX.

To correct this problem, modify the STARTNET.BAT files on both client and server by replacing IPXODI /A with IPXODI

Key Not Found when using I/O Cards with Winbond chip

A number of super-I/O and multi-I/O cards on the market use the Winbond chip as a principal component on the card. Although the chip and the cards that use it are able to operate normally driving a printer, they often render the port unusable by Rainbow keys.

The chip, in its implementation, causes erratic transition on the data lines. This presents no problem for printers connected to the port because the lines are stable during those times that the strobe is low. However, for a short interval of time before the strobe goes low, the erratic transitions on the data lines may cause the Rainbow key to be reset without the key driver knowing it. Cards using the chip frequently avoid measures, such as buffering or suppressing noise with caps on the data lines, that would eliminate the consequences of these erratic transitions. Thus, the problem with the chip is inherited by the card, and devices that rely on the port at times other than when the strobe is low are adversely affected by the consequent behavior.

A printer cable attached to the key can act as a capacitor, allowing the key to be detected on the card. A better solution is to install the key on a different parallel port card.

Key Not Found running PowerLan network softwarePowerLan networking software assumes control of the parallel port, causing the key to not be detected.

Use /LOCAL switch with UNSPOOLER.

Key Not Found after running LapLink
We recommend removing the key from the parallel port before using any data transfer software as it may damage the key.

Key Not Found under Windows NT

Windows NT's security features do not allow a program to directly access a computer's parallel ports. The Port Driver in the KEY\SYSDRVR\WIN_NT subdirectory allows the Micro House Technical Library to find and use the NetSentinel key. Under Windows NT, the Port Driver must be used in conjunction with the NSRVGX.EXE program.

The Toolbar

The toolbar is available when viewing a document.



Click on a tool to find out about that tool.

Moving the tool bar to the top or bottom edge of the display window will change the toolbar to optimize desktop space:



Likewise, moving the toolbar to the left or right edge will change the toolbar (not shown here due to the length of this toolbar). The functions of all tools remain the same in all cases.

Note: Not all tools are available in all types of documents. If a tool is unavailable it will be grayed out and disabled.

Tools: Up Arrow Brings up the previous document in the <u>Hit List</u>.

Tools: Down Arrow

Brings up the next document in the <u>Hit List</u>.

Tools: Print

Prints the current document.

Tools: Picture

Brings the document's picture window to the top. If there is more than one picture for the current document, then the next picture is shown each time the button is clicked.

Tools: SearchBrings up the <u>Search Dialog</u>. This allows text search through the *current* document only.

Tools: Top of ListBrings up the document at the top of the <u>Hit List</u>.

Tools: Bottom of List

Brings up the document at the bottom of the $\underline{\text{Hit List}}$.

Tools: Magnify Section

Allows the magnification (enlargement) of a selected picture area (has no effect on text windows). Choose the magnify tool, click and hold down the left mouse button, drag the mouse to the desired size, and then release the mouse button*. The selected section will then be magnified.

*If you click and hold down the right mouse button, the box can be dragged to another area of the diagram. Release the right mouse button to drop the box in its new location.

Tools: DemagnifyDemagnifies (reduces) the current picture window to full size (has no effect on text windows). This is the quickest way to "best fit" the picture to the current window size.

Tools: Detailed Information

Displays detailed information about the component you are viewing.

Some models share a single diagram. This is because the different models have the same exact jumper settings. If this is the case, clicking on on the Toolbar will bring up the specs for the *first* model represented. To get to the next and previous models use the controls at the right of the information window (above the about button).

Tools: Exit

Exits the display window and returns back to the $\underline{\text{Hit List}}$

Tools: Zoom Whole

Scrolling the bar towards the large dot zooms the current window (text or picture) larger, scrolling towards the small dot zooms the window smaller.

Tools: Text

Brings the document's text window to the top.

Hit List

The hit list displays all documents found in the search.

TIP: Fonts too hard to read in the hit list? Increase the number next to the **List=** and **Text=** entries in the MH.INI file.

See <u>Hit List Detail</u> for additional information.

Tools Search DialogThis dialog is displayed after selecting *Search* from the <u>toolbar</u>. Only the document that you are currently viewing will be searched.



Click on a section find out about that section.

Tools Search Dialog: Find Next
This button starts the search at the top of the current document the first time it is pressed Each subsequent press searches for the next occurrence. A <u>Search String</u> must be specified before choosing this option.

Tools Search Dialog: Find PreviousThis button searches up from the current position. A <u>Search String</u> must be specified before choosing this option.

Tools Search Dialog: DoneStops searching and returns to the document.

Tools Search Dialog: Whole WordWhen this option is selected, only whole words will be found. For example: if you were searching for only the word *drives* and did not want the word *drive*, then you would turn Whole Word on.

Tools Search Dialog: Search StringEnter one or more words to search for, each word being separated by a space.

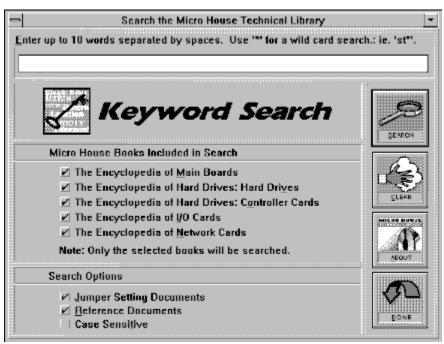
Tools Search Dialog: Case Sensitive
Turns Case Sensitivity on or off. For example, with Case Sensitivity off, *Drive Select* and *drive select* would be considered the same.

Tools Search Dialog: FirstFinds the first occurrence of the string.

Tools Search Dialog: LastFinds the last occurrence of the string.

Dialog MenuClicking on this box allows you to close, move, and minimize the dialog. In most cases, a *Cancel* button is included in the dialog that will also close it.

Key Word Search Tips



Click on a section find out about that section.

- The more words you specify, the longer the duration of the search.
- Try reducing the number of words to search for if no matches can be found.
- Choose only the book(s) that you need information from. The fewer books selected, the quicker the search.
- Reference Documents (Books) are not included in Keyword Searches. Use the Search function in Windows Help to find information in the Books.

Important Note About Other Searches

Several other searches are available that locate jumper setting documents by a set of parameters. Only documents that meet **all** search parameters will be retrieved. For example, if you choose SCSI and IDE in a controller card search the card must have support for *both* SCSI and IDE. It will not find all SCSI and all IDE cards.

Keyword Search: String

Enter up to 10 words to search for, separated by spaces. Only documents containing *every* specified word will be displayed. Try reducing the number of words if your search is not fulfilled.

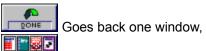
You can enter the wildcard character * when in the keyword search. For example, entering in **ST*** as a keyword would pull up all documents that start with the letters **ST**.

Keyword Search: SearchChoosing this button starts the search.

Keyword Search: ClearChoosing this button clears the key word search list.

Keyword Search: AboutChoosing this button displays the About information box.

Exit Buttons



Goes home (back to the main MTL window).

Keyword Search: Books
Reference documents are in Windows Help File format. Use the Search function in Windows Help to locate information through the index or search engine.
Note: Only books that you have purchased can be selected.

Keyword Search: Options

You can choose to search all sections of the MTL or only the sections that you need information from. The less you select, the quicker the search.

Jumper Setting DocumentsSearches only the documents containing jumper settings.

Case Sensitive

Turns on or off case sensitivity. With case sensitivity off 'Drive Select' and 'drive select' are considered the same.

Keyword Search: Case SensitiveTurns on or off Case Sensitivity. With case sensitivity **off,** 'Drive Select' and 'drive select' are considered the same.

Description of Main Board I/O Options

Many of the main board I/O options (I/O Opt) are abbreviated and difficult to understand. The following is an explanation of those abbreviations.

Encyclopedia of Hard Drives

Listed along the left are 10 buttons for the selection of specific chapters. These chapters provide detailed information on hard drives and related subjects.

If you are searching for **hard drive jumper settings** or **parameters** click on the hard drive icon in the upper right-hand corner.

If you are searching for hard drive **controller card jumper settings** click on the controller card icon.

Encyclopedia of Main Boards

Listed along the left are 16 buttons for the selection of specific chapters in the reference volume. These chapters provide detailed information on main boards and related subjects.

If you are searching for **main board jumper settings** click on the main board icon in the upper right-hand corner.

Network Interface Technical Guide

Listed along the left are 10 buttons for the selection of specific chapters. These chapters provide detailed information on network interface cards and related subjects.

If you are searching for **network card jumper settings** then click on the network card icon in the upper right-hand corner .

The Hit List

The Hit List contains all of the items that matched your search request. To view an item's jumper settings, double click on it. To view brief information on the item (such as specifications) click on it once, then click on the \blacksquare button on the bottom of the window. Select the

button to bring up the Drivers & Software selection window (only available on items marked with a floppy disk icon).

The hit list can be sorted. This is done by left-clicking on one of the button labels at the top of the hit list. For example: to sort by MODEL you would **left**-click on the MODEL label button at the top of the hit list. You can also sort in reverse, simply **right**-click on one of the label buttons.

See <u>Hit List</u> for more information. See the <u>Help Contents (Index)</u> for the complete help menu.

Hard Drive Controller Card Detail

This window displays detailed information about hard drive controller cards. If this window pops-up when you're trying to locate jumper settings for a particular card, then the card either has no jumper settings (such as Micro Channel or EISA), or the Micro House Research Team has not yet documented it.

Hard Drive Detail

This window displays detailed information about a hard drive. Click on the IDE button to view information on IDE drives installed in the **current** system. Click on the BIOS button to view the current system's BIOS drive type table.

If this window pops-up when you're trying to locate jumper settings for a particular drive, then the Micro House Research Team has not yet documented it

Please note: If you are installing an IDE type hard drive, use the **Logical Specifications** given, not the Physical Specifications.

Main Board Detail

This window displays detailed information about main boards. Most of the entries in this window are self-explanatory. See the section titled <u>Description of Main Board I/O Options</u> for an explanation of these.

Network Interface Card Detail

This window displays detailed information about network cards. If this window pops-up when you're trying to locate NIC jumper settings for a particular card then the card either has no jumper settings (such as Micro Channel or EISA) or the Micro House Research Team has not yet documented it.

I/O Card Info Screen

This screen displays descriptive information about the card. It will be displayed if a card is loaded for which there is not a diagram (usually because it is jumperless), or by clicking on the \blacksquare icon from any of various places.

You can use the buttons on this screen to Print the Info, Copy it to Clipboard, or go Back or Home.

Main Selection Window

Click on the book of your choice or select one of the icons on the right.

The **KEY WORD** icon performs a key word search.

The **COMPANIES** icon displays the company locator.

The **ABOUT** icon displays the about box.

The **EXIT** icon exits the program.

Buttons can be selected using the keyboard by holding down ALT + the underlined character in the button. For example, ABOUT would be selected by typing ALT-A.

Hard Drive Controller Card Selection

Specifically for hard drive controller card specification searches, this feature allows the selection of several controller card criteria.

Enter in all of your selections and then click on the search icon to start the search. If you want to bring up every controller card in the MTL then don't make any selections and simply click on the **SEARCH** icon.

You can use the CLEAR icon to erase all search selections so that you can start with a clean slate.

The **ABOUT** icon displays the about box.

See Exit Buttons for an explanation of those.

Hard Drive Criteria Search

The Hard Drive Criteria Search screen is used to define the criteria of the drives that will be included in the <u>Hit List</u>. If you select Search without defining any parameters, each parameter will be left at its default value which is *. The asterisk is a wildcard value and represents any. Under these conditions, all drives documented in the MTL will be included in the <u>Hit List</u>.

Some example criteria searches that may be useful include INTERFACE = IDE* and >500MB which would list all IDE drives larger than 500MB in capacity. Another useful search may be MANUFACTURER = MAXTOR and INTERFACE = IDE which would list all IDE drives manufactured by Maxtor. If you enter some criteria, and then wish to clear all criteria so that they are all at their default of *, you can select the Clear button.

At the bottom of the window is a button to query the current system's BIOS for its drive table. Next to it is a button to perform a drive inquiry on the drive installed in the system. This button may cause a network error in certain isolated situations, so the default for a network installation is disabled. At your risk, you may enable this feature on networks by modifying the MH.INI

Key Word Search

Up to ten key words can be entered into the any text search. All areas of the CD-ROM are searched for the requested key words. A list of all matching documents are then displayed. Enter in up to 10 words separated by spaces and then click on the **SEARCH** icon to start the search. If

you want to bring up all documents in the MTL, then don't enter in any words and simply click on the search icon.

You can use the CLEAR icon to erase all key word selections so that you can start with a clean slate.

The **ABOUT** icon displays the about box.

See Exit Buttons for an explanation of those.

Main Board Selection

Specifically for main board specification searches, this feature allows the selection of several main board criteria.

Enter in all of your selections, then click on the **SEARCH** icon to start the search. If you want to bring up every main board in the MTL, then don't make any selections and simply click on the search icon.

See the section titled <u>Description of Main Board I/O Options</u> for an explanation of the I/O Opt section.

You can use the CLEAR icon to erase all search selections so that you can start with a clean slate.

The **ABOUT** icon displays the About box.

See Exit Buttons for an explanation of those.

Network Card Selection

Specifically for network interface card specification searches, this feature allows the selection of several network card criteria.

Enter in all of your selections, then click on the **SEARCH** icon to start the search. If you want to bring up every network controller card in the MTL, then don't make any selections and simply click on the search icon.

You can use the CLEAR icon to erase all search selections so that you can start with a clean slate.

The **ABOUT** icon displays the About box.

See Exit Buttons for an explanation of those.

I/O Card Selection

This is screen is for the entry of criteria of cards to be included in the <u>Hitlist</u>. If none of the criteria are specified other than *, which represents any, then all cards will be included on the <u>Hitlist</u>. Otherwise, only cards that match the criteria specified will be included. Select the Search button to execute the search.

Besides the Search button there are also Clear, About, Done, and Home.

Drivers & Software

Select the button from the <u>Hit List</u> to bring up the Drivers & Software selection window. This button will not be available if the item does not have drivers associated with it. A quick way to tell if an item has drivers is to look along the leftmost column in the hit list. If a small diskette icon is present, then the item does have drivers.

After entering the Drivers & Software selection window: By clicking on the Create Exact Diskette Image button a duplicate of the diskettes, as they are shipped by the manufacturer, will be created. This is sometimes necessary because the parent programs on these diskettes will look for files in certain locations on the diskette. You must have one or more blank formatted floppies ready; this feature will not format the diskettes for you.

The software in this section has been supplied by the manufacturers and therefore are not covered by the Micro House License Agreement and Limits of Liability. The use of this software is covered by each individual manufacturer's license agreement. Use at your own risk!



DrivePro is the **professional** hard drive installation and maintenance utility for all drive types.

- Includes all of <u>EZ-Drive's</u> features.
- Full featured diagnostic/performance check routines.
- Use IDE, MFM, SCSI, and ESDI drives together.
- Technical specifications on over 2,200 hard drives.
- Identifies drives without opening the computer.
- DOS format any size drive in under 30 seconds.
- Retrieves lost CMOS parameters.
- Full-featured sector editor.
- Plus many other advanced features.

See it in action! The DrivePro demo is located in the \DEMOS directory on your MTL CD. Run DPDEMO.



EZ-Drive is the automatic IDE hard drive installation and enhancement utility.

- One-step installation and setup in under 60 seconds.
- Allows up to four IDE hard drives in the same system.
- Breaks the IDE capacity barrier of 528Mbytes.
- Windows 3.1x 32-bit driver allows large drives to work with Fast Disk.
- Fast ATA and Enhanced IDE compatible.
- Windows '95 compatible.
- Maximum Overdrive feature improves drive performance.
- Detailed jumper settings for all common IDE drives.
- Extensive context-sensitive help.

Subscription Services

Now you have all the information you need to speed diagnosis and repair of PC's...
Except you're missing one thing...

Next

Subscription Services

Introducing the Technical Library Support Service

Get quarterly CD-ROM update. Unlimited Technical and Research Support. Fax-on-Demand and BBS Access, also unlimited.

For one low annual fee.

As a Micro House Technical Library user you know the value of accurate, up-to-date information on PC hardware components. And you know that having it at your fingertips - not buried inside zillions of hardware manuals - saves you both time and money.

You also know that manufacturers are always adding new products to their lineup - and that you're bound to run into them eventually. That's why our OEM Liaison staff is constantly in touch with manufacturers. Our goal is to see that you always have the most complete and accurate technical information at you fingertips - ensuring fast diagnosis and repair of PCs, minimal user downtime, and improved productivity.

In just the last **year** we added complete technical specifications and configuration information on the following:

- 600+ Additional Main Boards
- 180+ additional NIC's
- 400+ Additional hard drives
- 200+ Additional Hard Drive Controllers
- 440+ Additional I/O Cards (video, modem,

serial, parallel, sound, etc.)

■ 580+ Manufacturer's Software Drivers

Next

Subscription Services

Stay current with a quarterly update CD-ROM packed with new information, plus much more!

As a subscriber to the Technical Library Support Service, every 3 months you'll get a newly updated CD-ROM.

On it you'll find the latest technical and configuration information on hard drives, controller cards, main boards, NICs, and peripheral cards, as well as software drivers and complete manufacturer information. You'll also find expanded coverage of outdated and no longer supported products.

And theres more!

In addition to the quarterly CD-ROM update, you'll have access to Micro House research and technical personnel to answer your questions and provide you with needed information between updates. Because we're adding new information to our databases every day, there's always something we may have that could help you do your job better, faster.

And we're here to assist you.

Let's review the features of the Technical Library Support Service. You get...

One full year of updates - a new CD-ROM and programs each

quarter containing the latest information on boards, controllers,

hard drives, NIC's, and I/O cards, plus software drivers.

- Unlimited Technical Support via our toll free number
 - Cant find a product in the MTL? Call!
- 24-hour Fax-on-Request Service
- Access to Micro House services via the World Wide Web
- Access to the special updates section of the Micro House BBS
- One low annual fee
- Access to the Micro House research team

As always, your complete satisfaction is guaranteed.
Order today
and we'll rush the next Technical Library update to your
door.

Call 800-926-8299 to order.

Problem Report Form

This form is provided for you to fill out if you are having difficulties using or installing the MTL. It will help Micro House Technical Support pin-point the source of the problem. Print out the form, fill it in, and submit it by faxing the sheet to (303) 443-3323, calling (with all the information in front of you) (303) 443-3389.

| MTL Problem Report |
|-----------------------------------------------------------------|
| Date: Your Name: Customer Number: Address: City: State: Zip: |
| Phone: Fax: |
| MTL CD Software Ver: MTL CD Quarter: |
| Stand Alone or Network (circle one)?: |
| System Info Windows Ver: Dos Ver: RAM: Network Ver: |
| CD-ROM Error #: |
| Printer Type: |
| Problem Description: |
| |
| fax to Tech Support @ (303) 443-3323 |