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Hot Rod 66 User's Manual

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Section 1: Introduction of Hot Rod 66 Features

The Hot Rod 66 controller provides two IDE hard drive connectors that support Ultra ATA/66 (Also known as Ultra DMA/66). Each IDE connector supports a master/slave combination of any IDE device, including IDE, EIDE and Ultra-ATA standards.

1. Specifications

■ **Chipset:**

- HPT366 Ultra DMA66 IDE Controller

■ **Bus:**

- PCI

■ **Specification:**

- Ultra DMA 66MB/sec operation
- Two independent ATA channels
- 256 Byte FIFO per ATA channel
- Concurrent PIO and bus master access
- Compliant with Plug & Play
- Up to 4 drivers supported

■ **Drive Modes Support:**

- Ultra ATA 4/3/2/1/
- PIO 4/3/2/1/0
- DMA 2/1/0

■ **BIOS support:**

- Auto Identifies and configures drive type
- Auto detects and supports Ultra Mode(ATA/EIDE) transfers
- Recognizes drives up to 128GB

■ **Advanced Data Features:**

- Support new CRC enhanced data protection for Ultra ATA drivers
- Support dual data channels allow separate device timings for Ultra ATA and EIDE devices

■ **Software Support:**

- Microsoft DOS 5.0 or above
- Microsoft Windows® 95/98
- Microsoft Windows® NT4.0

■ **Key Point:**

- High performance up to 66MB/sec
- Easy install
- Support more ATAPI-ready peripherals and compatibility
- More capacity up to 128GB
- Free 2 high speed quality 80-wire/40pin IDE cables
- Transfer rate faster than 2~3 times that of IDE devices
- PCI 2.1 compliance

Table 1-1: Hot Rod 66 specifications

Bus	PCI
Drive Transfer Rate	66MB/sec burst w/Ultra ATA/66 devices
# of Supporting Drives	4
Drive Modes	Ultra DMA mode 4/3/2/1 DMA mode 2/1/0 PIO mode 4/3/2/1/0
Devices	ATAPI
Operating Systems	DOS/ Windwos 3.x, Windows 95/98, Windows NT 4.0
BIOS	1MB Flash ROM
	Auto ID/Configure
	Max. Storage: 128GB
	Supports ACPI function
Hardware	Bus mastering
	Dual data channels (both DMA 33/66)
Utilities	ABIT Vivid Installation

2. Layout Diagram

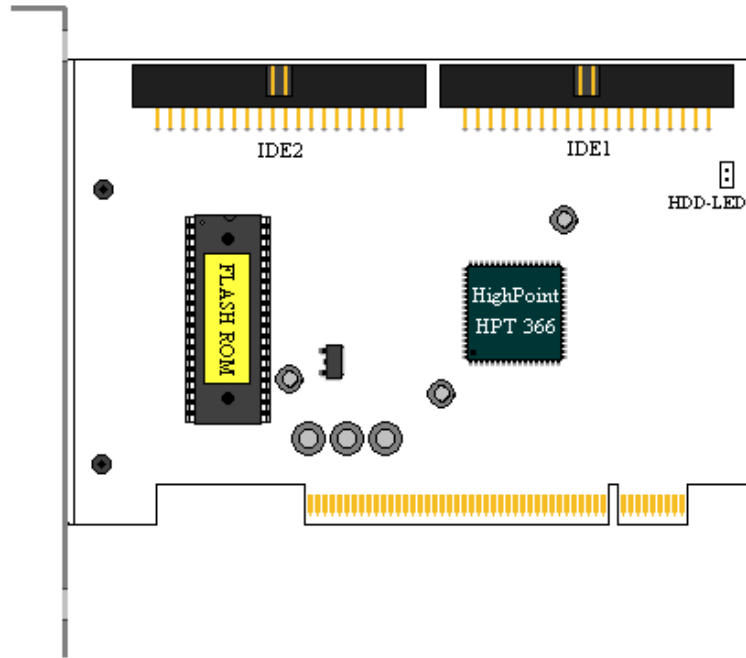


Figure 1-1: Hot Rod 66 controller card component locations

3. Introduction of Ultra ATA/66

Ultra ATA/66 enhances existing Ultra ATA/33 technology by increasing both performance and data integrity. This new high-speed interface doubles the Ultra ATA/33 burst data transfer rate to 66.6 Mbytes/sec. The result is maximum disc performance using the current PCI local bus environment. Figure 2-2 shows you the difference between the Ultra ATA/33 and Ultra ATA/66 Conductor Cable.

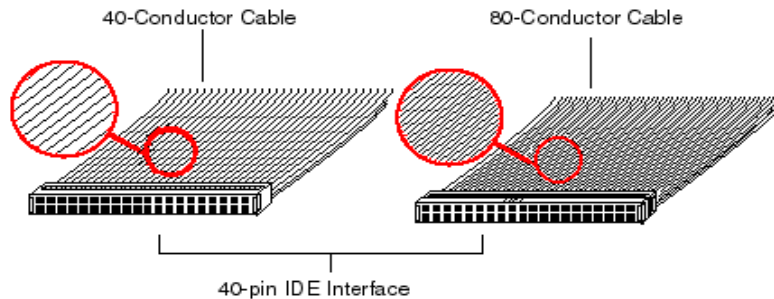


Figure 2-2: The difference between Ultra ATA/33 and Ultra ATA/66 Conductor Cables

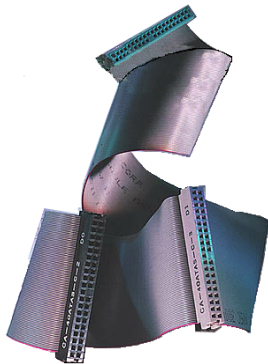


Figure 2-3: Photo of an Ultra ATA/66 Conductor

Figure 2-3 shows you a photo of an Ultra ATA/66 Conductor Cable. An Ultra ATA/66-capable cable is a 40-pin, 80-conductor cable with a black connector on one end, a blue connector on the other end and a gray connector in the middle. In addition, line 34 on the cable should be notched or cut (this may be difficult to see).

Ultra ATA/66 is backwards compatible with all Ultra ATA/33 systems, but it will be limited in its transfer mode to the Ultra ATA/33 (Ultra DMA Mode 2 - 33 Mbytes/sec) or PIO Mode 4 (16.6 Mbytes/sec). Ultra ATA/66 hard drives are 100 percent backward compatible with both Ultra ATA/33 and DMA and with existing ATA (IDE) hard drives, CD-ROM drives, and host systems. The Ultra ATA/66 protocol and commands

are designed to be compatible with existing ATA (IDE) devices and systems. Although a new 40-pin, 80-conductor cable is required for Ultra ATA/66, the chip set pin connector remains the same at 40. Hard drives that support Ultra ATA/66 also support Ultra ATA/33 and legacy ATA (IDE) specifications.

There are four requirements for attaining Ultra ATA/66:

*The drive must support Ultra ATA/66.

- *The motherboard and system BIOS (or an add-in controller) must support Ultra ATA/66.
- *The operating system must support Direct Memory Access (DMA); Microsoft Windows 98 and Windows 95B (OSR2) support DMA.
- *The cable must be 80-conductor; the length should not exceed 18 inches. If all the above requirements are met, you can enjoy the Ultra ATA/66 features of your computer system.

Section 2: Hardware Installation

The Hot Rod 66 is as easy to install as any other computer peripheral. It uses the Plug n Play design concept. First, plug the Hot Rod 66 card into any PCI slot on your motherboard. Second, connect the Ultra DMA 66 devices to its IDE connectors using the included Ultra DMA66 cables.

Installing Hot Rod 66 controller card into your computer

Installing the Hot Rod 66 controller card into your computer is a simple process. You just have to insert the card into any available PCI slot on the motherboard (see figure below).

- Open your computer case.
- Remove the inside slot cover of an available PCI slot on the motherboard.
- Insert the Hot Rod 66 controller card into the open slot.
- Attach the two-threaded IDE HDD LED connector of the computer case to HDD-LED connector on the Hot Rod 66 controller card.
- Fasten the controller card bracket to the case.

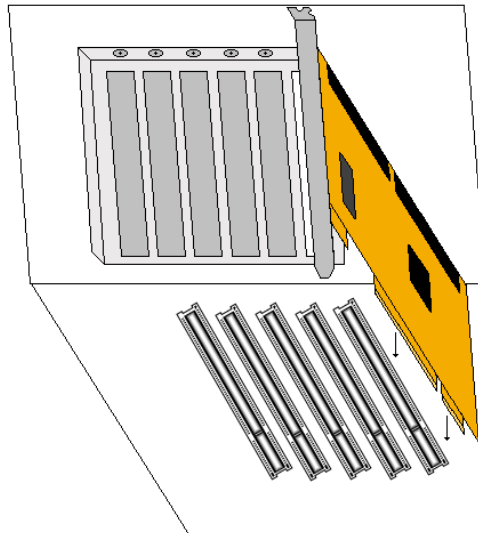


Figure 2-1: Hot Rod 66 controller card installation

Installing Hard Drive

The Hot Rod 66 provides two IDE hard drive connectors that support Ultra ATA/66 (Also known as Ultra DMA/66) specification.

How to install the Ultra ATA/66 Cable Assembly:

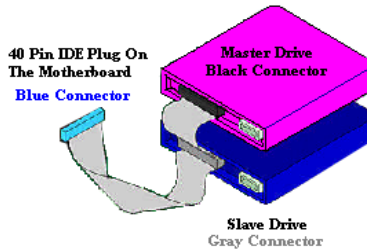


Figure 2-12. How to connect an ATA/66 Cable to the Motherboard

- The **BLUE** connector must be plugged into the **Motherboard** or your system will not work.
- Each connector on the Ultra ATA/66 cable assembly has a small polarization tab centrally located on the body of the plastic. This fits into the matching slot on the mating plugs on the motherboard and the drives, thus assuring positive mating (pin #1 to pin #1)

- The red line on the cable should be aligned with pin #1. On the drives this will result in the red line facing the power connector. Attach the **BLUE** connector to the appropriate 40 pin IDE plug on the **Motherboard**.
- Attach the **BLACK** connector to the mating plug on the **Master** hard drive. Attach the **GREY** connector to the mating plug on the **Slave** drive (secondary hard drive, CD ROM, or tape drive). Please refer figure 2-12.

Section 3: Software Installation

In this section we will detail the Hot Rod 66 driver installation procedure when used with various operating systems.

DOS

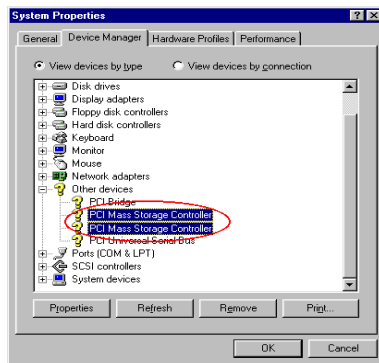
The Hot Rod 66 BIOS supports DOS 5.x (or above) and Windows 3.1x without software driver.

Windows 95

Installing drivers during Windows 95 installation:

Step 1: After installing the Hot Rod 66 controller card and configuring your hard disk (refer to hardware installation), power on your system.

Step 2: Install Windows 95 normally.



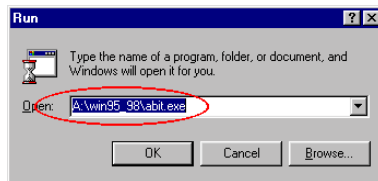
Step 3: After you have finished installation and entered Windows 95, please enter “*Control Panel*” → “*System*”, and then select “*Device Manager*” → “*Other Devices*.”

Remove the “*PCI Mass Storage Controller*”, then exit “*System*” and close “*Control Panel*.”

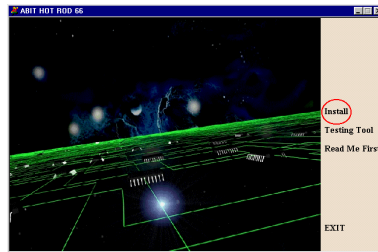


Step 3: Click the “*Start*” menu in the taskbar and then select “*Run*.”

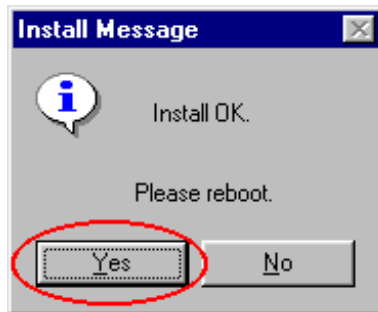
Insert the Hot Rod 66 driver disk into floppy A.



Step 4: Enter "A:\Win95_98\ABIT.exe" in blank space, and then click "OK."



Step 5: Click "Install."



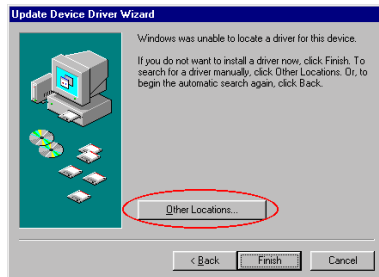
Step 6: Click "Yes" to restart your computer.

Installing drivers with existing Windows 95:

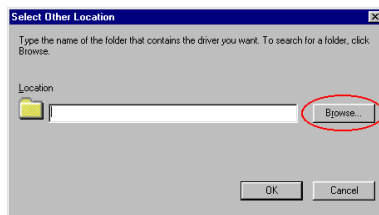
Step 1: After installing the Hot Rod 66 controller card and configuring your hard disk (refer to hard ware installation), power on your system.



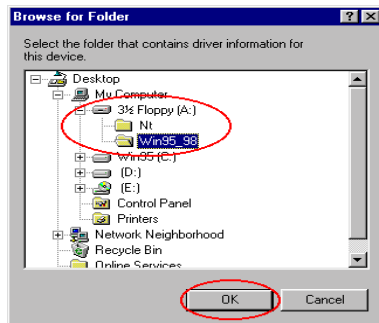
Step 2: The “*Update Device Driver Wizard*” will appear, informing you that it has found a “*PCI Mass Storage Controller*.” Click “*Next*.”



Step 3: Click “*Other Locations...*”



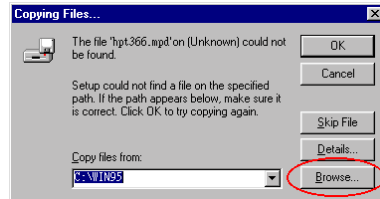
Step 4: Click “*Browse...*” and then insert the Hot Rod 66 Driver diskette into drive A.



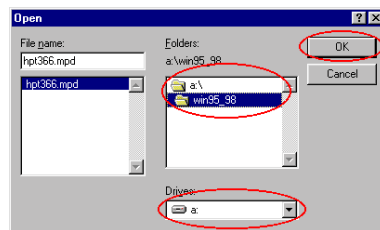
Step 5: Select “*Floppy (A)*” and folder “*Win95_98*” then click “*OK*.”



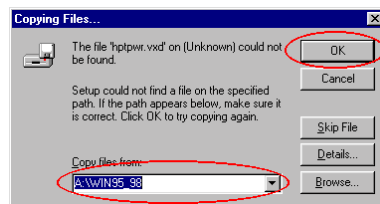
Step 6: Click “*Finish*.”



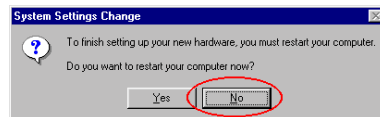
Step 7: Click “*Browse...*”



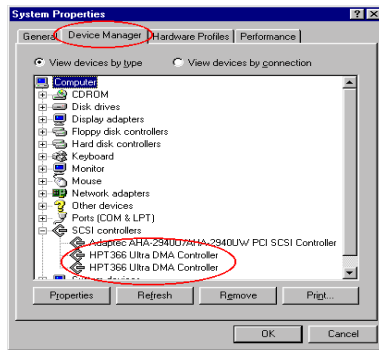
Step 8: Select “*Drive A*” and folder “*win95_98*” then click “*OK*.”



Step 9: Select “*A:\WIN95_98*”, and then click “*OK*.”



Step 10: Click “*No*” to continue installing another “*PCI Mass Storage Controller*”. After installing another controller, the system will ask you to restart computer again, click “*Yes*” to restart your computer.



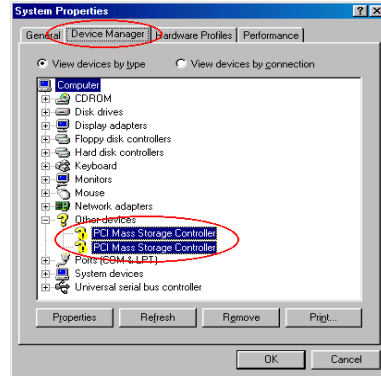
Step 11: After your system has restarted, you can enter “*Control Panel*” → “*System*”, and then select “*Device Manager*” → “*SCSI Controllers*”. If Hot Rod 66 driver is installed correctly, you will see the figure on the left.

Windows 98

Installing drivers during Windows 98 installation:

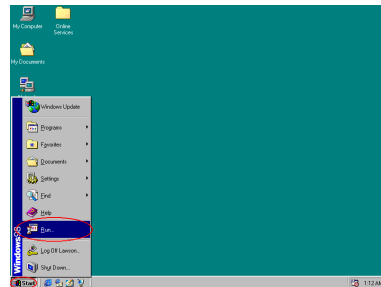
Step 1: After installing the Hot Rod 66 controller card and configuring your hard disk (refer to hard ware installation), power on your system.

Step 2: Install Windows 98 normally.

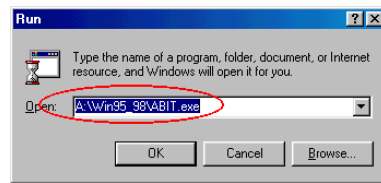


Step 3: After you have finished installation and entered Windows 98, please enter “Control Panel” → “System”, and then select “Device Manager” → “Other Devices.”

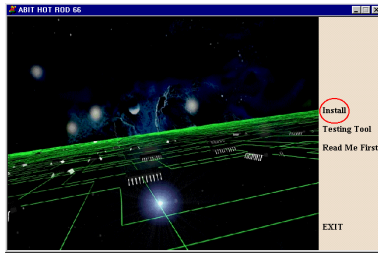
Remove the “PCI Mass Storage Controller”, then exit “System” and close “Control Panel.”



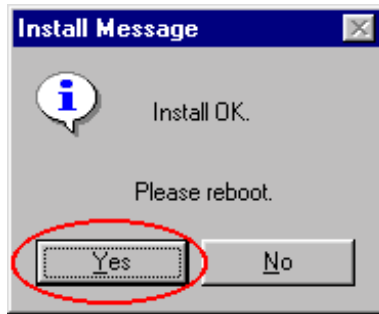
Step 3: Click the “Start” menu in the taskbar and select “Run.”



Step 4: Enter "A:\Win95_98\ABIT.exe" in blank space, and then click "OK."



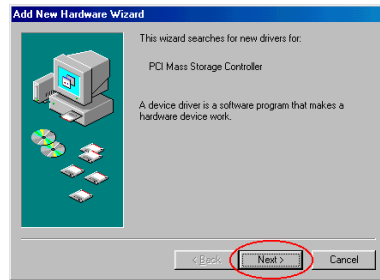
Step 5: Click “Install.”



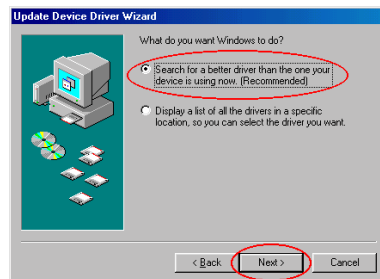
Step 6: Click “Yes” to restart your computer.

Installing drivers with existing Windows 98:

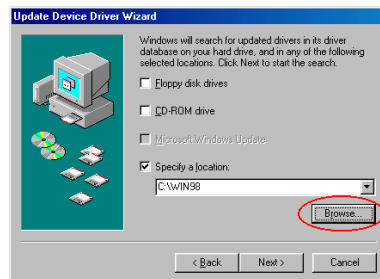
Step 1: After installing the Hot Rod 66 controller card and configuring your hard disk (refer to hard ware installation), power on your system.



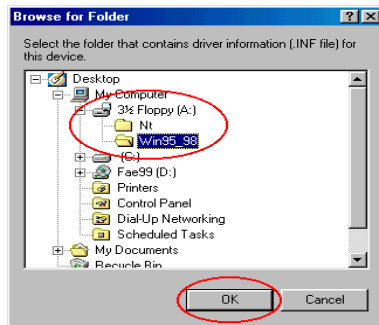
Step 2: The “*Add New Hardware Wizard*” will appear informing you that it has found a “*PCI Mass Storage Controller*.” Click “*Next*.”



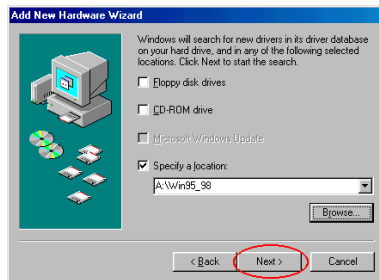
Step 3: Select “*Search for a better driver than the one your device is using now. (Recommended)*”, and then click “*Next*.”



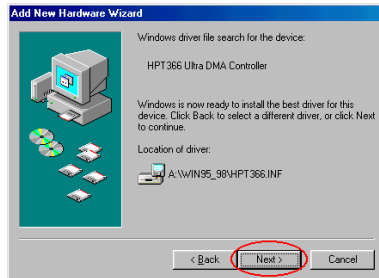
Step 4: Click “*Browse...*” and then insert the “*Hot Rod 66 Driver*” diskette into drive A.



Step 5: Select “*Floppy (A)*” and folder “*Win95_98*” then click “*OK*.”



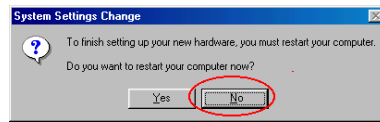
Step 6: Click “*Next*.”



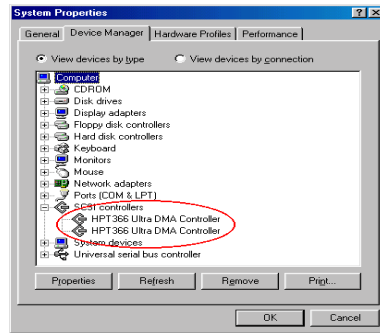
Step 7: Click “*Next*.”



Step 8: Click “*Finish*.”



Step 9: Click “No” to continue installing another “*PCI Mass Storage Controller*”. After installing another controller, your system will ask you to restart your computer again, click “Yes” to restart your computer.



Step 10: After your system has restarted, you can enter “*Control Panel*” → “*System*”, and then select “*Device Manager*” → “*SCSI Controllers*”. If Hot Rod 66 driver is installed correctly, you will see the figure on the left.

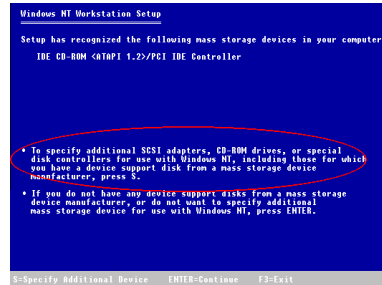
Windows NT 4.0

Installing drivers during Windows NT installation:

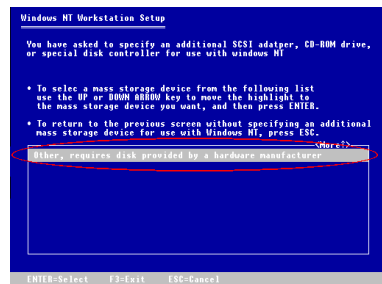
If the NT 4.0 is first installed on the ATA66 drive connected to Hot Rod 66 controller card, follow the following installation procedure:

Step 1: Install the Hot Rod 66 controller card in any available PCI slot and then connect your ATA66 hard disk to it (refer to hardware installation).

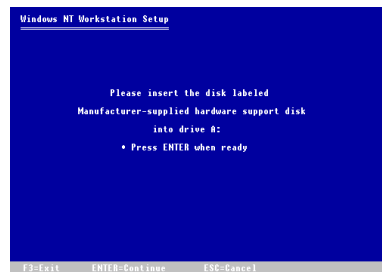
Step 2: Set your system to boot from "*Drive A*" and then insert the Windows NT installation diskette 1/1. Power on your computer.



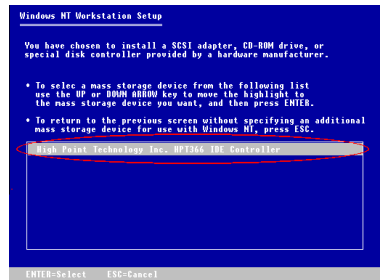
Step 3: The setup program will display a message about installing mass storage devices (see figure left) while you install NT4.0. Please press "*S*" to install Hot Rod 66 driver.



Step 4: Select "*Other, requires disk provided by a hardware manufacturer*", and then press "*ENTER*".



Step 5: Insert the Hot Rod 66 driver disk into drive A, then press "*ENTER*".

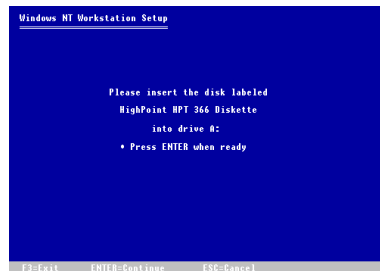


Step 6: Please press "**ENTER**" to continue setup.



Step 7: The setup program will display a message (see left figure) to inform you NT setup has recognized the Hot Rod 66 controller.

Press "**ENTER**" to continue setup.

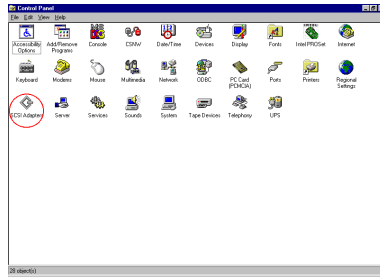


Step 8: After you configure your hard disk and specify the installation path, the NT setup will ask you to insert the Hot Rod 66 driver disk into drive A again. Insert the driver disk, and then press "**ENTER**" to continue setup.

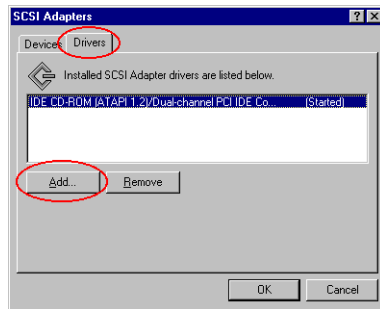
If you have followed the steps described above, you should be finished installing your Hot Rod 66 controller. For the rest of Windows NT installation steps, please follow the instructions displayed in the NT setup program.

Installing drivers with existing Windows NT:

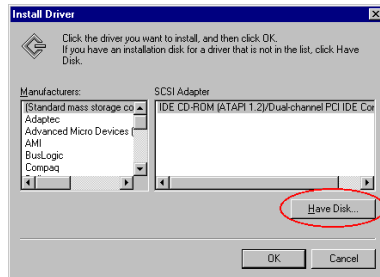
If there is an existing NT 4.0 file system, you can install the Hot Rod 66 into the existing system by following procedure:



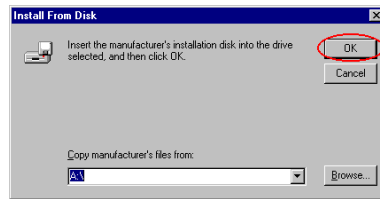
Step 1: Open "*Control Panel*", and then enter "*SCSI Adapters*".



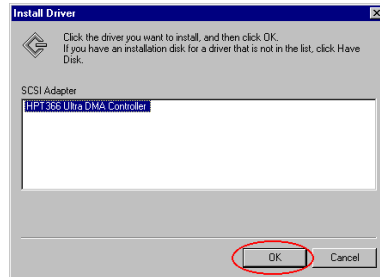
Step 2: Select "*Drivers*", and then click "*Add...*"



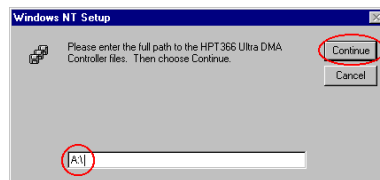
Step 3: Click "*Have Disk...*"



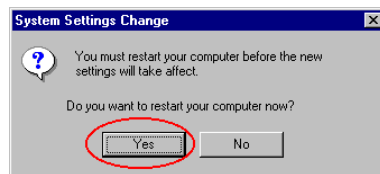
Step 4: Insert the Hot Rod 66 driver disk into drive A, and then click "**OK**."



Step 5: Click "**OK**."



Step 6: Enter "**A:**" in blank space, and then click "**Continue**".



Step 7: Click "**Yes**" to restart your computer.

Section 4: BIOS Flashing User Instructions

In this section we will tell you how to upgrade the Hot Rod 66 BIOS. If you receive information about an update for the Hot Rod 66 BIOS from our website ([Http://www.abit.com.tw](http://www.abit.com.tw)) or technical support, download the BIOS file and save it under the name "**BIOS**." Then follow the procedure below to upgrade to the Hot Rod 66 BIOS:

Step 1: Copy the files "**load.exe**" (included in the Hot Rod 66 Driver Disk) and "**BIOS**" to a new floppy.

Step 2: Reboot your system and go into the pure DOS environment.

Step 3: Insert the floppy that contains the files "**load.exe**" and "**BIOS**" into drive A.

Step 4: At the "A:\>" prompt, type "**load BIOS**" and then press "**enter**".

Step 5: Remove the floppy A, and then restart your system.

