

# **FUJITSU HANDYDRIVE (FireWire-1394) EDITION**

## **USER'S MANUAL**

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## Important Update

Your Fujitsu HandyDrive is now supplied pre-formatted as a single FAT 32 DOS partition. For most users this will mean the drive is useable straight out of the box without the need to Format and Partition the drive (see below for exceptions) please skip those parts of the user manuals and refer to the driver installations sections as required.

### **Windows 2000 & XP.**

The drive is supplied formatted as a FAT 32 partition, you may prefer or need the drive to be NTFS formatted, in which case please refer to the user manual to reformat the drive

### **APPLE**

The HandyDrive's user manual assumes the handy drive is unformatted. Since MAC OS's generally treat DOS formatted disks as read only resources you will need to perform a few simple steps to convert the DOS formatted HandyDrive to be a fully read / writeable disk.

### **Mac OS/9**

1. Connect the HandyDrive to the Apple System.
2. A Drive Icon will appear on the desktop labelled 'HandyDrive'.
3. From the Apple menu, select "Control Panels", "Extensions Manager" .
4. Clear the "File Exchange" check box, and click Restart.
5. Once the system restarts, you will be prompted to initialise the drive. Enter a name for the drive and from the dropdown select the "Mac OS extended" format and click Initialise.

6. After the format has completed a drive icon will appear on your desktop with the name you supplied in step 5.
7. To re-enable File Exchange, follow step 3 above, and click on the File Exchange checkbox, ensure a check mark appears, and click Restart .

Your Fujitsu HandyDrive is now ready for use.

### **Mac OSX**

1. Select OS disk on the OS10 desktop
2. Double click on the Application folder to open it
3. Double click on the Utility folder
4. Double click on “Disk Utility”
5. Click “Drive Setup” button
6. Click on the icon representing the new drive
7. Enter a name for the drive, Set the formatting options as required ie, MAC OS, Unix etc
8. Click on the “Partition” button, a confirmation dialog box will appear, confirm your request, the drive will now be formatted and partitioned. Once this completes the drive will reappear on the desktop with the name you supplied

Your Fujitsu HandyDrive is now ready for use.

# 1. INTRODUCTION

## 1.1. General unit description

The FireWire HandyDrive is an external hard disk, powered through a 1394 cable.

The following 4 items are delivered in the standard HandyDrive package:

1. HandyDrive FireWire Edition unit
2. CD-ROM with drivers
3. User's Manual
4. 1394 6-pin cable

HandyDrive Options – available separately:

- External Power Supply - Part No. AOF-4226

The HandyDrive is compatible with the following operating systems, meaning the following operating systems include native support for this device:

- Windows 98 SE
- Windows Me (Millennium)
- Windows 2000 Professional
- Windows XP Home Edition and Professional
  
- MacOS 9.1 or later
- MacOS X
  
- Linux.(kernel 2.2.14 to 2.2.19 and 2.4.x)

Operating systems requiring additional drivers (included on the enclosed HandyDrive Driver CD-ROM) are:

- MacOS 9.0 with FireWire Support 2.2.2 or later

**Note:** Windows 98 (First Edition) does not support the 1394 interface. The system's version can be checked in the System Properties window (right-click on My Computer and select Properties from the drop-down menu). The system version "Microsoft Windows 98" or "Microsoft Windows 98 Second Edition" is displayed.

## **1.2. Connecting the HandyDrive to a computer**

The HandyDrive can be connected either to the host adapter or to an external 1394 hub or device. The HandyDrive has two 1394 ports available, so other 1394 devices can be connected to the HandyDrive to form a Daisy-chain connection.

The HandyDrive can be hot-plugged/unplugged. This means that on systems supporting Plug and Play, connecting or disconnecting the unit can take place while the system is up and running, without the need to reboot the system. The drive will then be auto-detected.

- If the HandyDrive is connected as the last device in a Daisy-chain connection, either of the two ports can be used.
- If the HandyDrive is connected in the middle of a Daisy-chain, either of the two ports can be used to establish connections to the previous or next device in the chain.
- Should the HandyDrive be required to be powered from the 1394 cable (Bus-powered mode), every device in the Daisy-chain located between the HandyDrive and the computer must use 6-pin 1394 ports (1394 4-pin ports and cables do not carry power).
- Should a Daisy-chain connection be established, to be able to work with one given device, every device in the Daisy-chain located between that one and the computer must be switched on.
- Cables must be connected so that no communication loops are established. In other words, one and only one communication flow can be established between any two 1394 devices.

The LEDs on the HandyDrive flash while the disk is reading/writing. Do not move or disconnect the unit while the LEDs are flashing.

When connecting the HandyDrive to the computer for the very first time, the HandyDrive icon will only appear in My Computer or Windows Explorer and the disk will thus only be accessible after at least one partition has been created (see the section corresponding to your operating system).

The HandyDrive can be operated in either of two modes:

- Bus-Powered mode - *powered via the system's FireWire bus without an external power supply* or
- Self-Powered mode - *powered from an external power supply*.

The external power supply may be required under the following conditions:

- Adequate power level is not supplied by the host adapter or hub.
- Several 1394 bus-powered devices are connected, so that the power level supplied by the host adapter or hub is not enough to power all of them.
- Power is not supplied at all by the host adapter (PCMCIA cards, for example).
- At least one device in the chain between the HandyDrive and the host adapter is using a 4-pin 1394 port (only the 6-pin 1394 ports include power lines).

Bus powered mode requires that the system can supply sufficient power via its 1394 ports either from the system's root port or from the 1394 hub where the HandyDrive is connected.

### **How do I know that sufficient power is being delivered to the HandyDrive?**

If the 1394 bus power level is sufficient the HandyDrive's LEDs will light up and the motor will spin up.

Should the HandyDrive be connected to a 1394 port not supplying sufficient current or voltage levels to operate the disk drive, then

- either the drive's motor will not spin-up and a slight ticking noise will be produced by the drive's heads,
- or the system will not be able to recognize and/or access the drive.

It is also possible that the drive's motor can spin-up and the system recognizes the drive correctly, but random errors or system crashes occur during normal usage. To solve this, see the following section.

### **How to solve a low 1394 power level problem?**

Try the following steps in this order:

1. Connect the HandyDrive to a self-powered hub (powered by its own power supply).
2. Use the external power supply to power the HandyDrive.

To use the HandyDrive powered by the external power supply, the power switch on the HandyDrive must be switched to 'EXT'. Otherwise the unit will still try to draw power from the FireWire cable.

Please contact your dealer/reseller to purchase the optional HandyDrive external power supply.



## 2. MACINTOSH USERS

### 2.1. Installing the extension

The HandyDrive is supplied with extensions for MacOS 9.0.

**Note:** The HandyDrive is supported under the operating systems MacOS 9.1 and later and under MacOS X by the native USB-1 extensions.

To install the driver, follow the steps below:

- Insert the HandyDrive's CD-ROM into the CD-ROM drive of your computer.
- Select the CD-ROM icon and run the appropriate installer program.
- Follow the on-screen instructions to have the extensions loaded and installed.
- In the last dialog box select RESTART for the MacOS to be restarted.

Once the extension is installed and the system has been restarted, the HandyDrive can be connected.

**Note 1:** FireWire 2.2.2 or higher must be installed on the system. If it is not, please contact your Macintosh dealer. You can confirm which extensions are installed using the Extensions Manager in the Apple menu or looking into the System Extensions folder installations. The FireWire extensions that must be checked are FireWire Enabler and FireWire Support.

FireWire 2.2.2 is only compatible with MacOS 9. For a PowerMac G3 Blue and White computer to be able to use FireWire 2.2.2, either the MacOS 9 must have been previously installed or the G3 firmware upgrades v1.02 or v1.1 must be installed. Please check on the Apple web site [www.apple.com](http://www.apple.com) for further information.

## 2.2. Formatting the HandyDrive disk

The HandyDrive is supplied un-formatted. Before it can be used it must be formatted as follows:

For MacOS 9.x

When a new HandyDrive is connected to the system, it will be automatically detected as an unreadable disk.

A dialog box will pop up. Enter a name there for the new drive. Then press Initialise. To change the format of a previously formatted HandyDrive, run Finder. Then click on the 'Special' tab, and select Erase Disk.

**Note:** File sharing must be turned off and the Drive Icon of the HandyDrive must be selected before Erase Disk is run.

For MacOS X

Run Applications – Utilities – Disk Utility. Select the Drive Setup icon, then the Partition tab. Select the partition type required, enter a name for the new partition, and click on the partition button displayed in the warning window presented.

Once the HandyDrive is formatted, its icon will appear on the desktop about 15 to 20 seconds after being connected.

If reformatting of the HandyDrive is required at any other time, you may do that by executing the Erase Disk utility from the Finder's Special drop-down menu (MacOS 9.x) or the Disk Utility (MacOS X, located in the Utilities folder).

<p><b>See section 2.4. about MacOS issues on mounting and ejecting devices, and on creating DOS (FAT-32) volumes.</b></p>
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## 2.3. Disconnecting the HandyDrive

**Before disconnecting the HandyDrive, please Eject the disk by dragging its icon over the Trash can icon.**

**After the HandyDrive's icon has disappeared from the desktop, the HandyDrive can be safely disconnected.**

**See section 2.4.**

## 2.4. MacOS issues

- If the HandyDrive is already formatted to the DOS format, the Erase Disk dialog box (MacOS 9.x) will only allow the disk to be reformatted to the DOS format. Should the disk be required to be formatted to the HFS or HFS+ format, the DOS partition must be previously deleted (either by FDISK under Windows 98/Me or by the Disk Administrator under Windows 2000/XP).
- MacOS 10.0.x **does not adequately support** the DOS format. It is recommended **NOT to use** DOS volumes under this environment.
- MacOS 10.1.x does support the DOS format, but DOS volumes created by the Disk Utility are **incompatible** with Windows. Additionally, both MacOS 9 and X can take **several minutes** in mounting the volume on the desktop. Should Windows compatibility be required, the DOS volume can be created under MacOS 9 or under Windows. This volume is mounted on the desktop within the normal 15 to 20 seconds time.
- When mounting or un-mounting the volume, sometimes it is necessary to move the mouse to have the icon mounted on or un-mounted from the desktop under MacOS X.

## **2.5. i-Mac issues**

Some i-Mac computers do not switch off the FireWire cable's power line when the system is switched off. Under this situation, if the HandyDrive is kept connected to the system and the Bus-Powered mode is being used, it may be possible that the HandyDrive will not be recognized at the next system start up, so its icon will not appear on the desktop. This phenomenon can be checked by looking at the HandyDrive's LED, and noticing whether it stays on even after the i-Mac has been switched off.

In this case, it is necessary to disconnect the FireWire cable (the HandyDrive will be switched off) and reconnect the cable again. At this moment, it is possible that TWO identical FireWire hard disks will appear on the desktop. If this is the case, please drag one of them to the trashcan.

To avoid this situation, please disconnect the FireWire cable from the drive any time the i-Mac is being switched off or restarted.

### **3. WINDOWS 98SE AND WINDOWS Me USERS**

#### **3.1. Installing the IEEE-1394 host adapter**

If your PC does not have a FireWire port, an IEEE-1394 host adapter must be installed. Windows is compatible with and has embedded drivers for OHCI (Open Host Controller Interface) type IEEE-1394 host adapters. Once the host adapter has been installed, you must check under the Device Manager that it is working correctly. To do that, select in sequence Start Menu...Settings...Control Panel...System and select the Device Manager tab. Locate the OHCI IEEE-1394 host adapter and check that it is working properly, i.e. no yellow or red marks are next to it.

#### **3.2. Microsoft's Supplement for Windows 98SE**

**IMPORTANT:** Microsoft's Supplement number 242975xxx8 (where xxx are three letters indicating the language of the Supplement) is needed for Windows 98SE to work properly with FireWire Mass Storage devices.

Microsoft supplements are only available directly from Microsoft's web site. Please download them from the following URL:

[http://www.microsoft.com/windows98/downloads/contents/wurecommended/s\\_wufeatured/1394/](http://www.microsoft.com/windows98/downloads/contents/wurecommended/s_wufeatured/1394/)

Once downloaded, install the Supplement by executing the downloaded file 242975xxx8.exe. Once the installation is completed, the system must be re-booted.

#### **3.3. Installing the HandyDrive driver**

No additional driver is required. The HandyDrive is compatible with the default IEEE-1394 driver embedded in Windows 98SE. Windows 98SE may prompt the system CD-ROM when the HandyDrive is connected for the first time. In this case, insert the Windows 98SE system's CD-ROM into the CD-ROM drive and follow the instructions on the screen.

### 3.4. Creating and formatting the partition

If the HandyDrive has already been partitioned, its icon will appear in My Computer and in the Windows Explorer when being connected. You may skip the rest of this section and go to section 3.4.1.

**The drive's icon will only appear in My Computer or in the Windows Explorer after the partition has been created.**

If it does not appear, the partition must be created.

**If more than one partition is going to be created under Windows 98 or Windows 98SE, please read carefully in advance the section 3.6. Windows 98 and Windows 98SE issues.**

The partition must be created by the FDISK utility. To do that you should select in sequence Start, Run, enter FDISK in the dialog box and select Accept. The FDISK screen will appear.

In the first screen, the YES option (the default) must be selected by pressing the Return  key, to enable the compatibility with big hard disks.

The main FDISK screen is then shown. Select Option 5:  
Change the actual hard disk unit, by typing the number 5 and pressing the Return  key. In the next screen, each hard disk installed in the system is shown, numbered starting with number 1. Enter the number specifying the target hard disk to be partitioned.

To determine which number corresponds to the HandyDrive, you must look at the third column (Mbytes), where the capacity of every hard disk is shown. As disk capacity is shown in the binary notation (1 Megabyte = 1,048,576 bytes), the capacity shown by FDISK is somewhat lower than the real disk capacity expressed in the decimal notation (1 Megabyte = 1,000,000 bytes). Therefore, the different HandyDrive capacities shown by FDISK are approximately:

- 20 GB HandyDrive: 19,077 Mbytes
- 30 GB HandyDrive: 28,770 Mbytes
- 40 GB HandyDrive: 37,25 Mbytes

In addition, the second column, where the logical letter assigned to each partition is shown, will be empty for the HandyDrive, and the fourth column, where the free space available in each hard disk is shown, will show exactly the same capacity as the third column, as no partitions have been created so far.

**Remember that the HandyDrive will NEVER be the disk number 1, as the disk number 1 is always the system disk, that is, the disk containing the C: partition, where the Operating System boots from.**

Once the HandyDrive number and the Return  key have been entered, the initial FDISK menu screen (5 options) is shown again.

Now, select option 1 (default):

Create a DOS partition or logical unit, by pressing the Return  key.

On the next screen select option 1 (default):

Create a DOS primary partition, by pressing the Return  key.

A new screen asking if the new DOS primary partition will occupy all of the available disk space is shown. Most users will want to create a single DOS partition occupying all of the available disk space. To do this, the default option (YES) must be selected.


Other options, such as creating an Extended partition with one or more Logical Drives on it, is only recommended for advanced users, used to dealing with disk partitions and disk partitioning tools such as FDISK (see section 3.6. Windows 98 and Windows 98SE issues).

Once the partition has been created and the confirmation screen has been shown, the  key must be pressed to get back to the initial FDISK menu screen (5 options). The  key must then be pressed again to exit from FDISK, and then a dialog is shown advising that the system must be restarted for the changes made to take effect. Close the FDISK windows by clicking on the [X] box located at the upper right corner of the window.

As the HandyDrive is a hot-plug 1394 device, it is not necessary to restart Windows. All that is needed is to disconnect and reconnect the HandyDrive. After that, the HandyDrive's icon will appear in My Computer and in the Windows Explorer (before disconnecting the HandyDrive, please follow the steps specified in section 3.5.).

### 3.4.1. Formatting the partition


Once the partition has been created, it must be formatted. The following steps can also be followed if reformatting the partition is required at any other time:

- In My Computer or in the Windows Explorer, locate the HandyDrive icon or letter. If you are not really sure about which icon or letter is the HandyDrive assigned to, you may select the  Stop and Eject Hardware icon in the Task Bar (see section 3.5.) so that all removable drives along with their assigned logical letter will be shown.
- Click with the right mouse button on the HandyDrive icon or letter, so that the drop-down menu will appear.
- From the drop-down menu, select the Format option. The Format Disk window will appear.
- Select Complete Format.
- You may wish to give the partition a name by entering a volume name in the LABEL box.
- Select the Start button.
- A warning message is shown. Select Accept.
- At the end of the formatting process, it is recommended that the option to run Scandisk is accepted to verify the new partition before use.

The formatting process is now complete. The HandyDrive can now be accessed and data can be read/written on it.

**Note:** The partition is formatted to the FAT-32 file system, so it is compatible with MacOS and Linux.

## 3.5. Disconnecting the HandyDrive

**IMPORTANT:** Before disconnecting or switching-off the HandyDrive, it must be stopped by using the "Stop and Eject Hardware" utility, located at the right side of the Task Bar (look for the icon of a PCMCIA card with an arrow above it  ).

By selecting this icon (double clicking on it with the left mouse button), all removable drives along with their respective logical letters will be shown. Select the HandyDrive and select Safely Remove (W98/SE) or Stop (Windows Me). Once the confirmation dialog box is shown, the HandyDrive can be safely disconnected.



### 3.6. Windows 98 and Windows 98 SE issues

**This section includes VERY IMPORTANT information, applicable only when two or more partitions are being created in the HandyDrive. If only one partition taking the whole span of the HandyDrive capacity is going to be created, this section can be skipped.**

Due to a limitation in the Windows 98 and Windows 98SE FORMAT utility, no Logical Unit in Extended partitions containing one or more Logical Units created on a USB or 1394 (FireWire) hard disk drive can start above 8 GB.

This means, the sum of the capacity of the primary partition plus the capacities of all Logical Units except the last one, cannot be greater than 8 GB. For example, if we have a 20 GB HandyDrive where a 5 GB primary partition and a 15 GB extended partition containing two Logical Units have been created, the first Logical Unit cannot be greater than 3 GB, so that the sum of the primary partition plus the Logical Units (except the last one) is not greater than 8 GB (5 GB + 3 GB = 8 GB).

A general rule to check this requirement is met, is that the last Logical Unit created in the HandyDrive must have a capacity greater than the total HandyDrive capacity minus 8 GB. This means:

- On the 20 GB HandyDrive, the last Logical Unit must have a capacity greater than 12 GB,
- On the 30 GB HandyDrive, the last Logical Unit must have a capacity greater than 22 GB.
- On the 40 GB HandyDrive, the last Logical Unit must have a capacity greater than 32 GB.

Windows Me does not have this limitation, so that any combination of primary partition and logical units within the extended partition can be created and formatted.

### 3.7. Windows Me issues

If the HandyDrive is not detected after a system restart, disconnect and reconnect the HandyDrive and it will be recognized by the system.

## **4. WINDOWS 2000 PROFESSIONAL, WINDOWS XP HOME EDITION AND PROFESSIONAL USERS**

### **4.1. Installing the IEEE-1394 host adapter**

If your PC does not have a FireWire port, an IEEE-1394 host adapter must be installed. Windows is compatible with and includes drivers for OHCI (Open Host Controller Interface) type of IEEE-1394 host bus adapters. Once the host adapter has been installed, it must be checked whether it is working properly. To do that you may select in sequence Start Menu...Settings...Control Panel...System and select the Device Manager button. Locate the OHCI IEEE-1394 host bus adapter and check that it is working properly, i.e. no yellow or red marks are next to it.

### **4.2. Installing the HandyDrive driver**

No additional driver is required. The Mass Storage driver embedded in Windows 2000 Professional, Windows XP Home Edition and Professional supports the HandyDrive.

### **4.3. Creating and formatting the partition**

If the disk has already been partitioned, its icon will appear in My Computer and in the Windows Explorer. You may skip the rest of this section and go to section 4.3.1.

Otherwise, the partition must be created.

<b>The HandyDrive's icon will not appear in My Computer or in the Windows Explorer until after the partition has been created.</b>
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The partition must be created using the Disk Management software of the operating system as follows:

Log in to the system with Administrator rights.

To find the Disk Administrator ....

In Windows XP:

Select in sequence, Start., Control Panel..., Performance & Maintenance..., Administrative Tools..., Computer Management.

In Windows 2000

Select in sequence, Start., Settings..., Control Panel..., Administrative Tools..., Computer Management.

Then, Select Disk Management under the Storage branch in the left hand pane.

If the Disk Management tool asks for permission to write a signature onto the disk, YES must be selected. Otherwise the HandyDrive will be put in off-line status, and you will not be able to create the partition.


The HandyDrive unit will be that one showing the corresponding capacity, and with its graph showing the whole span as Unassigned. You must right-click on the unassigned space on the graph and select the Create Partition option. The Create Partition Wizard is then executed.

#### **4.3.1. Formatting the partition**

The partition may be formatted from within the Create Partition Wizard (one-step creating and formatting procedure), or it can be formatted afterwards either from the Disk Administrator or from My Computer or Windows Explorer (by the Format option within the drive's right mouse button's drop-down menu). FAT-32 or NTFS file systems can be selected. Should compatibility with Macintosh or with Windows 98/Me be required, FAT-32 format must be selected.

**See section 4.5. Windows 2000 Professional, Windows XP Home Edition and Professional issues, about creating FAT-32 partitions and about Windows 2000's Disk Administrator.**

## 4.4. Disconnecting the HandyDrive

**Before disconnecting the HandyDrive, it must be stopped by the "Stop and Eject Hardware" utility, located at the right side of the Task Bar (look for the icon of a PCMCIA card with an arrow above it  ).**

By selecting this icon, all removable drives along with their respective logical letters will be shown. Select the HandyDrive and select Stop. Once the confirmation dialog box is shown, the HandyDrive can be safely disconnected.

**See next section 4.5. Windows 2000 Professional and Windows XP Home Edition and Professional issues, about XP's issue when stopping devices.**

## 4.5. Windows 2000 Professional and Windows XP Home Edition and Professional issues

- Due to a limitation in the Windows 2000 Professional's Disk Administrator, when a one-step partition creating and formatting process is executed, it may be possible that a formatting error will be reported. In this case, the partition (already created) must be selected and formatted again.
- Due to a limitation in Windows XP Home Edition and Professional, 1394 disks cannot be ejected if a view of them is open on the Windows Explorer or My Computer (an error message is reported by the Stop and Eject utility, stating that some program is making use of the device). To be able to Stop and Eject the HandyDrive, make sure to close or change the view on the Windows Explorer or My Computer, then run the Stop and Eject utility again.
- Windows 2000 and XP cannot format partitions greater than 32 GB according to the FAT-32 file system. If a partition greater than 32 GB is created, then:
  - Under Windows XP, NTFS is the only available choice when using for formatting the Disk Administrator or the Format option of the drive's drop-down menu.

- Under Windows 2000, FAT-32 is an available option when formatting by using the Disk Administrator, but after the formatting procedure the error message “Volume size is too large” is shown.
- Under Windows 2000, FAT and FAT-32 are available options when formatting by using the Format option of the drive’s drop-down menu, but in both cases the error message “Windows could not finish formatting” is shown.

To be able to format a partition to the FAT-32 file system, the maximum size that can be specified in the Wizard is 32.768 MB under Windows XP, and 32.769 MB under Windows 2000. Due to this limitation, should a FAT-32 partition be required on a 40 GB HandyDrive, at least two partitions must be created.

Alternatively, a whole 40 GB FAT-32 partition can be created and formatted under Windows 98/SE/Me, whose formatting tool does not have that limitation, and then used under Windows 2000, XP as a single 40 GB partition.

## 5. LINUX USERS

1394 modules upgrades are actually available for kernel versions 2.2.14 to 2.2.19 and for 2.4.x. The Linux 1394 support is still considered as experimental, though all the tests made with the latest modules available have had correct results. Specifically, the correct functionality of the 1394 HandyDrive Video Edition has been tested with the following Linux distributions:

- Mandrake 8.1 (kernel 2.4.8), with the latest 1394 modules upgrade installed
- SuSE 7.3 (kernel 2.4.10), with 1394 modules included

For more information about the HandyDrive use under Linux, please visit our web site:

<http://www.fel.fujitsu.com>

## 6. PROBLEM SOLVING QUICK GUIDE

Problem	Root cause	Solution
The HandyDrive's LEDs do not light when connecting the drive to the computer or to a self-powered hub(powered by its own power supply).	The HandyDrive is not receiving sufficient power.	<ul style="list-style-type: none"> <li>• Check if every device in the 1394 chain between the HandyDrive and the computer is using 6-pin 1394 ports.</li> <li>• Check if every device in the 1394 chain between the HandyDrive and the computer is powered on.</li> <li>• Check if the power that can be supplied by the host adapter is enough to power all of the connected bus-powered devices.</li> <li>• Check if power can be supplied by the host adapter If problems still persist, then:</li> <li>• Have the HandyDrive connected to a 1394 self-powered hub.</li> <li>• Have the HandyDrive supplied from its external power supply. (Contact your dealer/reseller to purchase the optional external power supply).</li> </ul>
Ticking noise from the disk's motor and heads is produced when connecting the HandyDrive to the computer or to a self-powered hub, and the LEDs do not light permanently (they flash all the time).		
The disk's motor does spin-up and the drive is recognized by the system, but read/write operation is not stable, and/or system hangs during the normal operation of the drive.		
The HandyDrive is not recognized under the Windows Device Manager, and an unknown 1394 device is reported instead.		

Problem	Root cause	Solution
When disconnecting the HandyDrive, I get a message that a 1394 device has been unsafely disconnected.	The device has not been stopped before being disconnected.	<ul style="list-style-type: none"> <li>The device must be stopped before being disconnected.</li> </ul> See the Disconnecting procedure for your operating system in the manual.
The HandyDrive is detected by Windows 98SE, but the Stop and eject tool does not appear in the task bar.	The Microsoft's 1394 Supplement is not installed.	<ul style="list-style-type: none"> <li>To be able to safely stop and eject 1394 Mass Storage Devices under Windows 98SE, the Microsoft's 1394 Supplement must be installed.</li> </ul>
I don't find a formatting tool under MacOS.		<ul style="list-style-type: none"> <li>You can format with the Erase Disk option within the Finder's Special menu, or by using the Disk Utility (MacOS X).</li> </ul> See section 2.2. in the manual.
I want my HandyDrive to be formatted to the HFS+ system, but only the DOS option is available in the Erase Disk utility.	The disk is actually formatted acc. to the FAT-32 system (MacOS 9 issue).	<ul style="list-style-type: none"> <li>You must delete the FAT-32 partition with FDISK (Windows 98/Me), or with Disk Administrator (Win2000 or XP). Then the Erase Disk utility will let you format to the HFS/HFS+ systems.</li> </ul> See section 2.4. in the manual.
When connecting/ejecting the HandyDrive, the volume is not mounted/un-mounted on/from my MacOS X desktop.	MacOS X issue	<ul style="list-style-type: none"> <li>Sometimes the volume is not mounted/un-mounted in/from the MacOS X desktop until the mouse has been moved.</li> </ul> See section 2.4. in the manual.



<b>Problem</b>	<b>Root cause</b>	<b>Solution</b>
The HandyDrive's LEDs are lighting, the motor is spinning and the drive is shown in the Device Manager with no problems, but I don't see the drive's icon in My Computer or Windows Explorer.	The drive has not been partitioned.	<ul style="list-style-type: none"> <li>• The drive must be partitioned and formatted.</li> </ul> <p>See the appropriate section for your operating system in the manual.</p>
The HandyDrive's icon is shown in My Computer or Windows Explorer, but I get an error every time I try to access the drive.	The partition has not been formatted.	<ul style="list-style-type: none"> <li>• The partition must be formatted.</li> </ul> <p>See the appropriate section for your operating system in the manual.</p>
Under Windows 98SE, when running FDISK to create the partition, the option 5 "Change the actual disk unit" is not available, or when selecting the option 5, the HandyDrive is not shown in the drive list.	The HandyDrive has not been detected by the system.	<ul style="list-style-type: none"> <li>• Open the Device Manager to check for possible yellow or red marks next to the HandyDrive entry or to the 1394 host adapter.</li> <li>• Check if the adequate power level is being delivered to the HandyDrive (see above in this table).</li> </ul>
When creating and formatting the partition under Windows 2000's Disk Manager, I get the error that the partition could not be formatted.	Windows 2000 issue	<ul style="list-style-type: none"> <li>• Select the newly created partition, and format it again.</li> </ul> <p>See section 4.4. in the manual.</p>
I cannot Stop the device under Windows 2000.	Windows 2000 issue	<ul style="list-style-type: none"> <li>• Open and close the Disk Manager, and then try to stop the HandyDrive again.</li> </ul> <p>See section 4.4. in the manual.</p>

Problem	Root cause	Solution
I cannot Stop the device under Windows XP.	There is some open view of the HandyDrive in My Computer or Windows Explorer (Windows XP issue).	<ul style="list-style-type: none"> <li>• Close all open views of the HandyDrive in My Computer or Windows Explorer, and then try to stop it again.</li> </ul> <p>See section 4.4. in the manual.</p>
When trying to format the partition to the FAT-32 file system under Windows 2000 or XP, I always get the error that “the volume size is too large” or “Windows could not finish the format operation”.	The partition is larger than 32 GB (Windows 2000 and XP limitation).	<ul style="list-style-type: none"> <li>• Format the partition to the NTFS file system.</li> </ul> <p>Should you need FAT-32 partitions, you must divide the disk space into several partitions shorter than 32 GB.</p> <ul style="list-style-type: none"> <li>• You can create and format a FAT-32 partition larger than 32 GB under Windows 98SE and Me. It will be accessible under Windows 2000 and XP.</li> </ul> <p>See section 4.4. in the manual.</p>
I can access my HandyDrive under Windows 2000 and XP, but under Windows 98/Me the drive’s icon is not shown in My Computer or Windows Explorer. The Device Manager shows no problems with the HandyDrive.	The partition is formatted to the NTFS file system.	<ul style="list-style-type: none"> <li>• Windows 98 and Me do not support the NTFS file system. Should you need Windows 2000/XP and Windows 98/Me compatibility, you must format the partition to the FAT-32 file system.</li> </ul> <p>See section 4.2.1. in the manual.</p>

Problem	Root cause	Solution
I cannot make a backup larger than 4 GB.	The partition is formatted to the FAT-32 file system (FAT-32 limitation).	<ul style="list-style-type: none"> <li>• The largest file size being supported by the FAT-32 file system is 4 GB. You can backup your data by doing several smaller backups.</li> </ul>

## 7. FAQ QUICK GUIDE

Question	Answer
Can I boot the computer off the HandyDrive?	<ul style="list-style-type: none"><li>• NO as of today. To do that, 1394 Mass Storage Devices would need to be supported directly by the system BIOS.</li></ul>
How can the HandyDrive be formatted?	<ul style="list-style-type: none"><li>• Under MacOS, with the Erase Disk option in the Finder's Special menu, or with Disk Utility (MacOS X).</li><li>• Under Windows 98SE/Me, the partition is created by FDISK and is formatted by the Format option in the drive's menu.</li><li>• Under Windows 2000 and XP, the partition is created and formatted by the Disk Manager. The partition can also be formatted by the Format option in the drive's menu.</li><li>• Under Linux, the partition is created by 'fdisk', and can be formatted by one of several utilities, depending upon what file system is going to be used.</li></ul>
How many partitions can I create in my HandyDrive?	<ul style="list-style-type: none"><li>• Should the disk be blank, only one volume can be created under MacOS 9. Should the disk be previously partitioned, each partition can be individually reformatted, but the number of partitions or their sizes cannot be changed.</li><li>• Multiple partitions can be created under all other operating systems.</li></ul> <p>See sections "Creating and formatting the partition" and "Operating System issues", corresponding to your operating system.</p>

Question	Answer
Can I access the HandyDrive under DOS, or if booting the system off a Windows disk, or if booting Windows in the System Symbol Only mode?	<ul style="list-style-type: none"> <li>• NO as of today. 1394 is not supported under DOS. The only way to have the HandyDrive accessible under DOS would be if it could be supported directly by the system BIOS.</li> </ul>
Can I access the HandyDrive by booting off a floppy disk or CD-ROM?	<ul style="list-style-type: none"> <li>• As of today, the only system supporting 1394 Mass Storage Devices when booting off a floppy disk or CD-ROM is Linux. Boot disks can be generated, and microdistributions are available on CD-ROM from several parties.</li> </ul>
Which operating systems are compatible with the HandyDrive? Any driver needed?	<ul style="list-style-type: none"> <li>• The HandyDrive is compatible with all environments supporting 1394 Mass Storage Devices, as MacOS 9 and MacOS X, Windows 98SE/Me/2000 Professional and XP HE and Professional, and Linux 2.2.14 to 2.2.19 and 2.4.x. Under MacOS 9.0, an extension must be installed. Under Win 98SE, the Microsoft'1394 Supplement must be installed.</li> </ul>
How can I format the HandyDrive to have Mac-Windows compatibility?	<ul style="list-style-type: none"> <li>• You must format the partition to the FAT-32 file system (Mac calls it DOS format). DOS formatting by MacOS X is NOT compatible with Windows, so that the DOS format must be done under MacOS 9 or Windows. Additionally, MacOS 10.0.x does NOT adequately support the DOS file system.</li> </ul>
How can I format the HandyDrive to have Windows 98SE/Me/2000/XP compatibility?	<ul style="list-style-type: none"> <li>• You must format the partition to the FAT-32 file system. NTFS is also supported by Windows 2000 and XP, but this is incompatible with Windows 98SE and Me.</li> </ul>

Question	Answer
<p>How can I work with my HandyDrive under Linux? Is there Windows compatibility?</p>	<ul style="list-style-type: none"> <li>• 1394 Mass Storage Devices support under Linux is still experimental. Upgrades are available for kernel 2.2.14 to 2.2.19 and 2.4.x. Details are fully explained in a comprehensive technical bulletin available at our web site <a href="http://www.fel.fujitsu.com">www.fel.fujitsu.com</a>. For Windows compatibility, FAT-32 partitions must be used.</li> </ul>

## 8. Warranty



<http://www.fel.fujitsu.com>

### **WARRANTY CARD END-USER LIMITED PRODUCT WARRANTY**

Fujitsu warrants that this HandyDrive ('Product') will be free from any defect in material or workmanship, and shall perform in accordance with its specification, for a period of 24 months from the date of purchase. Fujitsu's sole liability for breach of this warranty shall be (at its option) to replace or repair the defective Product to the Customer, carriage paid.

This warranty does not extend to Product, which becomes defective resulting from damage in the course of transportation, or by handling, storage, operation, use or maintenance in a manner or environment not conforming to the instructions or specifications of Fujitsu. This warranty does not extend to Product, which is altered or modified such as by the removal or replacement of parts, or minor electrical or mechanical maladjustment.

This warranty is in lieu of all other warranties, whether implied by statute or otherwise, and which are hereby excluded. Fujitsu shall not be liable for any loss of profits or incidental or consequential loss for whatever reason.

In order to receive warranty service during the applicable warranty period, the Product must be returned by the purchaser or his/her agent, in its original container or equivalent, to the original point of purchase. A proof of purchase, the date purchased, seller's name and address, model and serial number must accompany the returned product for warranty service claims. Product repairs will be completed within approximately 30 days of receipt of the product.

After expiration of the warranty service coverage, repair services are available at an additional cost. Please contact the point of sale. This warranty is applied in EU and EFTA countries only.