

TEMPO™ RAID133

Macintosh® ATA Hardware RAID Controller

Quick Start Guide for Tempo RAID133

You Should Have

The following items should be included in your product package:

- One Tempo RAID133 PCI Macintosh ATA Hardware RAID Controller
- Two Ultra ATA cables
- Eight screws (for mounting hard drives)
- One power cable Y-adapter

The following items may be required for installation:

- Medium Phillips screwdriver
- Small flat blade screwdriver
- Needle nose pliers
- Drive mounting brackets/carriers or drive mounting sleds (sold separately)
- Additional power cable Y-adapters

System Requirements

The Tempo RAID133 requires the following in order to operate in your system:

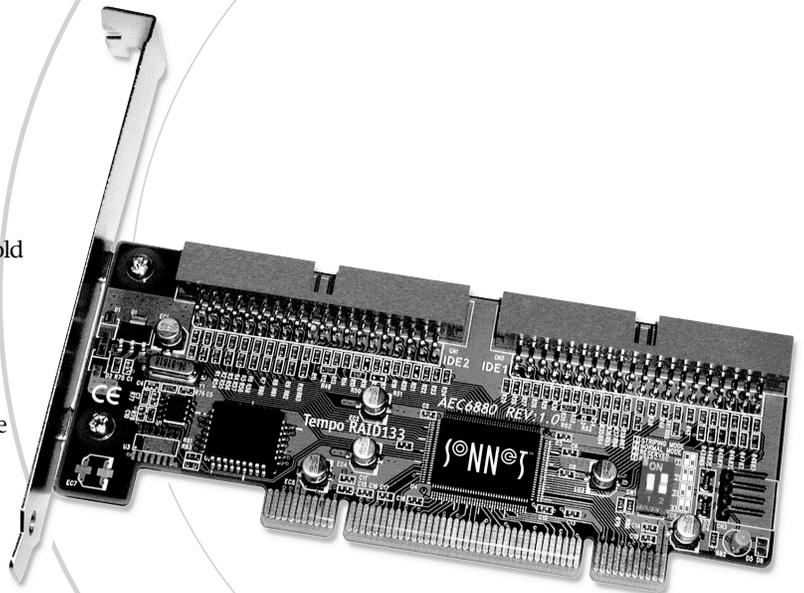
- One available PCI slot
- Two or four hard drives (depending on configuration)
- Two or four available hard drive bays (depending on configuration)
- Mac OS 8.5 or higher (through Mac OS X Version 10.3.x)

For up-to-date information on Mac OS compatibility, please check our web site.



Support Notes: We recommend you make a backup of important information on your system's current hard drive(s) prior to installing new hardware or software.

When handling computer products, you must take care to prevent components from being damaged by static electricity. Before opening your computer or removing parts from their packages, always ground yourself first by touching a metal part of the computer, such as a port access cover, and work in an area free of static electricity; avoid carpeted areas. Handle the Tempo RAID133 only by its edges, and avoid touching connector traces and component pins on PCI cards, hard drives, and other electronic devices.



www.sonnettech.com

Remember to register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.

Software updates and links are available from the Sonnet web site at www.sonnettech.com. • Online support form available at <http://supportform.sonnettech.com>.

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Quick Start Guide for Tempo RAID133

Installation Preparation

Prior to installing the Tempo RAID133 and hard drives into your system, you should familiarize yourself with the parts you will install.

1. Identify the connectors on one of the included Ultra ATA cables as shown in **Figure 1**; the host connector plugs into the Tempo RAID133 controller card, while the master and slave connectors plug into the hard drives.



Support Note: Most hard drives are factory preset for use as a single or master drive. To change the setting, you will need to reconfigure the hard drives' jumpers. Be sure the jumpers are configured properly, otherwise, your computer may not boot or your new drives may not be recognized.

2. Locate the jumper blocks on your hard drives. **Figure 2** shows the two most common jumper block locations.

Hardware Installation Steps

This section covers the configuration and installation of the Tempo RAID133 and one or two pairs of hard drives.



Support Note: Technical knowledge may be required to gain access to the drive expansion bays in certain computers; we recommend you first consult your computer's user manual. If you feel you are unable to install the computer hardware, contact a qualified technician.

1. Shut down the computer.
2. Remove the computer's cover and access its expansion card area and drive bay(s); refer to your computer's user manual for specific information.



Support Notes: When creating RAID volumes, you must connect the hard drives in pairs. We recommend that you use identical hard drives in your RAID setup. If you choose to use drives with different capacities, your striped volume's size will be equal to twice the capacity of the smaller drive.

Refer to the hard drives' user manuals for jumper setting information specific to your drives. Alternately, you may find jumper setting information printed on your hard drives' labels. Make sure the drives are oriented the same way as the illustration on the label before moving jumpers.

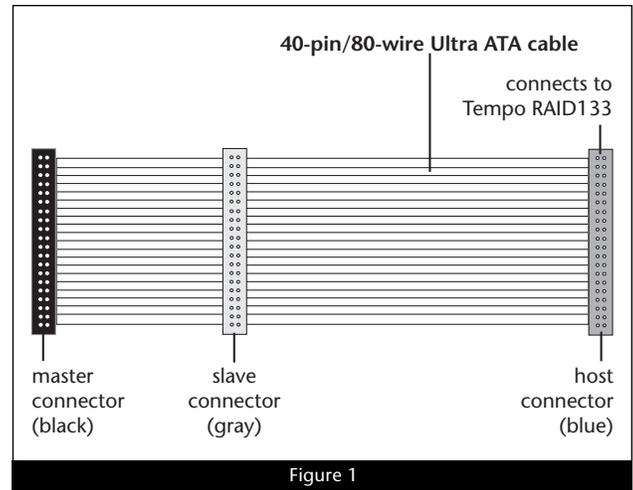


Figure 1

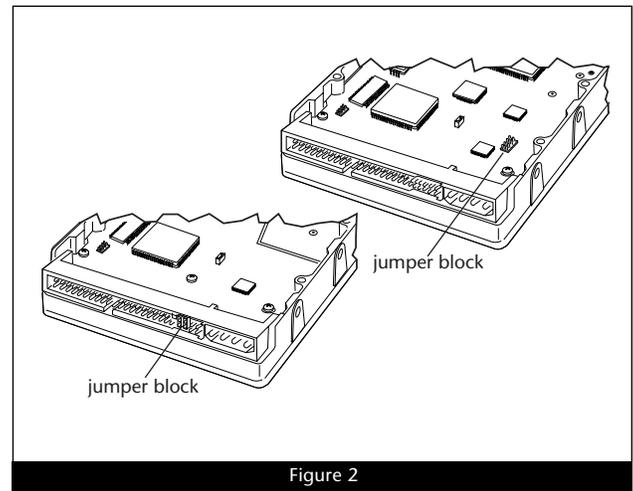


Figure 2

Quick Start Guide for Tempo RAID133

3. Configure your hard drives' jumpers as follows:

- When installing **one pair of drives to create one striped volume**, you must set the jumpers on both drives to the single setting when available, or the master setting if not.
- When connecting **two pairs of drives to create two striped volumes**, set the jumpers on one pair to the master setting, and on the other pair to the slave setting.



Support Note: A pair of drives consists of two drives connected at the same position (connector) on each of the two Ultra ATA cables, such as master + master, or slave + slave. Two drives connected on the same cable (master + slave) are not recognized as a pair by the Tempo RAID133.

4. Install the hard drives into expansion bays. (Depending on your computer model, drive mounting brackets/carriers or drive mounting sleds may be required to install your hard drives. Refer to your computer's user manual).

5. Connect the Ultra ATA cables to the hard drives as follows:

- When connecting **one pair of drives**, connect the master (black) connector on each cable to each drive (**Figure 3**); **verify the connectors are plugged in securely**.
- When connecting **two pairs of drives**, connect the cables' master (black) connectors to the drives with jumpers set in the master setting; connect the slave (gray) connectors to the drives with jumpers configured in the slave setting (**Figure 4**); **verify the connectors are plugged in securely**.

6. Locate the existing hard drive in your computer and find the 4-pin power connector plugged into it. You should find at least one extra power connector near the existing drive; connect it to the supplied power connector Y-adaptor. If you are installing only two additional hard drives, connect the Y-adaptor to the new hard drives. Otherwise, connect additional Y-adaptors (sold separately) as necessary to power all four hard drives. Verify the connectors are plugged in securely.

7. Remove the Tempo RAID133 card from its packaging.

8. Locate an available PCI slot close to the drive bays inside your computer and remove its port access cover (if present) from the rear of the computer.



Support Note: When you first install the Tempo RAID133, leave the DIP switches set in the normal mode setting (both DIP switches off/down). You must first initialize (format) each of the hard drives connected to the Tempo RAID133 individually, before initializing the striped volumes.

9. Install the Tempo card into the PCI slot; **make sure the card is firmly seated in the slot**. Leave the DIP switches in the normal mode (default) setting for now (**Figure 5**).

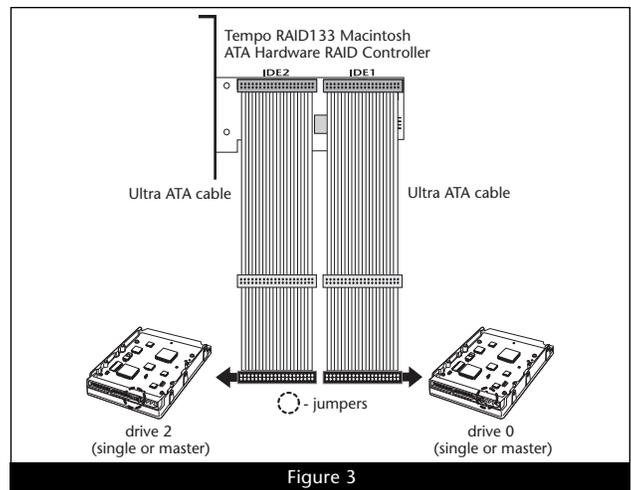


Figure 3

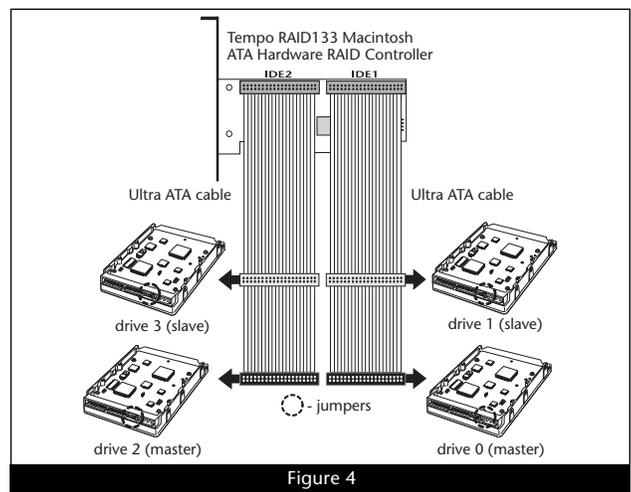


Figure 4

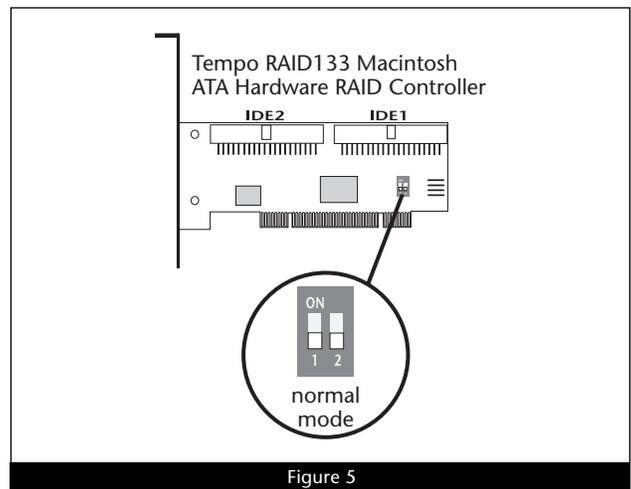


Figure 5

Quick Start Guide for Tempo RAID133



Support Note: Power Macintosh G3 Desktop users must remove the access panel on the main chassis to route the Ultra ATA cables from the drives to the Tempo RAID133 card. *You may need tools to perform this procedure.* To remove the access panel, first unlock and tilt up the internal assembly; remember to lower the assembly support stand. Next, firmly twist the top edge of the panel forward toward the power supply, then lift the panel out (**Figure 6**). Save the panel in case you ever need to use it again.

10. Route the Ultra ATA cables to the Tempo RAID133 card; avoid the processor's heat sink and make sure the cables will not get crushed or pinched by any part of the case when the computer is reassembled.
11. Attach the Ultra ATA cables' host (blue) connectors to the Tempo RAID133.
12. Check the cable connections; **make sure all cables are properly connected to the Tempo RAID133 and the hard drives.**



WARNING: Hard drives attached to the Tempo RAID133 will not mount (appear on the desktop) until they have been formatted; this includes drives with data on them, previously used in other computers. Please be aware that formatting a drive erases any data present.

Drive Formatting: Mac OS 8.5 through 9.x

This section covers the process of formatting the hard drives attached to the Tempo RAID133 using Apple's Drive Setup utility under Mac OS 8.5 through 9.x. (The Drive Setup application is installed during the Mac OS installation process and is usually located in the Utilities folder on the hard drive containing your active System Folder.) If you want to format your drives under Mac OS X, skip to "Drive Formatting: Mac OS X" on page 5.

1. Turn on your computer.



Support Note: IDE hard drives attached to the Tempo RAID133 will register as SCSI devices to the computer. For example, in **Figure 7** the newly installed hard drives show up as <not initialized> under Volume Name(s) and SCSI under Type.

2. Initialize (format) each of the drives attached to the Tempo RAID133 with Drive Setup (**Figure 7**). For drives larger than 2 Gigabytes, format them as Mac OS Extended (HFS+) to take full advantage of their storage capacity.
3. Shut down the computer.
4. Move DIP switch 2 on the Tempo RAID133 to ON to select the striping mode (**Figure 8**).
5. If you removed the card to move the DIP switches, verify the card is seated firmly in the slot.

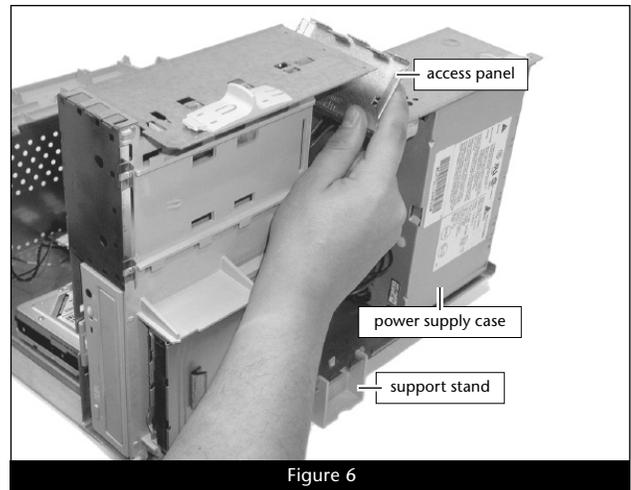


Figure 6

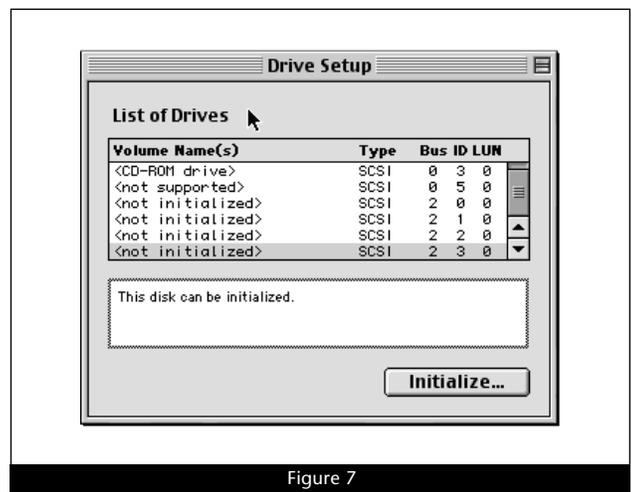


Figure 7

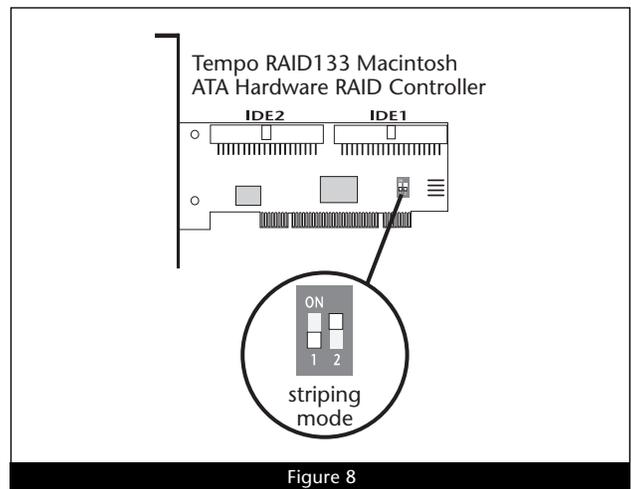


Figure 8

Quick Start Guide for Tempo RAID133

6. Recheck the cable connections; make sure all cables are properly connected to the Tempo RAID133 and the hard drives.
7. Close the computer and carefully replace its case cover; be very careful not to crimp the cables.
8. Turn on your computer.



Support Note: The Tempo RAID133 creates one striped volume for each pair of hard drives installed—one pair of drives creates one volume, two pairs of drives create two volumes.

9. Open Drive Setup again. You will see <not mounted> instead of <not initialized> for each volume (pair of hard drives) connected to the Tempo RAID133 (Figure 9).
10. At this point, you may optionally choose to partition each RAID volume to create smaller “virtual” drives to store and retrieve data faster and more efficiently; in the Drive Setup menu bar, select Functions: Volume Settings... Partition, and set up the partitions. When ready, click Initialize... to initialize each of the unmounted volumes.
11. Name each of the volumes (or “virtual” drives) once they have been initialized; each volume will appear on the desktop as “virtual” drives (Figure 10). Your drives are now ready for use.

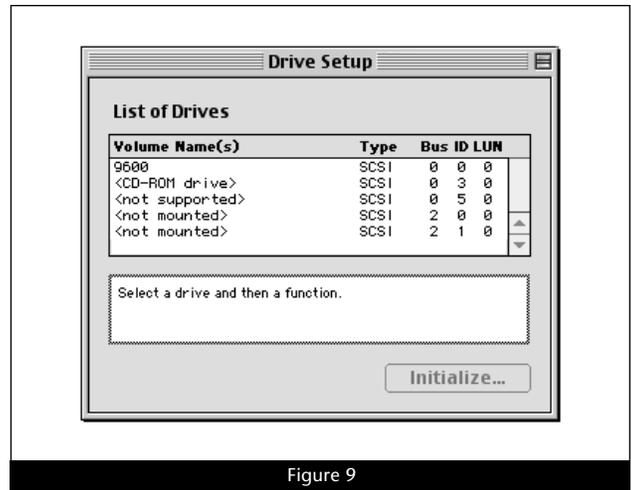


Figure 9

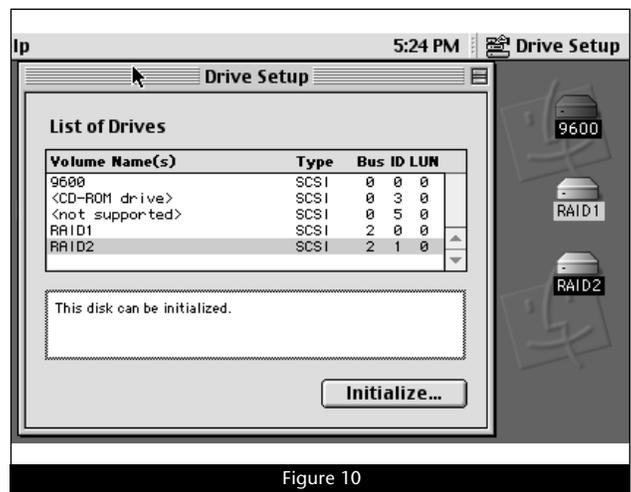


Figure 10

Drive Formatting: Mac OS X

This section describes the process of formatting (initializing) hard drives connected to the Tempo RAID133 using Disk Utility under Mac OS X Version 10.3; the process under Version 10.2 (and 10.1) is very similar. The drive formatting utility is located in the Utilities folder (within the Applications folder) on your Mac OS X volume.

1. Turn on your computer.
2. During the boot process under Mac OS X, you may see an information window appear stating “You have inserted a disk containing no volumes that Mac OS X can read.” If this message appears, click the Initialize... button to launch Disk Utility (Figure 11).



Figure 11

Quick Start Guide for Tempo RAID133

3. If you have not already done so, open Disk Utility (Figure 12). Note that all attached drives appear in the *Information* window, regardless of being formatted or not.

Support Note: IDE hard drives attached to the Tempo RAID133 will register as a SCSI devices to the computer. For example, in Figure 12 the newly installed hard drives show up as SCSI under Connection Bus.

4. Select the first drive you will format by single-clicking the drive symbol or the “name” of the drive (Figure 12).

WARNING: Do not use the built-in RAID option in Disk Utility (accessed by clicking the RAID tab). Using this feature creates software-based RAID volumes that are available for use only under Mac OS X. Also, the option to create bootable volumes is not available with this feature.

5. Click on the Partition button (Figure 13). When the *Partition* window appears, click on the drop down menu beneath “Volume Scheme:” and select “1 Partition”. Make sure that the “Install Mac OS 9 Disk Drivers” option is checked, and then click the Partition button at the bottom of the window.

6. When the *Warning* window appears, click the Partition button (Figure 14). When partitioning and formatting are complete, repeat steps 4–6 until every drive connected to the Tempo RAID133 has been formatted.

7. Shut down the computer.

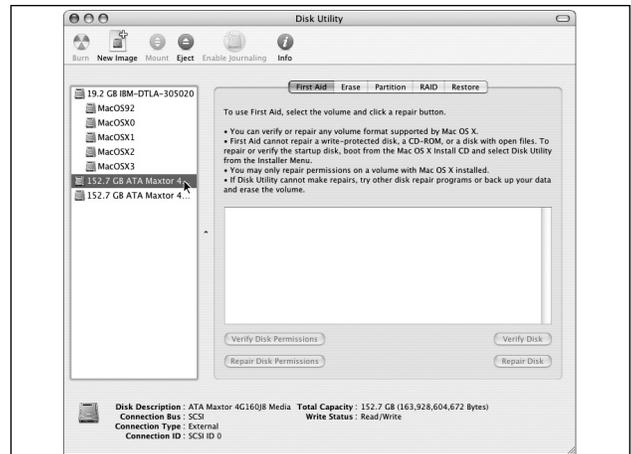


Figure 12

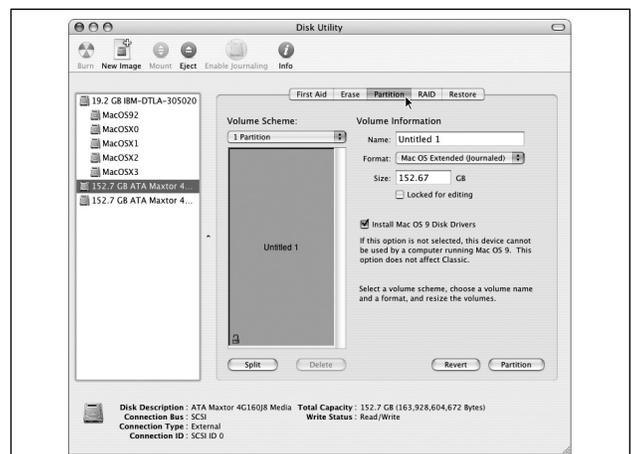


Figure 13

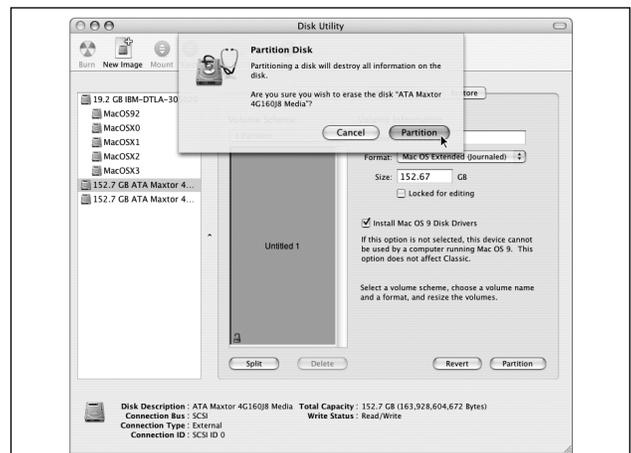


Figure 14

Quick Start Guide for Tempo RAID133

8. Move DIP switch 2 on the Tempo RAID133 to ON to select the striping mode (Figure 15).
9. If you removed the card to move the DIP switches, verify the card is seated firmly in the slot.
10. Recheck the cable connections; make sure all cables are properly connected to the Tempo RAID133 and the hard drives.
11. Close the computer and carefully replace its case cover; be very careful not to crimp the cables.
12. Turn on your computer. During the boot process, the information window stating “You have inserted a disk containing no volumes that Mac OS X can read” may appear. If this is the case, click the Initialize... button to launch Disk Utility.



Support Note: The Tempo RAID133 creates one striped volume for each pair of hard drives installed—one pair of drives creates one volume, two pairs of drives create two volumes.

13. If it is not already open, launch Disk Utility again (Figure 16). Note that each pair of drives connected to the Tempo RAID133 now appear as single volumes.
14. Select the first volume you will format (as a RAID volume) by single-clicking the drive symbol (Figure 16).
15. Click the Partition button (Figure 17). When the *Partition* window appears, click on the drop-down menu beneath “Volume Scheme:” and select a number of partitions for the volume; you may optionally choose to partition each RAID volume to create two or more smaller “virtual” drives to store and retrieve data faster and more efficiently.
16. Type a name for your RAID volume in the Name field (Figure 17). Make sure that the “Install Mac OS 9 Disk Drivers” option is checked, and then click the Partition button at the bottom of the window.

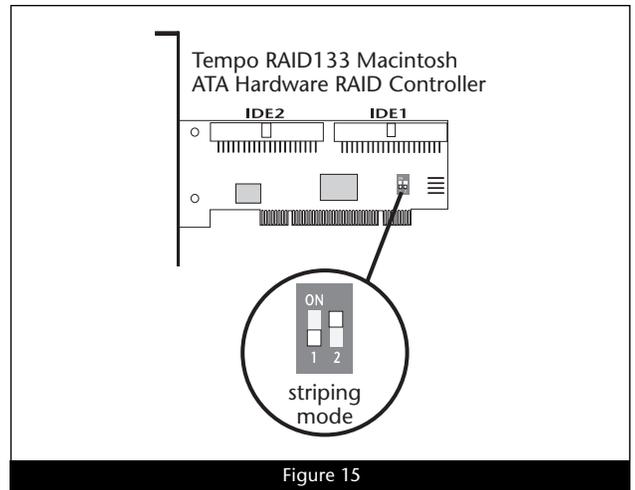


Figure 15

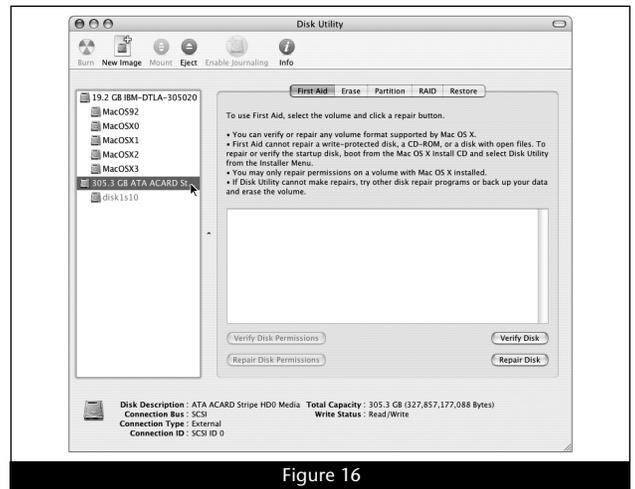


Figure 16

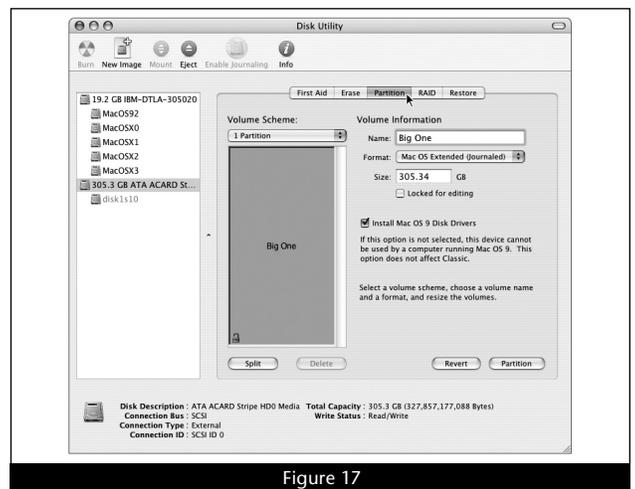


Figure 17

Quick Start Guide for Tempo RAID133

- When the *Warning* window appears, click the Partition button (Figure 18). If necessary, repeat steps 14–16 to partition another volume connected to the Tempo RAID133. Close Disk Utility; your drives are ready to use.

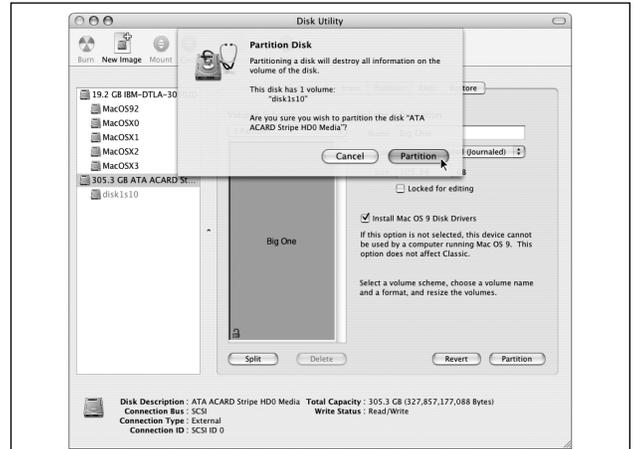


Figure 18