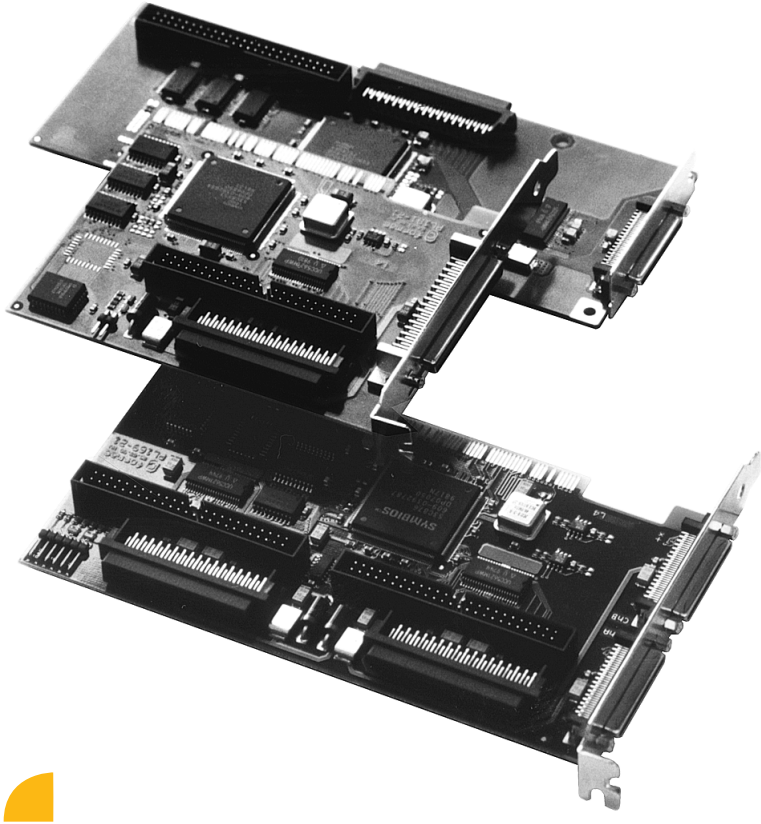
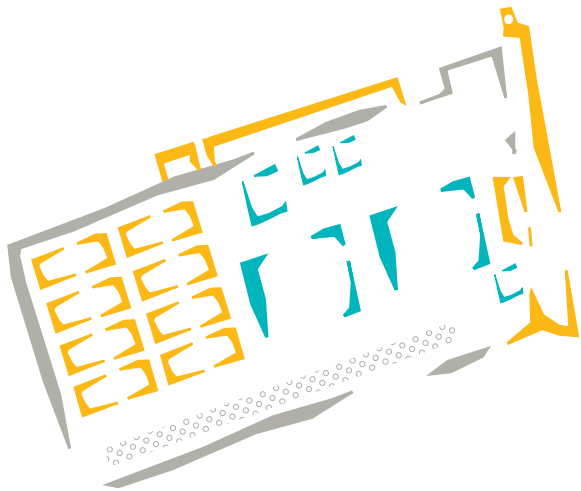
ProRaid Handbuch

ProRaid manual

ProRaid manuel



Formac



formac Ltd

Unit 29,

Bow Industrial Estate

118 Carpenter Road

Stratford, London E15 2DZ

Tel: +44 (0)181 533 4040

Fax: +44 (0)181 533 2495

Contents

1. Introduction **6**

1.1 Technical Specification for the ProRaid I and II Cards 7

1.2 Technical Specification for the iProRaid Card 8

1.3 System Requirements 8

2. Installing your Formac ProRaid Card 9

2.1 General Guidelines and Safety Instructions 9

2.2 Important Installation Instructions 9

2.3 Overview of the ProRaid Card 10

2.4 Overview of the ProRaid II Card 10

2.5 Installing the ProRaid I and II Hardware 11

2.5.1 Installation in a Desktop Macintosh (PowerMac 7200/7600)11

2.5.2 Installation in a Desktop Macintosh (PowerMac 7200/7600)12

2.6 Overview of the iProRaid Card 13

2.7 Installing the iProRaid Hardware 14

2.8 Connecting Disc Drives and other SCSI peripherals 21

3. System Upgrades 22

4. Licence Agreement and Copyright 23

E

1. Introduction

Congratulations on your decision to purchase a ProRaid card from Formac. The ProRaid card is the solution for those wanting more from their Macintosh.ProRaid cards are compatible with all programs supported by SCSI Manager 4.3. Each channel on the cards supports an 8- and 16-bit internal connection and a 16-bit external connection.

Main features:

- Bus Master Card with Direct Memory Access
- Supports SCSI-1, SCSI-2 and SCSI-3 as well as Fast, Wide and Ultra
- Connections for 8- and 16-Bit SCSI devices
- No jumpers
- Compatible with SCSI Manager 4.3
- For disc drives, MO's, CD-ROM, DAT, scanners and removable drives

Packing List :

- ProRaid card
- ProRaid manual
- Software on Floppy disc/CD
- 68-pin internal SCSI cable (external with the iProRaid)
- User manual

1.1 Technical Specification for the ProRaid I and II Cards

Hardware :

	ProRaid	ProRaid II
DataBus	PCI	PCI
Device Protocol	Bus Master with Direct Memory Access	Bus Master with Direct Direct Memory Access
Number of SCSI channel	1	2
PCI Bus data rate	133MB/s max.	133MB/s max.
Synchronised data rat	40MB/s max.	2 x 40MB/s max.
Number of supported devices	Up to 15 single-ended SCSI devices per channel	
Drive types supported	Fixed disc, MO's, CD-ROM, DA, scanners and removable drives	
Termination	Active	Active
Internal connections	1 x 8-bit 50-pin SCSI[PARA], 1 x 16-bit 68-pin Wide SCSI	2 x 8-bit 50-pin SCSI[PARA] 2 x 16-bit 68-pin Wide SCSI
External connections	1 x 16-bit 68-pin Wide SCSI	2 x 16-bit 68-pin Wide SCSI
Miscellaneous	- Support for scatter/gather high-speed data transfer[PARA] - Flash-EPROM for driver updates[PARA] - Simultaneous connection of 8- and 16-bit drives[PARA] - Integrated memory for faster SCSI command execution[PARA] - Compatible with SCSI Manager 4.3[PARA] - Boot-capable[PARA] - No jumpers	

E

1.2 Technical Specification of the iProRaid Card

Hardware:

	ProRaid iMac
DataBus	Mezzanine
Interface protocol	Bus Master with Direct Memory Access
Device Protocol	SCSI-1, SCSI-2, SCSI-3, fast, Wide, Ultra
Number of SCSI channels	1
PCI Bus data rate	133MB/s max.
Synchronised data rate	40MB/s max.
Number of supported devices	15 single-ended SCSI devices per channel
Supported drive types	Fixed disc, MO's, CD-ROM, DAT. Scanners, removable drives
Termination	Active
Internal connections	None
External connections	1 x 16-Bit 68-pin Wide SCSI
Miscellaneous	- Support for scatter/gather high-speed data transfer[PARA] - Flash-EPROM for driver updates[PARA] - Simultaneous connection of 8- and 16-bit drives[PARA] - Integrated memory for faster SCSI command execution[PARA] - Compatible with SCSI Manager 4.3[PARA] - Boot-capable[PARA] - No jumpers

1.3 System Requirements

- PCI PowerMacintosh or compatible
- Operating system 7.5.3 or higher

2. Installing the Formac ProRaid Card

2.1 General Guidelines and Safety Instructions

1. Always take suitable anti-static precautions before handling the ProRaid card.
2. Ensure that the Macintosh has been shut down correctly and the power lead removed before installing/removing a ProRaid card.
3. Always ensure that the casing is securely closed before switching on the Macintosh.
4. Never use force to fit a ProRaid card in a PCI slot; the fit is exact and it should be possible to insert the card with minimum effort.
5. Do not power on the ProRaid card immediately after a strong clima tic change. If the ProRaid card has been stored in a cold or damp environment, allow the card enough time to acclimatise to the new conditions before powering on.

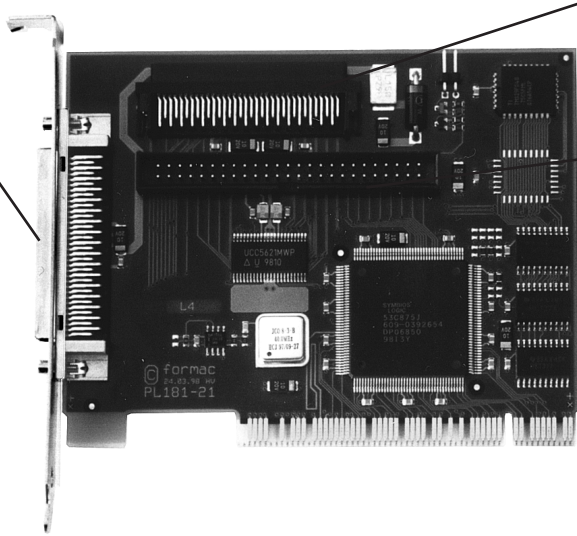
2.2 Important installation instructions

Please read before continuing!

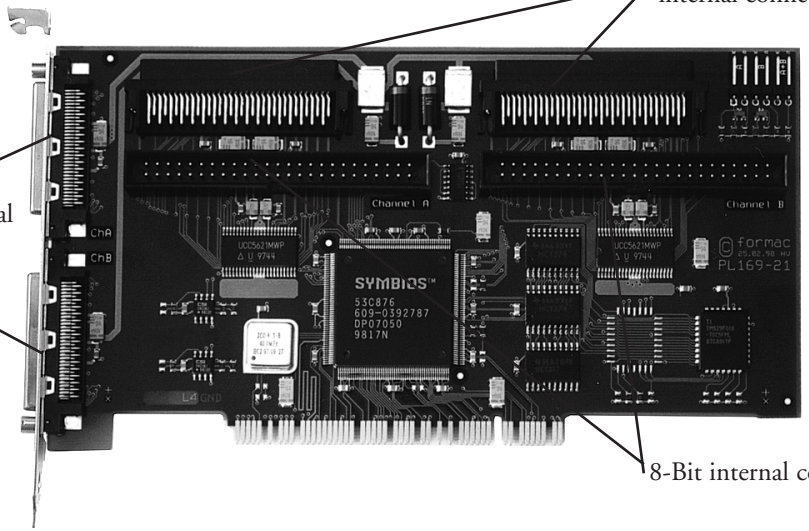
Please observe the following points before installing the ProRaid card:

1. Ensure that the Macintosh is switched off and the power lead removed.
2. Be wary of static charges and ground yourself by touching an earthed object before touching the ProRaid card or electronic componentsinside the Macintosh.
3. This guide is issued under the assumption that you are already familiar with the installation of PCI cards in your Macintosh. If this is not the case please read the appropriate sections in the manual supplied with your Macintosh before proceeding. As such we have given two examples in this guide.
4. Never try to open the Macintosh casing while it is switched on.
5. Further information about the installation of expansion cards can be found in the accompanying Apple guide to your Macintosh.

2.3 Installation Hardware ProRaid I und II

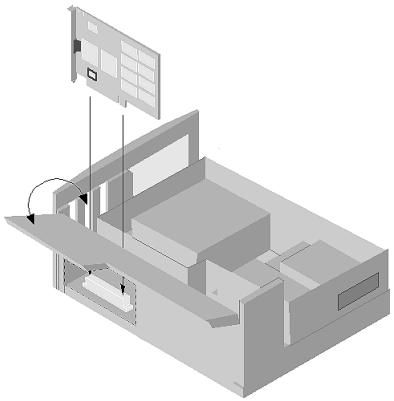


2.4 Overview of the ProRaid II Card



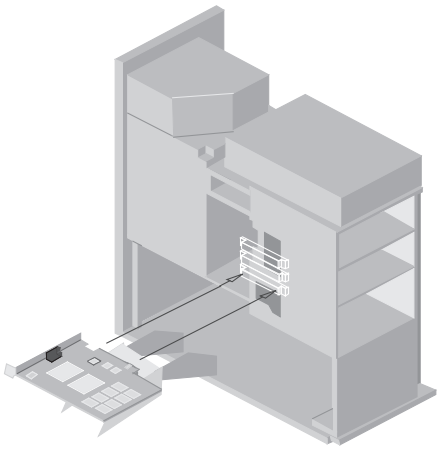
2.5 Installing the ProRaid I and II Hardware

2.5.1 Installation in a Desktop Macintosh (PowerMac 7200/7600)



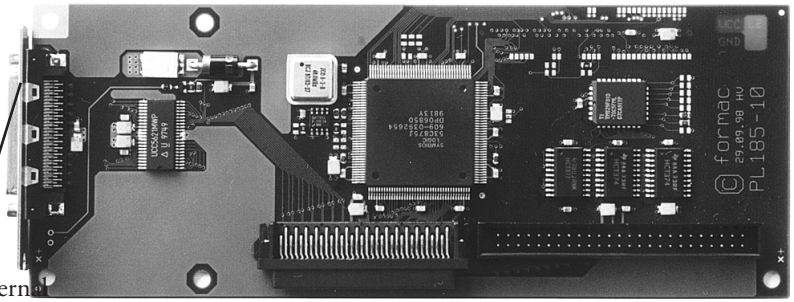
Installing a ProRaid card in this Macintosh model is very easy. First disconnect the power lead. At the front, underneath the drive, you will find two catches; push these up and pull the cover forwards about 2cm and then lift up to remove it. Pivot the expansion card cover to one side and fit the video card in any of the free PCI slots on the motherboard.
Remove the corresponding blanking plate in the rear panel. Replace the cover and ensure that it positively engages with any fitted cards.
Replace the top cover and reconnect all disconnected cables.

2.5.2 Installation in a Mini-tower Macintosh (PowerMac 8500/9500)



This installation is also relatively straightforward, but special care is required in the removal and replacement of the top cover. Remove all attached cables and undo the 4 screws on the rear panel of the Macintosh. Gently pull the cover forwards and the lift it straight up. Swing the fan assembly to one side to reveal the PCI slots, 3 slots in a PowerMac 8500 and 6 in a PowerMac 9500. Any free slot can be used for the Formac ProRaid card. Remove the blanking plate in the rear panel corresponding to the slot you wish to use and push the card firmly into the slot ensuring that connecting cables have enough clearance to the connectors on the card. Swing the fan assembly back into place, ensuring it positively locates on all fitted cards. Refit the top cover by reversing the removal procedure.

2.6 Overview of the iProRaid Card



2.7 Installation the iProRaid Hardware

We recommend that you let your Dealer install the iProRaid card in your iMac as it requires specific technical knowledge of this Macintosh. If you intend to install the card yourself and any damage occurs to the Macintosh, this will most likely not be covered by your Dealer warranty. Consult your Dealer for information on this, specifically on the issue of the installation of cards and the effect of this on the warranty.

E

2.7.1 Installing the iProRaid

Remove all connected cables so that you have only the iMac in front of you. Place the iMac screen down with the bottom facing towards you, taking care to protect the screen. Use a soft pad if possible to keep the iMac steady. Undo the cross-head screw shown in figure 1.

Figure 1

Next the casing should be removed by pulling gently upward and forward using the moulded plastic handle. Be careful not to damage the plastic locating lugs shown in figure 2 during removal.

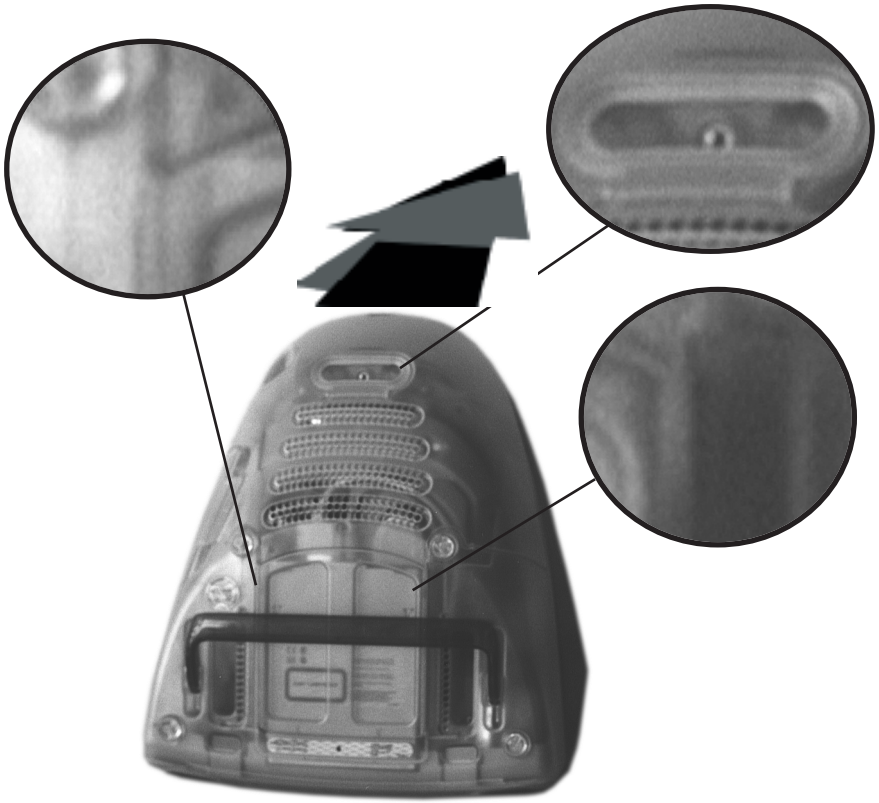


Figure 2

E

Note! Before proceeding any further the metal casing of the iMac must begrounded by touching it with an earthed object to remove any static charge.
Once the cover has been removed, detach the brackets shown in figure 3 followed by the 4 cables from the motherboard as shown in figure 4 (a screwdriver will be required for the video cable).

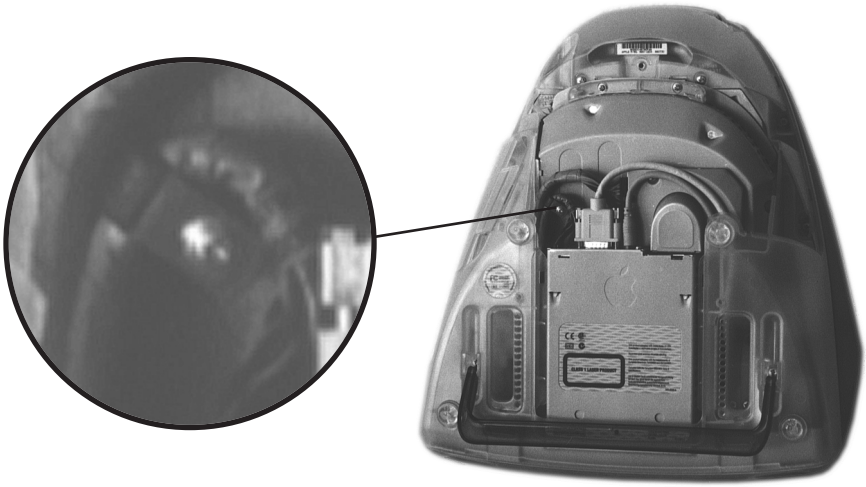


Figure 3

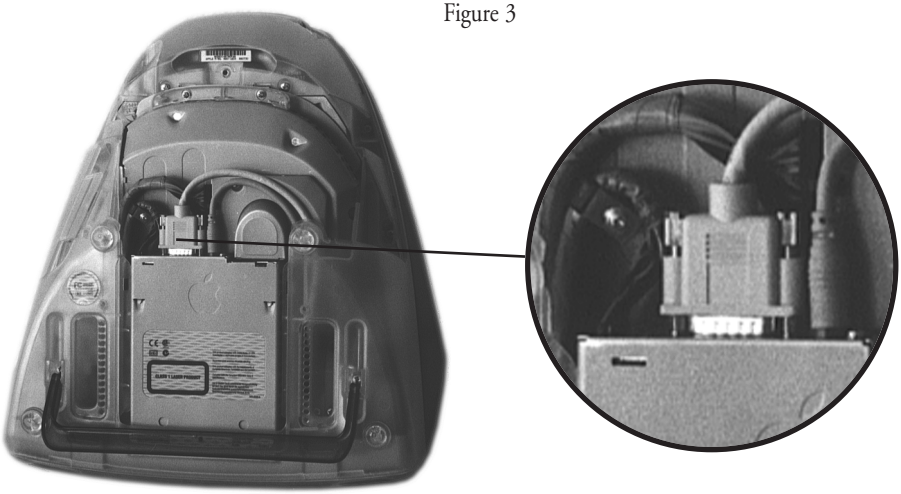


Figure 4

Once the cables have been removed from the motherboard, move the cables to one side to allow better access. There are two cross-headed screws in the plastic handle that have to be removed after which the motherboard can be carefully pulled upwards to remove it (see figures 5 and 6).

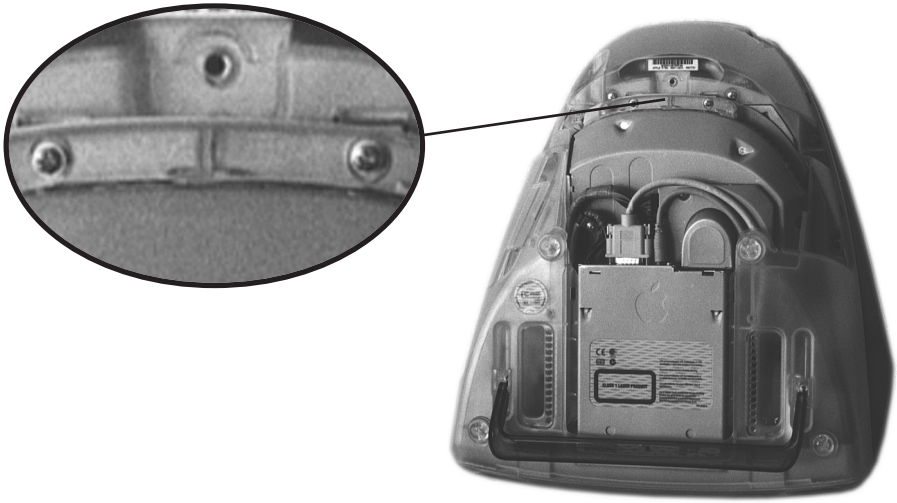


Figure 5

Figure 6

E

Place the motherboard in front of you in the orientation shown in figure 7 and remove the cross-head screws indicated

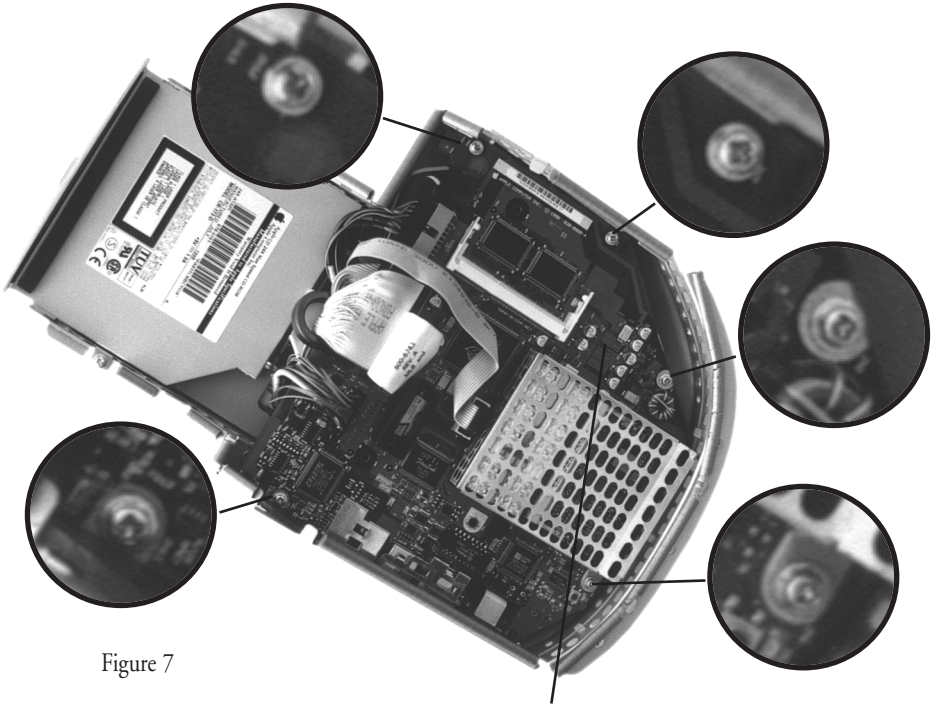
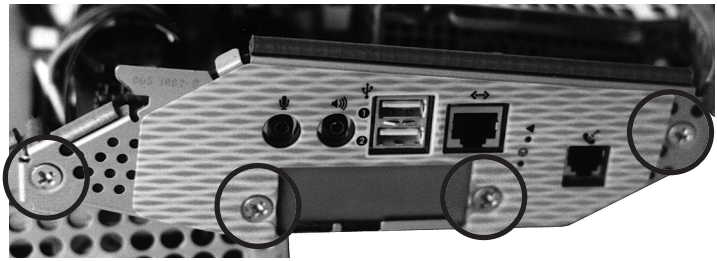


Figure 7

Care should be taken when removing this circuit board to ensure that the connector on the reverse side at this location is not damaged as it is removed from the board underneath. Figure 9 shows this connector more clearly. Remove the screws holding the side panel and the cover, through which the SCSI connector on the iProRaid can be accessed.

Figure 8



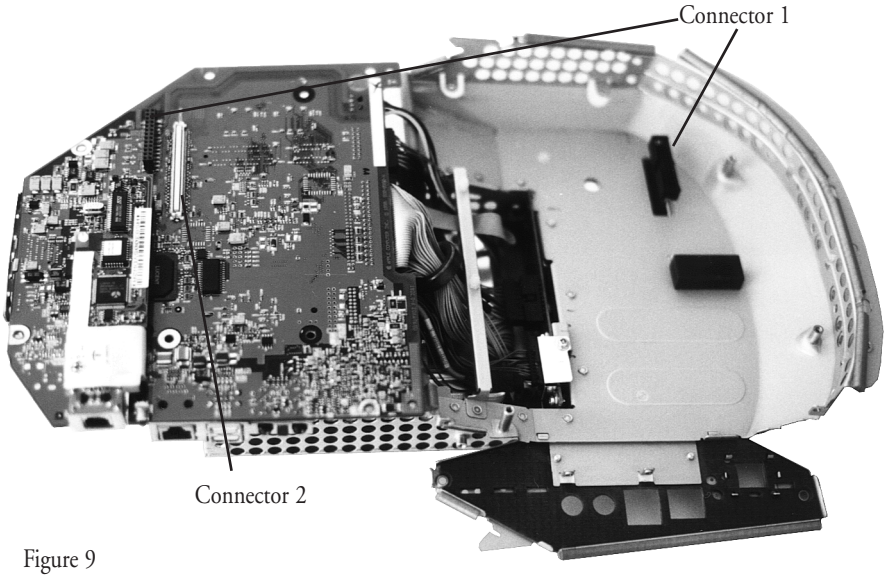


Figure 9

Take the iProRaid card and fit it to connector 2 (shown in figures 9 and 10) so that it's SCSI connector is aligned on the same side as the other connectors (such as network, USB, modem etc.).

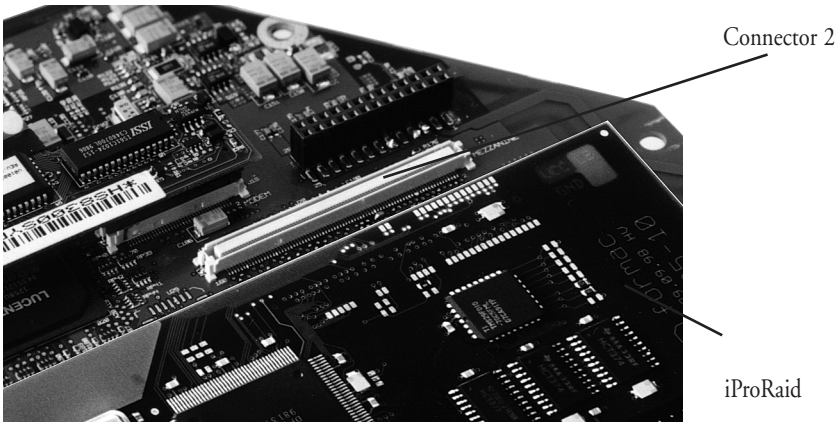
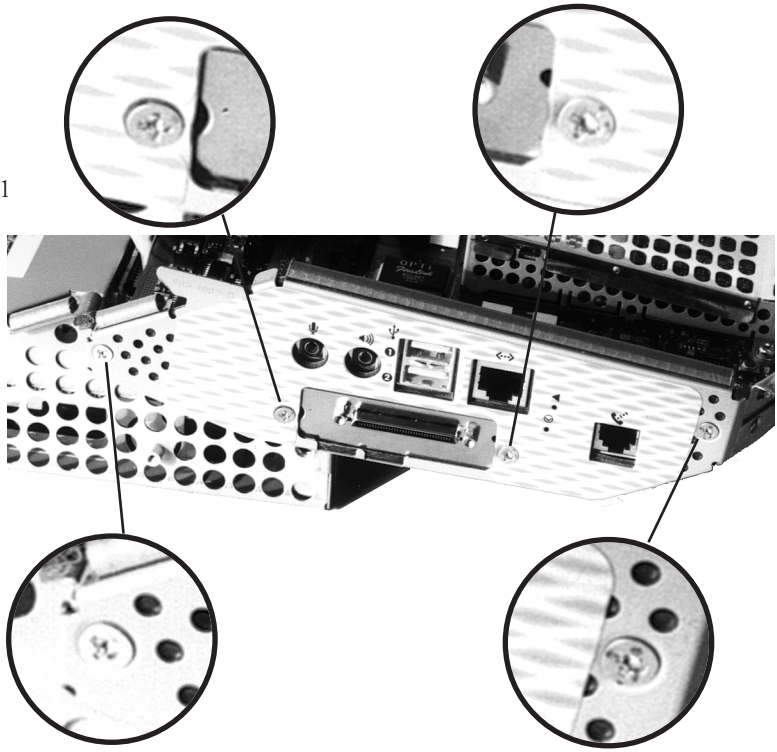


Figure 10

E

When fitting the iProRaid card to the motherboard, make sure that the three spacers delivered with it are fitted in the appropriate holes on the iProRaid card.
Press down lightly on the iProRaid card to attach it to the motherboard and check that the three spacers have located in the corresponding holes in the motherboard. Start the re-assembly procedure by reversing the steps taken until you reach the point illustrated in figure 11.
If installed correctly, the iProRaid card be should be fitted to the iMac circuit boards as shown in figure 11 whereupon the two screws illustrated in the lower two section diagrams should be pulled out and used to fix the card as shown in the top two section diagrams.

Figure 11



To finish the installation, reverse the remaining steps and reconnect all cables and the SCSI cable for the external devices to be used with the iProRaid controller.

2.8 Connecting Disc Drives and other SCSI Peripherals

Once the ProRaid card has been installed you can connect your disc drive (or other SCSI devices).

To connect these use the cable delivered with the ProRaid card. You can connect 8- and 16-bit devices at the same time.

Warning!
Please note that only two connectors can be used at any one time i.e. if you are using the internal 8- and 16-bit connectors at the same time then no external devices can be connected.
Alternatively, if you are using the external 16-bit connector then either the internal 8-bit or the 16-bit connector can be used.

When allocating SCSI ID numbers please check that your hard disc driver supports the use of the identical SCSI IDs across different channels and in the case of Ultra-connections, SCSI IDs higher than 6. Some older drivers do not support these.

If you are connecting internal or external devices to the ProRaid card, ensure that the last physical device in the SCSI chain is correctly terminated.

Once all internal devices have been connected you can re-assemble your Macintosh and install a hard disc driver such as the Formac Manager.

3. System Upgrades

Formac makes every effort to ensure that new products and software in development are fully compatible with all Macintosh models and major software releases on the market, conducting stringent tests with many different application programs.
At the time of writing this guide the ProRaid cards have been tested in all current expandable (PCI-) PowerMacintosh models.
Despite this, it is still possible that there will be compatibility issues with new models or operating systems that were still in development at Apple and as such were not available for testing at Formac. Formac tests all new Apple equipment as soon as it is available.
Any problems found are immediately dealt with, either through a hardware or software changes. These solutions are made available to Apple dealers as quickly as possible. If you encounter difficulties as a result of a system upgrade, contact your Apple dealer or check our Internet Web site at http://www.formac.com to see if an EPROM upgrade is available for your card. It would be helpful in these circumstances if you knew what the current version of your EPROM was. This can be found on a sticker on the flash-EPROM on the ProRaid card. If an upgrade is available, this can be uploaded using the program supplied with your ProRaid card.

4. License agreement and Copyright

This handbook and the software described within are protected by copyright. All rights reserved. Copying, reproduction or entering this manual or software into an electronic data retrieval system or computer in part or in whole is not permitted. The production of an authorised copy for security or backup is the only exception.
Claims against Formac concerning the software and hardware described in this book must comply with the conditions of the guarantee. Any other claim will not be considered. Formac does not guarantee the accuracy of the contents of this guide.

Apple and Macintosh are registered trademarks of Apple Computer, Inc.

(c)Formac Elekronik GmbH 1995, 1996, 1997, 1998 All rights reserved!
June 1998