



MANUAL

## EM2001 - 2 Port PCI SATA Controller

[WWW.EMINENT-ONLINE.COM](http://WWW.EMINENT-ONLINE.COM)

# EM2001 - 2 Port PCI SATA Controller



## Warnings and points of attention

Opening a product and/or products may cause serious injuries! Always have products repaired by qualified Eminent personnel!

## Table of contents

1.0 Warranty conditions .....	2
2.0 Introduction.....	2
2.1 Functions and features .....	3
2.2 Packing contents.....	3
3.0 Installation procedure.....	3
3.1 Installing the Serial ATA Card .....	3
3.2 Driver installation.....	3
3.3 New Windows installation (Windows 2000 and XP) .....	4
4.0 Using RAID (optional) .....	5
4.1 Creating a RAID configuration.....	5
4.2 Other RAID functions .....	6
5.0 Using the VIA V-RAID Utility .....	7
6.0 Frequently asked questions .....	7
7.0 Service and support .....	7

## 1.0 Warranty conditions

The five-year Eminent warranty applies for all Eminent products unless mentioned otherwise before or during the moment of purchase. When having bought a second-hand Eminent product the remaining period of warranty is measured from the moment of purchase by the product's first owner. The Eminent warranty applies to all Eminent products and parts indissolubly connected to and/or mounted on the main product. Power supply adapters, batteries, antennas and all other products not integrated in or directly connected to the main product and/or products of which, without reasonable doubt, can be assumed that wear and tear show a different pattern than the main product are not covered by the Eminent warranty. Products are not covered by the Eminent warranty when exposed to incorrect/improper use, external influences and/or when opened by parties other than Eminent.

## 2.0 Introduction

Congratulations on your purchase of this high-quality Eminent product! This product has undergone extensive testing by Eminent's technical experts. Should you experience any problems with this product, you are covered by a five-year Eminent warranty. Please keep this manual and the receipt in a safe place.

*Register this product now on [www.eminent-online.com](http://www.eminent-online.com) and receive product updates!*

## **2.1 Functions and features**

The Serial ATA Card allows you to connect serial ATA hard disks to your computer. Thanks to the high transfer rate of 1.5Gbit/sec all data are quickly processed. The Serial ATA Card also provides RAID support. Furthermore, the card is equipped with a parallel ATA/IDE port, allowing you to connect additional parallel ATA/IDE hard disks to your computer.

## **2.2 Packing contents**

The following parts need to be present in the packing:

- EM2001, 2 Port PCI Controller SATA.
- SATA connection cable.
- CD-rom with drivers.
- User guide.

## **3.0 Installation procedure**

Follow the steps below to install the Serial ATA Card on your computer.

### **3.1 Installing the Serial ATA Card**

1. Remove the computer's main cable from the wall outlet.
2. Remove all cables connected to the computer.
3. Unscrew the cover from the computer casing.
4. Insert the Serial ATA Card straight and firmly into an available PCI slot (the short, white connection on the motherboard). The card should preferably not be placed in the first or last PCI slot. Placing the card in the first or last PCI slot can result in hardware conflicts.
5. Attach the card to the chassis of the computer.
6. Attach the Serial ATA hard disks to the Serial ATA Card with the enclosed SATA cable.
7. Close the computer casing.
8. Reconnect all cables.
9. Start up the computer.

### **3.2 Driver installation**

1. Windows will detect new hardware.
2. Click 'Cancel'.
3. Place the supplied CD-rom in the CD-rom or DVD drive.

4. The CD-rom will run automatically.
5. Select 'Install EM2001'.
6. Click 'Next'.
7. Select 'I accept the agreement'.
8. Click 'Next'.
9. Click 'Next'.
10. Click 'Next'.
11. Remove the CD-rom.
12. Restart your computer.

*Windows XP might display a Windows Logo test error message. Choose 'continue anyway' when this message appears.*

### **3.3 New Windows installation (Windows 2000 and XP)**

Follow the instructions below when you are running a new Windows installation on a SATA hard disk that is connected to the Serial ATA Card.

1. Place an empty 1.44Mb floppy disk in the disk drive of your computer.
2. Place the supplied CD-rom in the CD-rom or DVD drive.
3. The CD-rom will run automatically.
4. Select 'Create Driver Disk'.
5. A new screen will appear.
6. Select the Windows version you wish to install under 'Target OS'.
7. Select your 1.44Mb disk drive under 'Target Drive'.
8. Click 'Next'.
9. Click 'Next'. The files will now be copied to the 1.44Mb disk.
10. Click 'Ok'.
11. Remove both the CD-rom and the 1.44Mb disk from your computer.
12. Place the Windows installation CD-rom in the CD-rom or DVD drive of your computer.
13. Start the Windows installation procedure.
14. Press F6 on your keyboard when the message 'Press F6 if you need to install a third party SCSI or RAID driver...' appears.
15. Place the 1.44Mb disk in the disk drive of your computer.
16. Press the 'S' key on your keyboard to enter the location of the drivers.
17. Select the 1.44Mb disk drive.
18. Press the 'Enter' key on your keyboard.
19. Windows will continue with the regular installation procedure.

*Eminent is not the manufacturer or supplier of Windows. Therefore we do not give any support on the installation of Windows. Consult the official Microsoft Windows installation manual for questions about the installation of Windows.*

## 4.0 Using RAID (optional)

RAID stands for Redundant Array of Independent Disks. Two or more hard disks are used with RAID to create a system which is resistant to failures (also called fault tolerant) and/or provides better and faster data throughput. This is done by connecting the hard disks to each other in a certain way using RAID.

*Using RAID is optional. We have added this function as an extra option to the Serial ATA Card. It is not necessary to use RAID in order to use the Serial ATA Card.*

1. During the start up of your computer (before the Windows screen appears) a message 'Press TAB Key Into User Window!' appears.
2. Press the TAB key on your keyboard when this message is displayed.
3. The RAID control panel will be opened.

'Create Array'	Enables you to create a RAID configuration.
'Delete Array'	Enables you to remove an existing RAID configuration.
'Select Boot Array'	Enables you to indicate from which RAID configuration the computer needs to boot.
'Create/Delete Spare'	Enables you to expand the current RAID1 configuration.
'Expand SPAN (JBOD) Array'	Enables you to expand the current RAID SPAN configuration.
'Serial Number View'	Enables you to view the serial numbers of the disks within a RAID configuration.

*Attention! You can select an option by using the arrow keys (navigation keys) on your keyboard and press the 'Enter' key to confirm an option.*

### 4.1 Creating a RAID configuration

1. Select 'Create Array' and press 'Enter'.
2. Select 'Array Mode RAID1 (Mirroring)' and press 'Enter'.
3. Select 'RAID0 For Performance', 'RAID1 For Data Protection', 'RAID SPAN For Capacity' or 'RAID 0/1' to create a RAID configuration and press 'Enter'.
4. Select the option 'Autosetup for...' and press 'Enter'.
5. Choose 'Y' to continue.
6. The message 'Create New Array' appears. The selected RAID configuration has been created.

**RAID0:** With this option, at least two hard disks of (preferably) identical size and brand are connected to the RAID controller. The data will be evenly divided between the two disks. The operating system and other programs will also be balanced between two hard disks instead of one. With this option (striping) the computer only sees one hard disk and not the two that are connected to the RAID controller. The only disadvantage

of this configuration is that RAID0 does not have error recognition. All data will get lost when one of the disks fails. The advantage however is a much faster performance.

**RAID1:** This configuration consists of two hard disks that always contain the exact same data. One disk is a mirror image of the other. If you connected two hard disks, both with a capacity of 200Gb, one of the disks will function as a mirror. Your operating system will detect 200Gb and not two times 200Gb. As a user, you will not notice that the computer is using a RAID1 configuration. The computer has a C: drive and when you place data on this drive, 'behind the screens' the same data will automatically be placed on the mirror disk by the RAID controller. This configuration allows you or your computer to keep on working if one of the disks should fail. The computer will keep running on one disk. This RAID configuration will not provide faster performance but will guarantee safety for your data.

**RAID SPAN:** Two hard disks will be used in series. Lets say you own two hard disks. The capacity of hard disk 1 is 120Gb, while the capacity of hard disk 2 is 200Gb. RAID SPAN then allows you to create one large hard disk with a capacity of  $120+200=320$ Gb. Both the BIOS and the operating system will detect one hard disk with a capacity of 320Gb. However, this RAID configuration does not have error recognition and it is not as fast as a RAID0 configuration.

**RAID 0/1:** In this configuration four hard disks will be connected to the RAID controller. Two SATA disks using the serial/SATA ports and two IDE disks using the parallel/IDE port with one IDE cable, where disk 1 is set as Master and the other disk is set as Slave. Two RAID0 configurations will then be created, one configuration existing of the two SATA disks and the other consisting of the two IDE disks. Both configurations will then be mirrored like a RAID1 configuration, meaning that both configurations will contain the same data. This combination will provide the safety of a RAID0 configuration and the capacity of a RAID SPAN configuration. Because the RAID 0/1 configuration uses IDE, the performance is slower than that of the other RAID configurations.

## 4.2 Other RAID functions

Apart from creating or removing a RAID0 or RAID1 configuration, you will also find the options 'Create/Delete Spare' and 'Expand SPAN (JBOD)'.

- Select 'Create/Delete Spare' if you wish to connect an additional hard disk to your RAID1 configuration. The data will be mirrored on this hard disk, increasing the safety. Even if two hard disks should fail you will still be able to keep working.
- Select 'Expand SPAN (JBOD)' if you already created a RAID SPAN configuration. This option allows you to add another hard disk to your existing RAID SPAN configuration to increase the capacity.

*Eminent does not give active helpdesk support on advanced RAID configurations.*

## 5.0 Using the VIA V-RAID Utility

During the installation of the drivers, as explained in chapter 3, a utility will be installed (VIA V-RAID Utility) that allows you to configure and manage your RAID configuration. Click 'Start' and 'All Programs'. Select 'VIA' and choose 'VIA V-RAID Utility' to open this program. A new screen will appear.

This screen is split into three fields. In the upper left field you will see the hard disks present in the RAID configuration or the structure of the RAID configuration, depending on which view you have chosen. Use the two buttons in the upper left of the screen to switch between the first view (left button) or the structure view (right button).

In the bottom left field you will find a number of options, which allow you to add or remove hard disks and view the status of the connected hard disks.

If you select an item in the upper left field, information about this item will be shown in the right field.

*Hint: Press the F1 key on your keyboard to summon the help function. All functions and items of the VIA V-RAID Utility will be explained here.*

## 6.0 Frequently asked questions

**Q:** What is the function of JP1?

**A:** The jumper is for hard disk LED.

## 7.0 Service and support

This users manual has been carefully written by Eminent's technical experts.

If you have problems installing or using the product, please fill out the support form at the website [www.eminent-online.com/support](http://www.eminent-online.com/support).

# Declaration of Conformity

To ensure your safety and compliance of the product with the directives and laws created by the European Commission you can obtain a copy of the Declaration of Conformity concerning your product by sending an e-mail message to: [info@eminent-online.com](mailto:info@eminent-online.com). You can also send a letter to:

Eminent Computer Supplies  
P.O. Box 276  
6160 AG Geleen  
The Netherlands

Clearly state 'Declaration of Conformity' and the article code of the product of which you would like to obtain a copy of the Declaration of Conformity.



Trademarks: all brand names are trademarks and/or registered trademarks of their respective holders.

The information contained in this document has been created with the utmost care. No legal rights can be derived from these contents. Eminent cannot be held responsible, nor liable for the information contained in this document.



Eminent is a member of the Intronic Group