

Serial ATA 4-Channel RAID Quick Installation Guide

Introducing the *Serial ATA 4-Channel RAID*

The *Serial ATA 4-Channel RAID* is an ultra high-speed four channel Serial ATA controller for use in Pentium class computers. It achieves burst data transfer rates up to 150MB/s (1.5Gb/s) and supports various brands of hard disk drives with capacities greater than 137GB.

Features and Benefits

- Compliant with Serial ATA Specification, revision 1.0
- Compliant with PCI Specification, revision 2.2
- Provides four independent channels to support up to four Serial ATA drives
- Co-exists with on-board Ultra ATA controller
- Supports 32-bit wide PCI bus at 66MHz
- Supports RAID 0 (striping), RAID 1 (mirroring) and RAID 10 (mirroring+striping) RAID Arrays and Single and JBOD modes
- Lower pin count and voltage requirement, plus better cabling over traditional Parallel ATA make Serial ATA the controller of the future

System Requirements

- Pentium or equivalent computer with one available PCI slot
- Windows® 7 (32-/64-bit) / Vista (32-/64-bit) / XP (32-/64-bit) / Server 2003 & 2008 (32-/64-bit) / 2000

Package Contents

- *Serial ATA 4-Channel RAID*
- 4 Serial ATA data cables (1M)
- 2 Dual Connector Serial ATA power cables
- 2 "Y" split power cables
- Driver CD
- Quick installaton guide

Layout

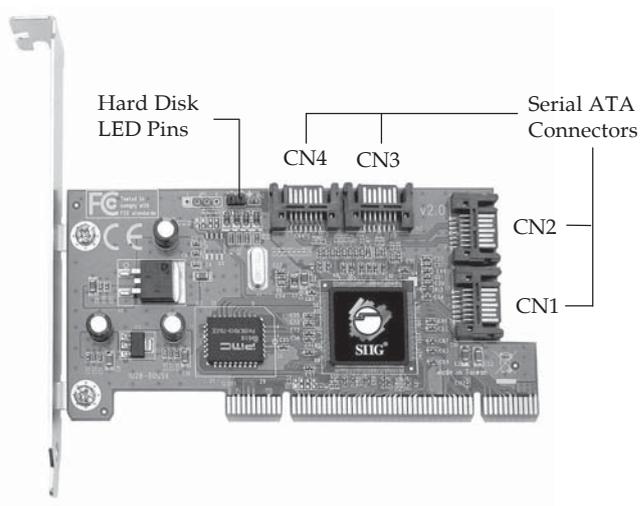


Figure 1. Serial ATA 4-Channel RAID layout

Hardware Installation

General instructions for installing the card are provided below. Since the design of computer cases and motherboards vary, refer to your computer's reference manual for further information, if needed.

Static electricity discharge may permanently damage your system. Discharge any static electricity build up in your body by touching your computer case for a few seconds. Avoid any contact with internal parts and handle cards only by their external edges.

1. Turn OFF the power to your computer and any other connected peripheral devices.
2. Unplug the power cord from the back of the computer.
3. Remove your computer's cover.
4. Remove the slot bracket from an available PCI slot.
5. To install the card, carefully align the card's bus connector with the selected PCI slot on the motherboard. Push the board down firmly, but gently, until it is well seated.
6. Replace the slot bracket's holding screw to secure the card.
7. Now go to **Device Connection** to connect your Serial ATA hard disk drives.

Device Connection

It is recommended to use identical hard drives for all RAID configurations, however, it's possible to combine hard drives of different sizes and makes.

1. Install your hard disk drive(s) in the chassis.

2. Connect the Serial ATA hard disk drive to the system power supply using the included *Dual Connector Serial ATA power cable*.
3. Connect one end of the *Serial ATA data cable* to the hard disk drive.

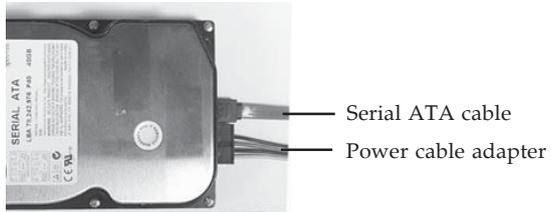


Figure 2. Hard disk drive connections

4. Attach the other end of the *Serial ATA data cable* to the Serial ATA connector on the *Serial ATA 4-channel RAID*.

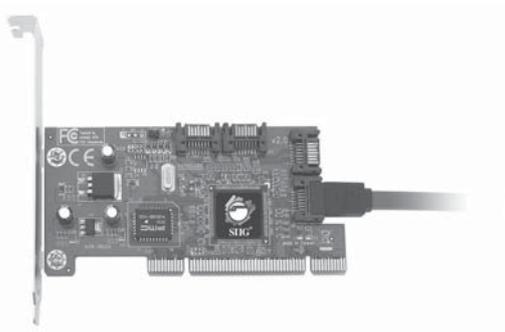


Figure 3. Connecting the Serial ATA cable

5. Follow the same instructions to connect up to four hard drives. Device connection is now complete.

Note: If it is your desire to monitor disk activity of the Serial ATA hard drives, you may at this time connect the hard disk LED of the system case to the **Hard Disk LED Pins** on the Serial ATA controller, see **Board Layout** on page 2 for the location of the pins. All four **Serial ATA Connectors** activate the LED. For most systems connect the **Red** wire to the pin farthest from the mounting bracket.

6. Replace the computer cover and reconnect the power cord. Go to **RAID Arrays** to configure the RAID BIOS.

RAID Arrays

RAID Arrays are setup in the *Serial ATA 4-Channel RAID BIOS*.

RAID0 (Striping)

This RAID array to be used on **New/Blank** hard drives. Striping will destroy existing data on the hard drive.

For Manual Configuration

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **RAID0**, then press **Enter**.
4. Select the number of drives then press **Enter**.
5. Select **Manual configuration** then press **Enter**.
6. Select chunk size from **4k, 8k, 16k, 32k, 64k** or **128k**, then press **Enter**.
7. Select the **first drive**, press **Enter**.

8. Select the **second drive**, press **Enter**.
9. If applicable select the **3rd** and **4th** drives pressing **enter** after each selection.
10. After selecting the last drive, you are asked **Are You Sure (Y/N)?**, press **Y** to accept.
11. Press **Ctrl+E** to exit the BIOS.
12. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.
13. Continue with Fdisk and Format steps as if you were installing a conventional hard drive.

For Auto Configuration

The default chunk size is **64k** when selecting **Auto configuration**.

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **RAID0**, then press **Enter**.
4. Select the number of drives then press **Enter**.
5. Select **Auto configuration**, then press **Enter**.
6. When asked **Are You Sure (Y/N)?**, press **Y** to accept.
7. Press **Ctrl+E** to exit the BIOS.
8. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.
9. Continue with Fdisk and Format steps as if you were installing a conventional hard drive.

RAID 1 (Mirror)

For New/Blank Hard Drives

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. At the next screen select **RAID1** then press **Enter**.
4. Select **Auto configuration**, then press **Enter**.
5. When asked **Are You Sure (Y/N)?**, press **Y** to accept.
6. Press **Ctrl+E** to exit the BIOS.
7. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.
8. Continue with Fdisk and Format steps as if you were installing a conventional hard drive.

For Existing Hard Drives with Data

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. At the next screen select **RAID1** then press **Enter**.
4. Select **Manual configuration**, then press **Enter**.
5. Select the **Source** drive, press **Enter**.
6. Select the **Target** drive, press **Enter**.
7. Select **Create with data copy**, then press **Enter**.
8. Select **online copy**, then press **Enter**.

Note: Selecting **Online Copy** builds the mirror while in Windows. Selecting **Offline Copy** builds the mirror before exiting the RAID BIOS.

9. When asked **Are You Sure (Y/N)?**, press **Y**.
10. Press **Ctrl+E** to exit the BIOS.
11. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.

Note: If during restart the RAID BIOS reports an **incomplete Mirror set**, disregard the message, continue booting, and let the Mirror rebuild.

Creating a SPARE Drive

When a hard drive failure occurs in a mirror set, the auto-rebuild feature enables a drive designated as **SPARE** to become the new member of the mirror set.

1. During boot press **Ctrl+S** or **F4** to enter the RAID BIOS.
2. Select **Create RAID Set** press **Enter**.
3. Select **SPARE DRIVE**, then press **Enter**.
4. Select the single hard drive then press **Enter**.
5. When asked **Are You Sure (Y/N)?**, press **Y** to confirm.
6. Press **Ctrl+E** to exit.
7. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.

The **SPARE** drive will not be seen by Windows, however, it remains in the background waiting to rebuild the mirror in the event of a hard drive failure.

Rebuilding a Failed Mirror Set

When a failure to one member occurs, you will be notified either by the **RAID BIOS** during boot or by the **SATA Raid GUI** while in Windows. The steps below will guide you in rebuilding a failed mirror set.

1. Replace the failed drive(s) with one of equal or greater capacity, then start the computer.

2. During boot press **Ctrl+S** or **F4** to enter the **RAID BIOS**.
3. Select **Create RAID set** then press **Enter**.
4. Select **SPARE DRIVE** then press **Enter**.
5. Select the replacement drive then press **Enter**.
6. When asked **Are You Sure (Y/N)?**, press **Y** to confirm.
7. Press **Ctrl+E** to exit.
8. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.

Note: If during restart the RAID BIOS reports an **incomplete RAID set**, disregard the message, continue booting, and let the Mirror rebuild.

RAID 10 (Mirror+Striping)

This RAID set is used on **New/Blank** hard drives, do not use existing hard drive(s) with data. To create a Mirrored-Striped set four hard drives are required.

For Manual Configuration

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **RAID10** then press **Enter**.
4. Select **Manual configuration**, then press **Enter**.
5. Select chunk size from **4k, 8k, 16k, 32k, 64k** or **128k**, then press **Enter**.
6. Select the **first drive**, press **Enter**.
7. Select the **second drive**, press **Enter**.
8. Select the **third drive**, then press **Enter**.

9. Select the **fourth** drive, then press **Enter**.
10. Select **Create without data copy** then press **Enter**.
11. When asked **Are You Sure (Y/N)?**, press **Y** to accept.
12. Press **Ctrl+E** to exit the BIOS.
13. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.
14. Continue with Fdisk and Format steps as if you were installing a conventional hard drive.

For Auto Configuration

The default chunk size is **64k** when selecting **Auto configuration**.

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **RAID10** then press **Enter**.
4. Select **Auto configuration**, then press **Enter**.
5. When asked **Are You Sure (Y/N)?**, press **Y** to accept.
6. Press **Ctrl+E** to exit the BIOS.
7. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.
8. Continue with Fdisk and Format steps as if you were installing a conventional hard drive.

Rebuilding a Failed RAID 10 Set

When a failure to one member occurs, you will be notified either by the **RAID BIOS** during boot or by the **SATA Raid GUI** while in Windows. The steps below will guide you in rebuilding a failed RAID 10 set.

1. Replace the failed drive(s) with one of equal or greater capacity, then start the computer.

2. During boot press **Ctrl+S** or **F4** to enter the **RAID BIOS**.
3. Select **Create RAID set** then press **Enter**.
4. Select **SPARE DRIVE** then press **Enter**.
5. Select the replacement drive then press **Enter**.
6. When asked **Are You Sure (Y/N)?**, press **Y** to confirm.
7. Press **Ctrl+E** to exit.
8. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit.

Note: If during restart the RAID BIOS reports an **incomplete RAID set**, disregard the message, continue booting, and let the Mirror rebuild.

Single Drive Setup

Setting up a hard drive to operate as a single drive may destroy all existing data on the hard drive, therefore, back up any data on the hard drive before connecting it to the RAID controller or use a blank or new hard drive.

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **Concatenation**, then press **Enter**.
4. Select **1**, then press **Enter**.
5. Select the hard drive, then press **Enter**.
6. When asked **Are You Sure (Y/N)?**, press **Y** to accept.

Note: In the RAID BIOS screen, under **Logical Drive**, **SiI Concatenation** and the size of the logical drive will appear.

7. Press **Ctrl+E** to exit the BIOS.

8. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.

Note: The hard disk will show up as **Contiguous** in the SATA RAID5 GUI.

JBOD Drive Setup

This RAID Array combines the full capacity of two or more hard drives to form one logical drive. Since this configuration will destroy all existing data on each hard drive, use blank or new hard drives or back up the existing data before connecting to the raid controller.

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the RAID BIOS.
2. At the next screen select **Create RAID Set**, then press **Enter**.
3. Select **Concatenation**, then press **Enter**.
4. Select the number of drives, then press **Enter**.
5. Select each hard drive, then press **Enter** in succession.
6. When asked **Are You Sure (Y/N)?**, press **Y** to accept.

Note: In the RAID BIOS screen, under **Logical Drive**, **SiI Concatenation** and the size of the logical drive will appear.

7. Press **Ctrl+E** to exit the BIOS.
8. When asked **Are you sure to exit (Y/N)?**, press **Y** to exit and reboot.

Note: When multiple drives are combined using **JBOD**, each hard disk drive will appear as **Concatenated** in the SATA RAID5 GUI.

RAID5

While RAID5 feature is enabled in the **SATA Raid 5 BIOS**, this RAID Array is not supported by the *Serial ATA 4-Channel RAID* controller. Please use it at your own risk.

Deleting RAID Arrays

1. As the BIOS boots press **Ctrl+S** or **F4** when prompted to enter the **RAID BIOS**.
2. Select **Delete RAID Set**, then press **Enter**.
3. Select the RAID set then press **Enter**.
4. When asked **Are You Sure (Y/N)?**, press **Y** to confirm.
5. The RAID set is now deleted.

Resolving Conflicts

When a RAID set is created, the metadata written to the disk includes drive connection information. If, after a disk failure, the replacement disk was previously part of a RAID set (or used in another system), it may have conflicting metadata. If so, this will prohibit the RAID set from being either created or rebuilt, in order for the RAID set to function properly, this old metadata must be first overwritten with the new metadata. To resolve this, from the main BIOS window select **Resolve Conflicts**, then press **Enter**, the correct metadata, including the correct drive connection information, will be written to the replacement disk.

Low Level Format

Low Level Format is built into the RAID BIOS to make it more convenient to erase the entire contents of a hard disk drive, including data, drive and partition information. The Low Level Format utility works on single hard drives only, before the RAID set is configured.

Software Installation

This section provides information on how to install the *Serial ATA 4-channel RAID* drivers.

Windows 7 (32-bit)

For A New Windows 7 (32-bit) Installation

1. Setup the RAID array prior to Windows installation.
2. Follow Windows installation procedure.
3. At **Where do you want to install Windows?**, insert the driver CD, then click **Load Drivers**.
4. Click **Browse**.
5. Double click **CD Drive ... Drivers**, select **32bit**, then click **OK**.
6. Select **Silicon Image SiI 3114 ...**, then click **Next**.
7. At **Where do you want to install Windows?**, re-insert your Windows installation disk.
8. Follow the on-screen instructions to complete Windows installation.

When Windows installation completes, go to **SATAraid5 GUI** on page 22 and install the RAID monitoring utility.

For An Existing Windows 7 (32-bit) Installation

1. Setup the RAID array, and boot up Windows.

2. At the desktop, insert the driver CD. Close the **AutoPlay** box if prompted.
3. Right click **Computer**, click **Manage**, click **Device Manager**.
4. Under **Other devices**, right click **RAID Controller**, click **Update Driver Software**.
5. Click **Browse my computer for driver software**.
6. Type **D:\32bit**, click **Next**. (Change **D:** to match your CD/DVD-ROM drive letter)
7. At **Windows has successfully updated your driver software**, click **Close** to complete the installation.

Go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

Windows 7 (64-bit)

For A New Windows 7 (64-bit) Installation

1. Setup the RAID array prior to Windows installation.
2. Follow Windows installation procedure.
3. At **Where do you want to install Windows?**, insert the driver CD, then click **Load Drivers**.
4. Click **Browse**.
5. Double click **CD Drive ... Drivers**, select **64bit**, then click **OK**.
6. Select **Silicon Image SiI 3114 ...**, then click **Next**.
7. At **Where do you want to install Windows?**, re-insert your Windows installation disk.
8. Follow the on-screen instructions to complete Windows installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For An Existing Windows 7 (64-bit) Installation

1. Setup your RAID array, and boot up Windows.
2. At the desktop, insert the driver CD. Close the **AutoPlay** box if prompted.
3. Right click **Computer**, click **Manage**, click **Device Manager**.
4. Under **Other devices**, right click **RAID Controller**, click **Update Driver Software**.
5. Click **Browse my computer for driver software**.
6. Type **D:\64bit**, click **Next**. (Change **D:** to match your CD/DVD-ROM drive letter)
7. At **Windows has successfully updated your driver software**, click **Close** to complete the installation.

Go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

To Verify Windows 7 Installation

1. Right click **Computer**, click **Manage**, click **Device Manager**.
2. Double click **Storage controllers**, and **Silicon Image SiI 3114 SoftRaid5 Controller** should be displayed.

Windows Vista (32-/64-bit)

For A New Windows Vista Installation

1. Setup the RAID array prior to Windows installation.
2. Follow Windows installation procedure.
3. At **Where do you want to install Windows?**, click **Load Drivers**.
4. Insert the driver CD, click **Browse**.

5. Double click your CD-ROM drive.
For 32-bit Windows Vista: Click **OK**.
For 64-bit Windows Vista: Select **64bit**, then click **OK**.
6. Select **Silicon Image SiI ...**, then click **Next**.
7. Follow the on-screen instructions to complete Windows Vista operating system installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For An Existing Windows Vista Installation

1. Install the board and boot up Windows.
2. At the **Found New Hardware** window, click **Locate and install the driver automatically (recommended)**.
3. Insert the driver CD, click **Continue**.
4. Click **Next**, then click **Close**.
5. Shutdown Windows, and setup your RAID array.

When Windows resumes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

To Verify Windows Vista Installation

1. Right click **Computer**, click **Manage**, click **Continue**, select **Device Manager**.
2. Double click **Storage controllers**, and **Silicon Image SiI 3114 SoftRaid5 Controller** should be displayed.

Windows XP (32-bit) / Server 2003 (32-bit)

For A New XP (32-bit) / Server 2003 (32-bit) Installation

A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the **contents** of the **32bit** folder, found on the driver CD, onto a blank floppy disk then follow the directions below.

1. Setup the RAID array prior to Windows installation.

2. Follow Microsoft installation procedure to install Windows accordingly.
3. At the **Windows Setup** screen, press **F6** to install the driver.

Note: Prior to this step, you may be prompted to restart in order to continue with the installation.

4. Insert the driver diskette that you made earlier. Press **S** then press **Enter**.
5. Select **Silicon Image SiI 3114 SoftRaid 5 Controller for Windows XP/Server 2003**, press **Enter**.
6. Press **Enter** to continue and follow on-screen instructions to complete the installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For Existing XP (32-bit) / Server 2003 (32-bit) Installation

1. Install the board and boot up Windows.
2. At the **Found New Hardware Wizard**.
XP (w/SP1 or earlier) / Server 2003: continue to step #3.
XP (w/SP2 or later) / Server 2003 (w/SP1 or later): select **No, not this time**, then click **Next**.
3. Insert driver CD, select **Install the software automatically (Recommended)**, then click **Next**.
4. Click **Next**, then click **Finish**.
5. Remove the driver CD, shutdown Windows, and setup your RAID array.

When Windows resumes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

Windows XP (64-bit) / Server 2003 (64-bit)

For A New XP (64-bit) / Server 2003 (64-bit) Installation

A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the **contents** of the **64bit** folder, found on the driver CD, onto a blank floppy disk then follow the directions below.

1. Setup the RAID array prior to Windows installation.
2. Follow Microsoft procedure to install Windows accordingly.
3. At the **Windows Setup** screen, press **F6** to continue.
4. Insert the driver diskette that you made earlier. Press **S** then press **Enter**.
5. Select **Silicon Image SiI... Controller (64-bit Extended)** and press **Enter**.
6. Press **Enter** to continue and follow on-screen instructions to complete the installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For Existing XP (64-bit) / Server 2003 (64-bit) Installation

1. Install the board and boot up Windows.
2. At the **Found New Hardware Wizard**:
For XP (w/SP1 or earlier)/Server 2003: go to step #3.
For XP (w/SP2 or later)/Server 2003 (w/ SP1 or later): select **No, not this time**, then click **Next**.
3. Insert the driver CD, select **Install the software automatically (Recommended)**, then click **Next**.
4. Click **Finish**, remove the driver CD, shutdown Windows, and setup your RAID array.

When Windows resumes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

To Verify XP / Server 2003 / 2000 Installation

1. Right click **My Computer**, click **Manage**, click **Device Manager**.
2. Double click **SCSI and RAID controllers**, and **Silicon Image SiI 3114 SoftRaid 5 Controller** should be displayed.

Windows Server 2008 (32-bit)

For A New Server 2008 (32-bit) Installation

These instructions follow bootable Windows Installation CD/DVD-ROM procedure. Your steps may differ when using a different media for Windows installation.

1. Setup the RAID array prior to Windows installation.
2. Follow Windows Server 2008 installation procedure.
3. At **Where do you want to install Windows?**, click **Load Drivers**.
4. Insert the driver CD, click **Browse**.
5. Double click **CD Drive ... Drivers**.
6. Select **32bit**, then click **OK**.
7. Select **Silicon Image SiI...**, then click **Next**.
8. Follow the on-screen instructions to complete Server 2008 installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For An Existing Server 2008 (32-bit) Installation

1. Install the board and boot up Windows.
2. At the **Found New Hardware** window, click **Locate and install the driver automatically (recommended)**.
3. Insert the driver CD, click **Continue**.

4. Click **Next**, then click **Close**.
5. Shutdown Windows, and setup your RAID array.

When Windows resumes, go to **SATAraid5 GUI** on page 24 and install the RAID monitoring utility.

Windows Server 2008 (64-bit)

For A New Server 2008 (64-bit) Installation

These instructions follow bootable Windows Installation CD/DVD-ROM procedure. Your steps may differ when using a different media for Windows installation.

1. Setup the RAID array prior to Windows installation.
2. Follow Windows installation procedure.
3. At **Where do you want to install Windows?**, click **Load Drivers**.
4. Insert the driver CD, click **Browse**.
5. Double click **CD Drive ... Drivers**.
6. Select **64bit**, then click **OK**.
7. Select **Silicon Image SiI...**, then click **Next**.
8. Follow on-screen instructions to complete Windows Server 2008 installation.

When Windows installation completes, go to **SATAraid5 GUI** on page 24 and install the RAID monitoring utility.

For An Existing Server 2008 (64-bit) Installation

1. Install the board and boot up Windows.
2. At the **Found New Hardware** window, click **Locate and install the driver automatically (recommended)**.
3. Insert the driver CD, click **Continue**.
4. Click **Next**, then click **Close**.

5. Remove the driver CD, shutdown Windows, and setup your RAID array.

When Windows resumes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

To Verify Windows Server 2008 Installation

1. Right click **Computer**, click **Manage**.
2. Double click **Diagnostics**, select **Device Manager**.
3. Double click **Storage controllers**, and **Silicon Image SiI 3114 SoftRaid5 Controller** should be displayed.

Windows 2000

For A New Windows 2000 Installation

Important: During Windows 2000 installation you will be asked to restart several times. If during any restart the RAID BIOS reports an **Incomplete RAID set**, disregard the message, continue with the installation, and let the Mirror rebuild on its own. This should happen only once and it's done automatically. Please do not interfere with this process by re-configuring the RAID sets.

A new installation of Windows 2000 requires a floppy disk for the driver installation. To make this floppy disk, copy the **contents** of the **32bit** folder, found on the driver CD, onto a blank floppy disk then follow the directions below.

1. Setup the RAID array prior to Windows installation.
2. Follow Microsoft's Windows 2000 installation procedure.
3. At the **Windows 2000 Setup** screen, press **F6**.

<p>Note: Prior to this step, you may be prompted to restart in order to continue with the installation.</p>
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4. When prompted press **S** to specify the location of the driver.
5. Insert the driver diskette you made earlier, then press **Enter**.
6. Select **Silicon Image Sil 3114 SoftRaid 5 Controller for Windows 2000**, then press **Enter**.
7. Press **Enter** to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

When Windows installation completes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

For An Existing Windows 2000 Installation

1. Setup the RAID array and boot up to Windows.
2. At the **Found New Hardware Wizard**, click **Next**.
3. Select **Search for a suitable driver for my device (recommended)**, then click **Next**.
4. Insert the driver CD, check **CD-ROM drives**, uncheck the other check boxes, then click **Next**.
5. Click **Next**, then **Finish**.
6. Repeat steps 3-5.
7. Remove the driver CD, then restart Windows to complete the installation.

When Windows resumes, go to **SATARaid5 GUI** on page 24 and install the RAID monitoring utility.

SATAraid5 GUI

The SATAraid5 GUI provides the user an easy way to monitor your RAID set.

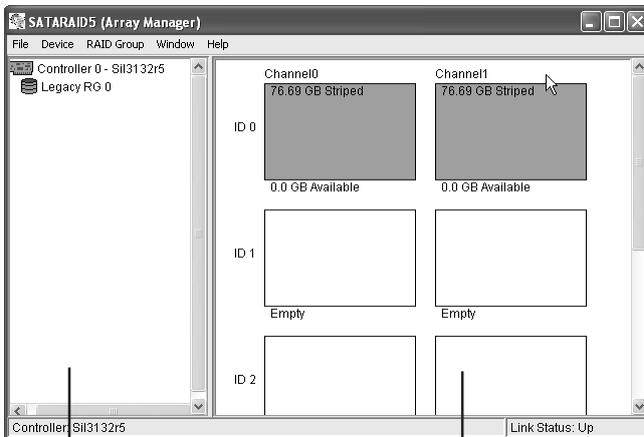
SATAraid5 GUI Installation

1. At the Windows desktop, insert the driver CD.
For Windows 7 / Vista / Server 2008
For 32-bit: Click Start, in **Start Search** box, type **D:\32bitgui.msi**, then press **Enter**. (Change **D:** to match your CD/DVD-ROM drive letter)
For 64-bit: In **Start Search** box, type **D:\64bitgui.msi**, then press **Enter**. (Change **D:** to match your CD/DVD-ROM drive letter)
For 2000 (SP4 or later is required for installation)
Click **Run**, type **D:\32bitgui.msi**, then click **OK**. (Change **D:** to match your CD-ROM drive letter)
For Windows XP/Server 2003
For 32-bit: Click **Run**, type **D:\32bitgui.msi**, then click **OK**. (Change **D:** to match your CD/DVD-ROM drive letter)
For 64-bit: Click **Run**, type **D:\64bitgui.msi**, click **OK**. (Change **D:** to match your CD/DVD-ROM drive letter)
2. Follow the on-screen instructions to complete the installation.

SATAraid5 GUI Overview

The SATAraid5 GUI will automatically start when Windows boots up. If the GUI does not automatically start or is closed by the user, choose the SATAraid5 program from the start menu to launch the program.

Upon launching the GUI, the main window should appear similar to what is displayed below and on the next few pages.



RAID Groups window

Device Configuration window

RAID Groups window

This window identifies SATA host adapters and configured RAID groups. Selecting each RAID group in the RAID Groups window, members consisting of the RAID group will be highlighted in the Device Configuration window.

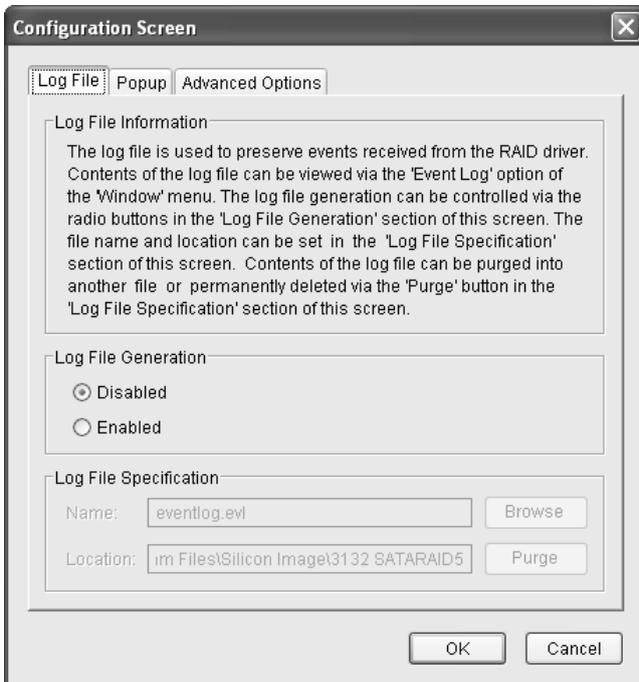
Right clicking on each node in the RAID Groups window, a popup menu will be displayed to let the user select an action to be performed for the selected controller or RAID group.

Device Configuration window

This window identifies all physical drives and their partitions. A physical drive can be partitioned into several portions and each portion can be a RAID group member.

SATARAID5 Configuration Menu

SATARAID5 configuration menu includes customization of the settings for Log File, Popup and Advanced Options. By clicking on File, then Configuration, the user may customize the settings for Log File, Popup and Advanced Options tabs.



Log File

The log file is used to store event information received from all the RAID drivers. The log file can be viewed with any text viewer (such as Notepad) or with the Event Log window of SATARAID5 GUI. Use the Log File tab to enable/disable the log file, set where the log file should be stored and the name of the file as well.

Popup

The popup window is a visual notification that an event has occurred. The popup window can be disabled or set to popup for only certain event levels.

The different levels are:

Informational - The popup window will be displayed for the following events:

- Informational
- Warnings
- Errors

Warning - The popup window will be displayed for the following events:

- Warnings
- Errors

Errors - The popup window will be displayed for the following events:

- Errors

Disabled - No popup will occur

Advanced Options

The advanced options tab is used to control advanced features of the RAID driver. By default, all advanced options are disabled.

Legacy (Bootable) Support: When this feature is selected, Legacy Support menu will be available in the menu bar. The Legacy Support menu includes a list of menu items to support RAID functions for legacy RAID groups.

Delete Member Support: When this feature is selected, Delete Member menu item will be available under the Device menu. The Delete Member menu item allows the user to delete a member from RAID 1 group.

Advanced RAID Features: When this feature is selected and the user selects to create RAID group, if the RAID group to be created is fault tolerant group (RAID1), the user will be able to select Improper Shutdown Policy in the Create RAID Group dialog box. The Advanced RAID Features are not supported for Legacy RAID groups.

Resources Info Support: When this feature is selected, Resources menu item will be available under the Window menu. This feature is for debugging purpose only.

Device Menu Command

Create Spare and Delete Spare

This command displays a dialog box to let the user create or delete a spare drive.

Delete Member

This command displays a dialog box to let the user choose RAID groups' members to delete. Since RAID 0 is not fault-tolerant, RAID 0 members will not be shown in the list.

Delete Orphan

An orphan device segment is part of a RAID group that cannot access another device segment within the same RAID group. When a member of a RAID group fails (such as a loss of power or a complete hard disk failure), it becomes an orphan. This command displays the Delete Orphan Segment window to show all orphan segments and allows the user to delete selected orphan segments.

Make Pass-Thru

Removes any Metadata on the drive so it will function as an ordinary hard disk drive.

Device Summary

This command displays the Segment Summary window to show all physical devices' segments.

RAID Group Menu Command

Create RAID Group

This command displays a dialog box to let user create a RAID group, the user needs to specify the following parameters.

RAID Group Label: Provides a name for the RAID group.

RAID Group: Select a group ID from the available ID list.

Configuration: *Striped:* for RAID 0; *Mirrored:* for RAID 1; *Contiguous:* for non-RAID single drive; *Concatenated:* for JBOD (requires at least 2 hard drives)

Capacity: Select from a list of RAID group sizes. Selecting MAX will create the largest RAID set possible with the drives selected.

Chunk Size: Select one size from the available list. This setting is for RAID 0 (Stripe) set only.

Rebuild Priority: Select from the available list. RAID 0 and virtual disk do not require this. 10 is the highest level of rebuild priority which means that rebuild times will be faster but will take more CPU resources to rebuild.

Devices: Select RAID member devices from the available device segment list.

Rebuild RAID Group

This command displays a dialog box to let the user choose a replacement segment to rebuild a non-fault tolerant RAID group.

Delete RAID Group

Lets the user choose RAID group(s) to delete.

RAID Group Summary

This command displays a dialog box to show all RAID groups' group ID, configuration and status. The RAID Group Summary window has it's own menu bar. All options available via the menu bar are shown below.

Sorting: This command displays a dialog box to let the user choose up to 3 items to sort RAID group items in the RAID Group Summary window.

Fields: This command displays a dialog box to let the user choose which fields will be shown in the RAID Group Summary window.

Window Menu Command

Task Manager

This command displays the Task Manager window. The Task Manager window list all RAID and disk management tasks that have been started and/or done. This window provides the user with the ability to schedule any RAID and disk management operations including RAID group creation, rebuild and test. The Task Manager window has it's own menu bar. All options available via the menu bar are shown below.

Open, Save and Print: These options will be available in future revisions.

Sorting: This command displays a dialog box to let the user choose up to 3 items to sort task items in the task list.

Fields: This command displays a dialog box to let the user choose which fields will be shown in the task list.

Modify: This command allows the user to modify parameters of the selected task items.

Suspend: This command allows the user to suspend the selected task items.

Resume: This command allows the user to resume the suspended task items.

Cancel: This command allows the user to cancel the selected task items.

Delete: This command displays a dialog box to let the user delete the selected task items.

Event Log

This command displays the Event Log window. The Event Log window displays SATA device-related events that occur while SATARAID5 GUI is running. The Event Log window has it's own menu bar. All options available via the menu bar are shown starting on the next page.

Sorting: This command displays a dialog box to the the user choose up to 3 items to sort event items in the event log.

Fields: This command displays a dialog box to let the user choose which fields will be shown in the event log.

Resources

This command displays the Resources Information window. This feature is for debugging purpose only.

Legacy Support Menu Command

Create Legacy RAID Group

This command displays a dialog box to let the user create legacy (bootable) RAID groups. This item is disabled if new RAID groups exist. The parameters are discussed below.

RAID Group: Selects a group ID from the available list.

Configuration: *Striped:* for RAID 0; *Mirrored:* for RAID 1; *Contiguous:* for single drive; *Concatenated:* for JBOD (requires at least 2 hard drives).

Capacity: Select from a list of RAID group sizes.

Chunk Size: Select one value from the available list.

Rebuild Priority: Select from the available list. RAID 0 and virtual disk do not require this. 10 is the highest level of rebuild priority which means that rebuild times will be faster but will take more CPU resources to rebuild.

Devices: Select RAID member devices from the available device segment list.

Rebuild Legacy RAID Group

This command displays a dialog box to let the user choose a replacement segment to rebuild a non-fault tolerant legacy RAID group.

Delete Legacy RAID Group

This command displays a dialog box to let the user choose legacy RAID groups to delete. This item is disabled if no legacy RAID group exists.

Convert Legacy RAID Group

This command displays a dialog box to let the user choose legacy RAID groups to convert to new RAID groups of the same RAID type. This item is disabled if no legacy RAID group exists.

Create/Delete/Convert Legacy Spare

These commands display a dialog box to let the user configure a legacy spare.

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Technical Support and Warranty

QUESTIONS? SIIG's **Online Support** has answers! Simply visit our web site at www.siig.com and click **Support**. Our online support database is updated daily with new drivers and solutions. Answers to your questions could be just a few clicks away. You can also submit questions online and a technical support analysts will promptly respond.

SIIG offers a lifetime manufacturer warranty with this product. Please see our web site for more warranty details. If you encounter any problems with this product, please follow the procedures below.

A) If it is within the store's return policy period, please return the product to the store where you purchased from.

B) If your purchase has passed the store's return policy period, please follow these steps to have the product repaired or replaced.

Step 1: Submit your RMA request.

Go to www.siig.com, click **Support**, then **RMA** to submit a request to **SIIG RMA**. Your RMA request will be processed, if the product is determined to be defective, an RMA number will be issued.

Step 2: After obtaining an RMA number, ship the product.

- Properly pack the product for shipping. All software, cable(s) and any other accessories that came with the original package must be included.
- Clearly write your RMA number on the top of the returned package. SIIG will refuse to accept any shipping package, and will not be responsible for a product returned without an RMA number posted on the outside of the shipping carton.
- You are responsible for the cost of shipping. Ship the product to the following address:

SIIG, Inc.

6078 Stewart Avenue

Fremont, CA 94538-3152, USA

RMA#: _____

- SIIG will ship the repaired or replaced product via Ground in the U.S. and International Economy outside of the U.S. at no cost to the customer.

About SIIG, Inc.

Founded in 1985, SIIG, Inc. is a leading manufacturer of IT connectivity solutions (including Serial ATA and Ultra ATA Controllers, FireWire, USB, and legacy I/O adapters) that bridge the connection between Desktop/ Notebook systems and external peripherals. SIIG continues to grow by adding A/V and Digital Signage connectivity solutions to our extensive portfolio. All centered around the distribution and switching of A/V signals over CAT5/6, these products include matrix switches, distribution amplifiers, extenders, converters, splitters, cabling, and more.

SIIG is the premier one-stop source of upgrades and is committed to providing high quality products while keeping economical and competitive prices. High-quality control standards are evident by one of the lowest defective return rates in the industry. Our products offer comprehensive user manuals, user-friendly features, and most products are backed by a lifetime warranty.

SIIG products can be found in many computer retail stores, mail order catalogs, and e-commerce sites in the Americas, as well as through major distributors, system integrators, and VARs.

PRODUCT NAME

Serial ATA 4-Channel RAID

FCC RULES: TESTED TO COMPLY WITH FCC PART 15, CLASS B OPERATING ENVIRONMENT: FOR HOME OR OFFICE USE

FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

THE PARTY RESPONSIBLE FOR PRODUCT COMPLIANCE

SIIG, Inc.
6078 Stewart Avenue
Fremont, CA 94538-3152, USA
Phone: 510-657-8688

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