

# **PCI SATA + PATA Raid Card**

## **User Manual**

**Ver. 5.00**

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## ***Features and Benefits***

- Compliant with Serial ATA 1.0 specification
- Compliant with PCI Specification, revision 2.2
- Provides three independent channels to connect two SATA and one PATA hard disk drive
- Supports up to UDMA6 transfer mode of PATA
- Supports up to 4 storage device connection
- Supports RAID 0, 1, 0+1 and JBOD functions
- Supports drives with capacities larger than 137GB
- Supports Windows® 2000, XP/2003 32/64 bit, Vista 32/64 bit

## ***Connectors***

- 2 x internal SATA connectors
- 2 x external SATA connectors
- 1 x PATA connector

## ***System Requirements***

- Pentium-class computer with one available PCI slot
- Windows® 2000, XP/2003 32/64 bit, Vista 32/64 bit

## ***Package Contents***

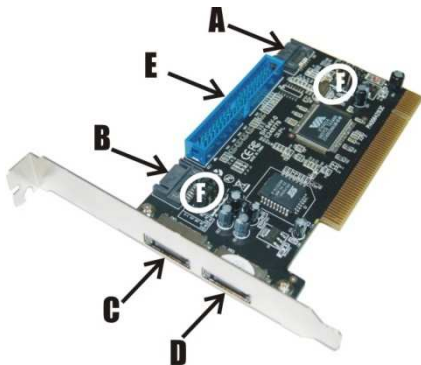
- 1 x PCI SATA + PATA Raid Card
- 1 x Driver CD
- 1 x User's Manual

## ***Optional Accessories***

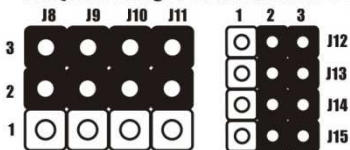
- ATA 133 IDE Cable
- SATA Data Cable
- SATA Power Cable

## ***Hardware Description***

**Note:** There are four SATA ports in PCI SATA+PATA RAID card. We named these ports character A through D. Ports A & B are internal SATA ports and C & D are external SATA ports. By changing the jumper setting on the PCI SATA+PATA RAID card that allows you to utilize 2 ports of this card at the same time. Please set which port to work by jumper setting. By default, Port A and B are working.



**Jumper Settings (Default Mode: 2-3 close)**



***F* (Jumper Settings)**

JP	Description	Active Port
J8-J11	1-2 close	Enable SATA Port C
	2-3 close	Enable SATA Port B
J12-J15	1-2 close	Enable SATA Port D
	2-3 close	Enable SATA Port A

## ***Hardware Installation***

1. Turn Off the power to your computer.
2. Unplug the power cord and remove your computer's cover.
3. Remove the slot bracket from an available PCI slot.
4. To install the card, carefully align the card's bus connector with the selected PCI slot on the motherboard. Push the board down firmly.
5. Attach your internal or external devices to the PCI SATA+PATA RAID card.
6. Replace the slot bracket's holding screw to secure the card.
7. Replace the computer cover and reconnect the power cord.

## ***RAID Arrays***

RAID Arrays are setup in the PCI SATA+PATA RAID card's BIOS.

There are four configurations supported:

RAID level/Type	Configurations	Number of disks needed
RAID 0	Disk Striping	2 or 3 or 4
RAID 1	Disk Mirroring	2
RAID 0+1	Disk Striping + Mirroring	4

JBOD	Disk Concatenation	2 or 3 or 4
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## ***RAID 0 (Striping)***

This RAID array to be used on **New/Blank** hard drives. Striping will destroy existing data on the hard drive. **Auto Configuration** is recommended. For applications that require custom chunk size, **Manual Configuration** is offered.

### ***Auto configuration (recommended)***

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

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Auto Setup For Performance**, press **Enter**.
4. When asked **The data on the selected disks will be destroyed. Continue? (Y/N)**, press **Y** to accept.
5. And then a **Create New Array OK!** message will be displayed, then press **ESC** to quit.
6. Press **ESC** to quit then go back to the RAID utility main menu.

7. Press **ESC** to exit the BIOS.
8. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

## ***Manual configuration***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Array Mode RAID 0 (Striping)**, press **Enter**.
4. Please use arrow keys **↑** and **↓** move to **Select Disk Drives**, press **Enter**.
5. Please use arrow keys **↑** and **↓** to select the disk, then press **Enter** to mark the selected disk, press **ESC** to quit.
6. Select **Stripe Size 64k**, press **Enter**.
7. Select chunk size from **4K, 8K, 16K, 32K** or **64K**, then press **Enter**.
8. Select **Start Create Process**, press **Enter**.
9. When asked **The data on the selected disk will be destroyed. Continue? (Y/N)**, press **Y** to accept.

10. And then a **Create New Array OK!** message will be displayed, then press **ESC** to quit.
11. Press **ESC** to quit then go back to the RAID utility main menu.
12. Press **ESC** to exit the BIOS.
13. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

## ***RAID 1 (Mirroring)***

### ***For New/Blank Hard Drives***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Auto Setup For Data Security**, press **Enter**.
4. When asked **The data on the selected disks will be destroyed. Continue? (Y/N)**, press **Y** to accept.
5. And then a **Create New Array OK!** message will be displayed, then press **ESC** to quit.
6. Press **ESC** to quit then go back to the RAID utility main menu.
7. Press **ESC** to exit the BIOS.

8. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

### ***For Existing Hard Drives with Data***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Array Mode RAID 1 (Mirroring)**, press **Enter**.
4. At the next screen select **RAID 1 for data protection**, press **Enter**.
5. Please use arrow keys **↑** and **↓** move to **Select Disk Drives**, press **Enter**.
6. Please use arrow keys **↑** and **↓** to select the **Source** drive, press **Enter**.
7. Please use arrow keys **↑** and **↓** to select the **Mirror (Target)** drive, press **Enter**.
8. Select **Start Create Process**, press **Enter**.
9. When asked **Save the data on source disk to mirror after creation? (Y/N)**, press **Y** to accept.

10. When asked **The data on the Mirror disk will be destroyed. Continue? (Y/N)**, press **Y** to accept.
11. The set will be built. The status of the built is displayed in the menu.
12. When build is completed, a **Create New Array OK!** message will pop up inform you that build is finished.

### ***RAID 0+1 (Mirroring+Striping)***

This RAID array to be used on **New/Blank** hard drives, do not use existing hard drive(s) with data. To create a RAID 0+1 set four hard drives are required.

### ***Auto configuration (recommended)***

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

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Auto Setup (Safe, Performance)**, press **Enter**.
4. When asked **The data on the selected disks will be destroyed**.

- Continue? (Y/N)**, press **Y** to accept.
5. And then a **Create New Array OK!** Message will be displayed, the press **ESC** to quit.
  6. Press **ESC** to quit then go back to the RAID utility main menu.
  7. Press **ESC** to exit the BIOS.
  8. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

### ***Manual configuration***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At RAID utility main menu select **Create Array**, press **Enter**.
3. At the next screen select **Array Mode RAID 0/1**, press **Enter**.
4. Please use arrow keys **↑** and **↓** move to **Select Disk Drives**, press **Enter**.
5. Please use arrow keys **↑** and **↓** to select the **first** drive, press **Enter**.
6. Please use arrow keys **↑** and **↓** to select the **second** drive, press **Enter**.
7. Please use arrow keys **↑** and **↓** to select the **third** drive, press

**Enter.**

8. Please use arrow keys ↑ and ↓ to select the **fourth** drive, press **Enter.**
9. Select **Stripe Size 64k**, press **Enter.**
10. Select chunk size from **4K, 8K, 16K, 32K** or **64K**, then press **Enter.**
11. Select **Start Create Process**, press **Enter.**
12. When asked **The data on the selected disk will be destroyed. Continue? (Y/N)**, press **Y** to accept.
13. And then a **Create New Array OK!** message will be displayed, then press **ESC** to quit.
14. Press **ESC** to quit then go back to the RAID utility main menu.
15. Press **ESC** to exit the BIOS.
16. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

## ***SPAN (JBOD)***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Create Array**, press **Enter.**

3. At the next screen select **Auto Setup For Capacity**, press **Enter**.
4. When asked **The data on the selected disks will be destroyed. Continue? (Y/N)**, press **Y** to accept.
5. And then a **Create New Array OK!** message will be displayed, then press **ESC** to quit.
6. Press **ESC** to quit then go back to the RAID utility main menu.
7. Press **ESC** to exit the BIOS.
8. When asked **Do you really want to exit the utility? (Y/N)**, press **Y** to accept.

### ***Delete RAID Disk Drive***

1. As the BIOS boots press “Ctrl-Z” when prompted to enter the RAID BIOS.
2. At the RAID utility main menu select **Delete Array**, press **Enter**
3. Please use arrow keys **↑** and **↓** to select the RAID set then press **Enter**.
4. When asked **Data on the raid will be destroyed. Are you sure? Continue? Press Y/N**, press **Y** to confirm.
5. Then a **Delete Array OK!** message will be displayed, then press **ESC** to quit.

## ***BIOS Configuration***

The PCI SATA+PATA RAID card's BIOS will appear every time your system starts up. During this (POST) process, the BIOS will show up and indicate the devices attached to it.

## ***Driver Installation***

### ***For Windows® 2000***

#### ***For A New Installation***

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the “PCI\_IO\VIA VT6421\VRaidrv\drvdisk” 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 Windows® 2000 installation procedure.
3. Restart the computer when prompted by the installation.
4. At the Windows® 2000 Setup screen, press **F6** to install the RAID driver.
5. When prompted, press **S** to specify the location of the driver.
6. Insert the floppy disk, then press **Enter**.
7. Select **VIA V-RAID Controller Series (Windows 2K)**, then

press **Enter**.

8. Press **Enter** again to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

### ***For An Existing Installation***

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware Wizard** window pop-up, please click **Cancel** button to cancel the driver installation for the device at this moment. The driver for this device will be installed in the next step.
3. Please insert the CD driver bound with PCI SATA+PATA RAID card into your CD-ROM Drive.
4. At the Windows desktop, click **Start**, then **Run**.
5. Type **D:\PCI\_IO\VT6421\SETUP.EXE**, click **OK**. (Change **D:\** to match your CD-ROM drive letter)
6. Follow the on-screen instructions to complete the installation.
7. Restart Windows to complete the installation.

## ***For Windows® XP/Server 2003***

### ***For A New Installation***

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the “PCI\_IO\VIA VT6421\VRAIDrv\drvdisk” 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 installation procedure.
3. Restart the computer when prompted by Windows’ installation.
4. At the Windows Setup screen, press **F6** to install the RAID driver.
5. When prompted, press **S** to specify the location of the driver.
6. Insert the floppy disk, then press **Enter**.
7. Select **VIA V-RAID Controller Series (Windows XP/SRV2003)**, then press **Enter**.
8. Press **Enter** to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

### ***For An Existing Installation***

1. Setup the RAID Array prior to driver installation and boot up to Windows.

2. At the **Found New Hardware Wizard** window pop-up, please click **Cancel** button to cancel the driver installation for the device at this moment. The driver for this device will be installed in the next step.
3. Please insert the CD driver bound with PCI SATA+PATA RAID card into your CD-ROM Drive.
4. At the Windows desktop, click **Start**, then **Run**.
5. Type **D:\PCI\_IO\VIA VT6421\SETUP.EXE**, click **OK**. (Change **D:\** to match your CD-ROM drive letter)
6. Follow the on-screen instructions to complete the installation.
7. Restart Windows to complete the installation.

### ***For Windows® XP-x64/Server 2003-x64***

#### ***For A New Installation***

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the “PCI\_IO\VIA VT6421\VRaidrv\drvdisk” 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 installation procedure.

3. Restart the computer when prompted by Windows' installation.
4. At the Windows Setup screen, press **F6** to install the RAID driver.
5. When prompted, press **S** to specify the location of the driver.
6. Insert the floppy disk, then press **Enter**.
7. Select **VIA V-RAID Controller Series(Windows XP/SRV2003-x64)**, then press **Enter**.
8. Press **Enter** to finish driver installation, then follow the on-screen instructions to complete the Windows installation.

### ***For An Existing Installation***

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware Wizard** window pop-up, please click **Cancel** button to cancel the driver installation for the device at this moment. The driver for this device will be installed in the next step.
3. Please insert the CD driver bound with PCI SATA+PATA RAID card into your CD-ROM Drive.
4. At the Windows desktop, click **Start**, then **Run**.
5. Type **D:\PCI\_IO\VIA VT6421\SETUP.EXE**, click **OK**. (Change

**D:**\ to match your CD-ROM drive letter)

6. Follow the on-screen instructions to complete the installation.
7. Restart Windows to complete the installation.

## ***For Windows® Vista***

### ***For A New Installation***

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the “PCI\_IO\VIA VT6421\VRaidrv\drvdisk” 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 installation procedure.
3. Restart the computer when prompted by Windows’ installation.
4. At the Windows Setup screen, press **Load Driver** to install the RAID driver.
5. Insert the floppy disk, please select **VIA RAID Controller - 3349 (A:\VISTA\x86\viamraid.inf)**, then press **Next**. (Change **A:**\ to match your floppy drive letter)
6. Follow the on-screen instructions to complete the Windows installation.

## ***For An Existing Installation***

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware Wizard** window pop-up, please click **Cancel** button to cancel the driver installation for the device at this moment. The driver for this device will be installed in the next step.
3. Please insert the CD driver bound with PCI SATA+PATA RAID card into your CD-ROM Drive.
4. At the Windows desktop, click **Start**, then **Run**.
5. Type **D:\PCI\_IO\VIA VT6421\SETUP.EXE**, click **OK**. (Change **D:\** to match your CD-ROM drive letter)
6. Follow the on-screen instructions to complete the installation.
7. Restart Windows to complete the installation.

## ***For Windows® Vista-x64***

### ***For A New Installation***

*A new installation requires a floppy disk for the driver installation. To make this floppy disk, copy the contents of the “PCI\_IO\VIA VT6421\VRaidrv\drvdisk” 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 installation procedure.
3. Restart the computer when prompted by Windows' installation.
4. At the Windows Setup screen, press **Load Driver** to install the RAID driver.
5. Insert the floppy disk, please select **VIA RAID Controller - 3349 (A:\VISTA\x64\viamrx64.inf)**, then press **Next**. (Change A:\ to match your floppy drive letter)
6. Follow the on-screen instructions to complete the Windows installation.

### ***For An Existing Installation***

1. Setup the RAID Array prior to driver installation and boot up to Windows.
2. At the **Found New Hardware Wizard** window pop-up, please click **Cancel** button to cancel the driver installation for the device at this moment. The driver for this device will be installed in the next step.
3. Please insert the CD driver bound with PCI SATA+PATA

RAID card into your CD-ROM Drive.

4. At the Windows desktop, click **Start**, then **Run**.
5. Type **D:\PCI\_IO\VIA VT6421\SETUP.EXE**, click **OK**.  
(Change **D:\** to match your CD-ROM drive letter)
6. Follow the on-screen instructions to complete the installation.
7. Restart Windows to complete the installation.

### ***To Verify Driver Installation***

1. Right click **My Computer** and click **Manage**.
2. Select **Device Manager**.
3. Look for the following:

**Windows® 2000/XP/2003:** Double click **SCSI and RAID Controller:**

- **VIA RAID Controller – 3349** should be displayed

**Windows® Vista:** Double click **Storage controllers:**

- **VIA RAID Controller – 3349** should be displayed

## ***VIA V-Raid Utility Installation***

1. Please insert the CD driver bound with ITE Ultra ATA/133 PCI RAID Card into your CD-ROM Drive.
2. At the Windows desktop click **Start**, then **Run**.
3. Type **D:\PCI\_IO\VIA VT6421\SETUP.EXE**, then click **OK**.  
(Change **D:** to match your CD-ROM drive letter)
4. Follow the on-screen instructions to complete the installation.
5. Restart Windows to complete the installation.

*For more information about the VIA V-Raid Utility configuration, please follow the steps on below:*

- ***Start → Programs → VIA → RAID → VIA V-Raid Tool Help***