

Forensic RTX™ 410-3QJ

User Manual

Revised May 16, 2017

Thank you for purchasing WiebeTech's Forensic RTX410-3QJ. Forensic RTX410-3QJ features WiebeTech's write-blocked technology, quadruple connectivity for each bay, and power/access LEDs all inside of a tough, durable aluminum frame and lid. The latest feature of Forensic RTX is the new front panel, with write-block indication LEDs as well as HPA/DCO detection. Whether in the field or in a lab, Forensic RTX is a must-have for forensic investigators.



Models covered:

- Forensic RTX 410-3QJ SATA
- Forensic RTX 410-3QJ IDE + SATA

Features

- TrayFree™ technology! Simply slide in a SATA drive and shut the door. Each SATA bay offers a lock for additional security, and shock protection for longer drive life. All metal bays.
- Copy data from IDE or SATA drives. Bays one (PATA) and three (SATA) are write-blocked. Bays two and four (SATA) are read/write making it possible to write to SATA drives from the write-blocked drives.
- Forensic RTX410-3QJ comes with all the cables you need to connect to eSATA, FireWire 800, and USB 3.0, and USB 2.0.
- Each hard drive has its own data channel for maximum speed.
- Power and access LEDs let you know status of your hard drives.
- Sturdy aluminum case provides excellent heat dissipation and rugged durability.
- Heavy duty handle allows for easy transport.
- HPA/DCO detection.

Forensic Device User Advisory

We recommend that you perform a final check on this product.

Prior to first use, please verify that the write-blocking function of this product is working properly. This is easily done: attach a known good formatted drive, and verify that the drive mounts properly on your computer. Use a drive that has data on it that you are willing to overwrite. Transfer files to the drive. The files will appear to transfer to the drive. Thereafter, unmount the drive and remount the drive. The files that you wrote to the drive should not appear after the drive is remounted. If they do appear, there is a problem with your forensic device, and you should contact our support department for further instructions.

CRU/WiebeTech support may be reached at:

(866) 744-8722 (toll free)

(316) 744-8722 (international)

support@wiebetech.com (email)

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1. Pre-Installation Steps

1.1 Forensic RTX410-3QJ Accessories

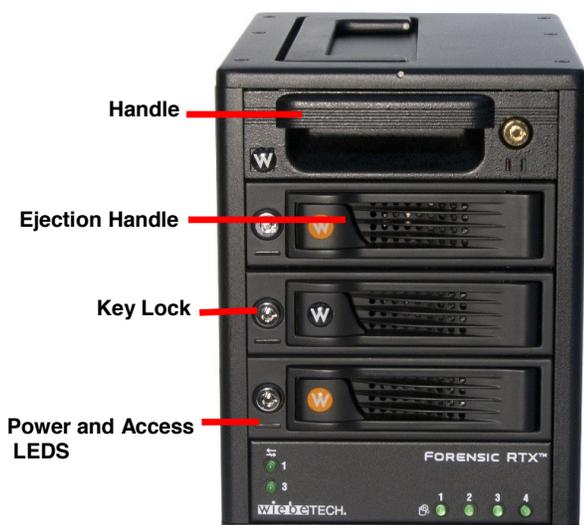
Check the accessories with your Forensic RTX410-3QJ. Please contact WiebeTech if any parts are missing or damaged. The box should contain the following items:

Accessories	Quantity
Forensic RTX410-3QJ unit	1
3.5-inch to 2.5-inch converter	1
eSATA to eSATA cable	4
FireWire 800 to 800 cable	4
USB 3.0 cable	4
USB 2.0 cable	4
Power cord	1
Packet of screws and keys	1
Quick Start Guide and Warranty Information	1

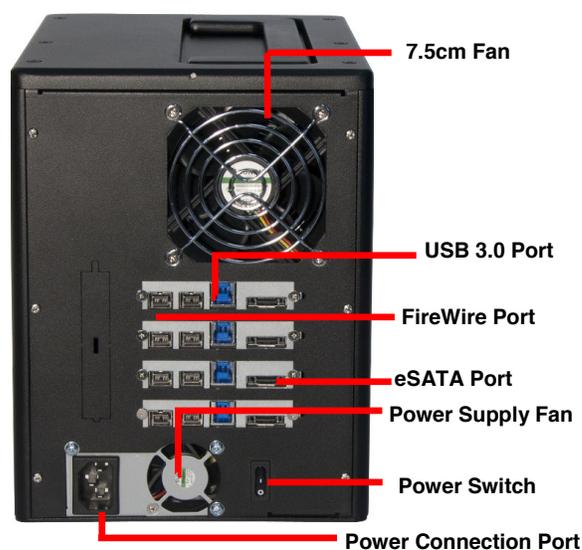
1.2 Identifying Parts

Take a moment to familiarize yourself with the parts of the Forensic RTX410-3QJ. This will help you to better understand the remaining instructions.

Front View



Rear View



- Bays one and three are write-blocked
- Bays two and four are read/write

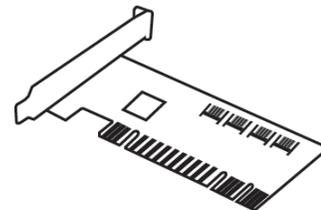
Close-Up of Panel



2. Using Forensic RTX410-3QJ

2.1 Installing a Host Bus Adapter (HBA)

(Optional) Install a host bus adapter (HBA) into an empty expansion slot inside your computer. If your computer already has the ports you need, you can skip this step. Compatible cards are available from WiebeTech (www.wiebetech.com). The following general steps will work for most cards. Instructions for individual cards may vary, so consult your card's user manual.



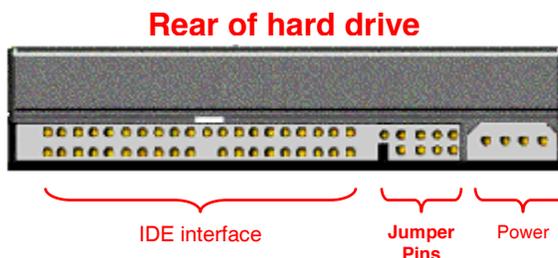
- Power down the computer system.
- Insert the PCI card into an available PCI slot. Do not force it, but it will take firm pressure to fully seat the interface. It may help to gently rock the card back and forth as you apply pressure.
- Once the card is fully seated in the slot, secure it in place with a screw.
- Turn the computer back on.

2.2 Jumper Configuration for 3.5-inch IDE/PATA HDD

If using a 3.5-inch IDE/PATA drive configure the jumpers on your hard drive. The drive must be set to the Master setting. Consult the instructions for your drive (some drives display configuration information on the drive's label). A few drives have both "Master with Slave Present" and "Master without Slave" options. Choose the latter in this case. In rare cases, if the Master setting does not work then try Cable Select.



(Example)



2.3 Installing Hard Drives

2.3.2 SATA HDD: 3.5-inch

For SATA drives simply pull on the ejection handle and open the door. Then just slide in your SATA drive and shut the door behind it. The drive slides in with the label up and the SATA connection on the drive is the side that slides in first. For extra security for your hard drive you can lock the bay, but make sure to unlock it before pulling on the ejection handle again.

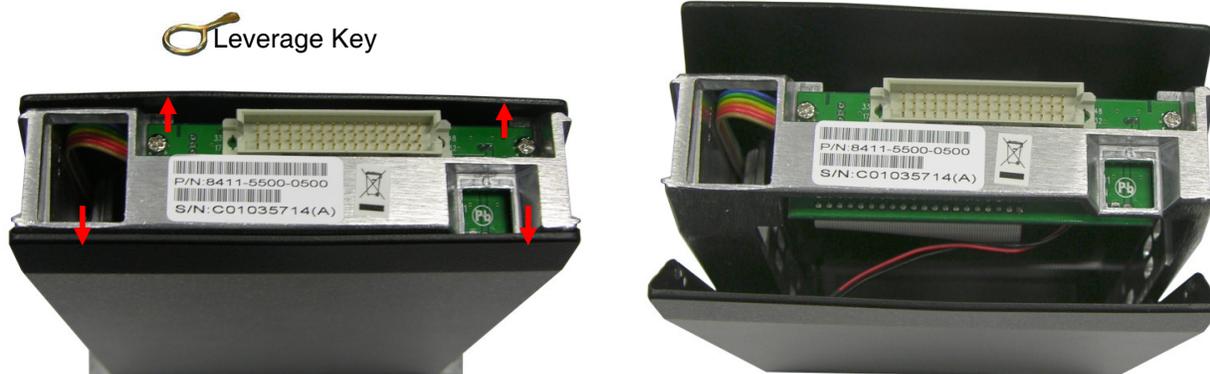


2.3.1 IDE/PATA HDD: 3.5-inch (IDE + SATA models only)

For IDE/PATA drives, pull gently on the handle to slide the tray out. If the tray doesn't slide out easily, do not continue to pull on the handle. Check the lock and make sure that the tray is unlocked.



Once the tray is out, remove the tray's top and bottom coverings with the leverage key. Attach your IDE/PATA drive to the ribbon cable and to the 4-pin power cable.



Put the drive into the tray and secure it with screws. Set the top and bottom coverings back onto the tray and put the tray back into the bay of Forensic RTX. Lock the tray—the tray will not power if left in the unlocked position—and then move on to the next step.



2.3.3 SATA HDD: 2.5-inch

Open up one of the SATA bays. Slide the 3.5-inch to 2.5-inch converter in with the SATA connection towards the back and the black grilled top facing up as the picture below shows.



Place the 2.5-inch SATA HDD into the drive slot located on the front of the 3.5-inch to 2.5-inch converter.



When the 2.5-inch drive makes its connection inside of the 3.5-inch to 2.5-inch converter then you can push the converter all the way inside the TrayFree bay. To uninstall the converter and drive simply pull on the ejection handle on the TrayFree bay and push the eject button on the 3.5-inch to 2.5-inch converter. The 2.5-inch SATA drive should eject slightly, just be cautious and hold the converter horizontal when ejecting a 2.5-inch drive.



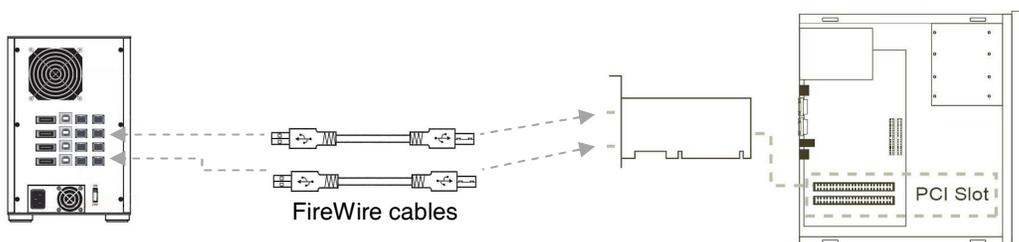
2.4 Connecting and Powering Forensic RTX410-3QJ

Plug in the data cables and power cord. The Forensic RTX410-QJ connects to your computer through FireWire, eSATA or USB. Each drive has its own dedicated connection for maximum data speeds. Plug one end of each cable to the back of the unit. Insert the other end into an open port on the computer. Connect the power cord to the rear of RTX. Plug the other end to a grounded electrical outlet.

Your product is now ready to use! Turn on the power switch on the back of the unit. If your target drives are already formatted, you can begin using them right away. Otherwise you can format them at this time to prepare them for usage with your computer. For obvious reasons, drives in the write-locked bays cannot be formatted.



NOTE: To connect RTX410-3QJ to a USB 2.0 host, you must use a USB 2.0 cable.



2.6 Daisy Chaining

If daisy-chaining, join all four bays together using three FireWire cables. Connect a fourth FireWire cable to one of the remaining open FireWire ports on the back of the Forensic RTX. Plug the other end of that cable into an open FireWire port on the computer. Be sure to label your drives in such a way that you'll know which one you're accessing on the computer.

3. Usage with Mac and Windows Operating Systems

3.1 Usage with Mac OS X

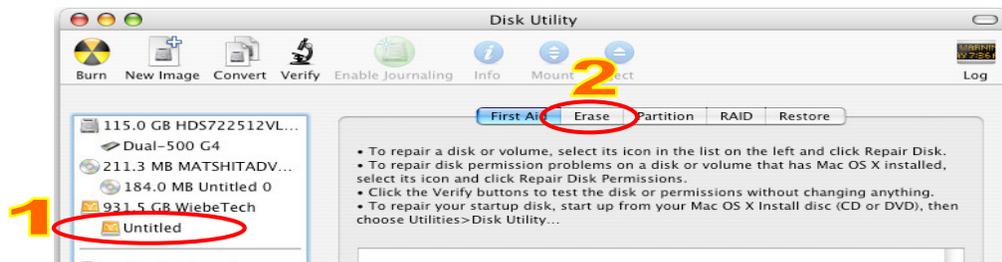
3.1.1 Compatibility

Forensic RTX does not require drivers for operation under Mac OS X. However, if you install a host card specifically to work with this product, that card may require drivers. See your card's User Manual for drivers and instructions.

3.1.2 Formatting a drive

To format, use Mac OS X's Disk Utility (found in the applications folder).

- a) Click on the drive in the window to the left (see picture below).
- b) Click the Erase tab in the window to the right (see picture below).
- c) Select the format type. Most users prefer Mac OS Extended with Journaling (HFS+), which is required for compatibility with Time Machine (OS 10.5 or newer). If you need to use your drive with both Mac and Windows computers, select MS-DOS File System instead.
- d) Enter a name for the new volume and then click "Erase" to start the process.



3.1.3 Mounting and unmounting volumes

If the hard drives installed in the product are already formatted, an icon representing the drive's volume will appear (mount) on the desktop. You can begin using the volume right away. If the drive is unformatted, a message will appear on the desktop saying that the disk is unreadable. You can use OS X's Disk Utility to easily format the drive (see section above).

Unmount the volume before powering down the unit by dragging the volume's icon to the trash bin, or by selecting the volume then pressing Command-E. Disconnecting the unit without first unmounting the volume can result in data loss.



3.1.4 Creating a Boot Drive

To activate this feature, you must first install OS X on the hard drive in your carrier. The easiest way to do this is to clone an existing system drive using a utility such as Carbon Copy Cloner or Super Duper. Next, go to System Preferences Startup Disk. A window will list the available bootable volumes. Select the volume from which you wish to boot. Another method is to hold down the Option key during boot up. A screen should appear that allows you to select the volume you wish to use. This is useful if you wish to boot from your RTX hard drive only some of the time.



3.2 Usage with Windows operating systems

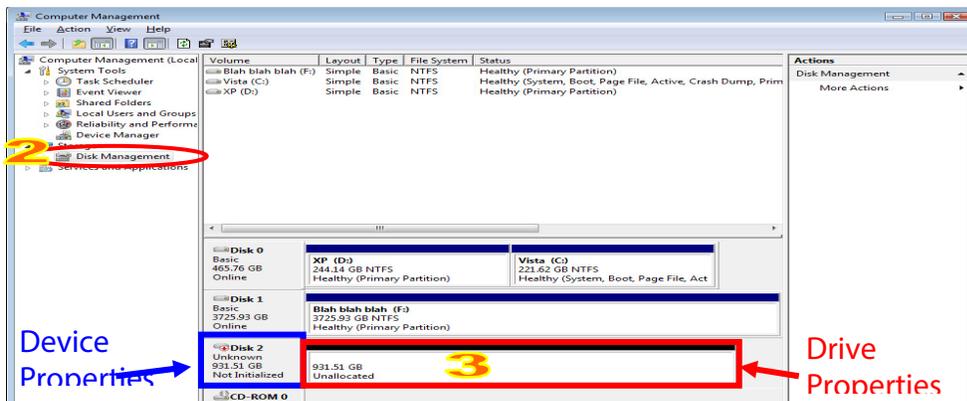
3.2.1 Compatibility

RTX does not require drivers for operation under Windows XP, Vista, or 7. However, if you install a host card specifically to work with this product, that card may require drivers. See your card's User Manual for drivers and instructions.

3.2.2 Formatting a drive

To format, use the Disk Management utility.

- a) Right-click on My Computer, then select Manage. The Computer Management window will open.
- b) In the left pane of this window, left-click on Disk Management.
- c) The drive should appear in the list of Disks in the lower middle/right pane (see picture below). You may need to scroll down to see it. If the drive is already formatted, you can identify it easily by its volume name. If it's unformatted, the Drive Properties Box will say "Unallocated" and you'll need to initialize the disk before formatting it. Initialize the disk by right-clicking the Device Properties Box and selecting Initialize Disk.



d) To format the drive, right-click the Drive Properties Box and select Format.

e) If you are prompted to select a partition type, select MBR for volumes 2TB or smaller, or GPT for volumes larger than 2TB. Note: Windows XP does not support GPT or volumes larger than 2TB.

f) Click through several more windows, leaving the default settings, until you see a window that allows selection of a file system. Choose NTFS and enter a name for the new volume. Be sure to check the box labeled “Perform a quick format” unless you want to completely erase any data on the drive and have time to wait. A quick format should take less than a minute, while standard formatting may take several hours.

g) Click “Next” and then “Finish” to start the format process. When the format is complete, the Drive Properties Box will update to show the new volume name. The new volume can now be found in My Computer.

3.2.3 Mounting and ejecting volumes

If the hard drives attached to RTX are already formatted, you can begin using the volume right away. When the unit is properly connected and turned on, a window may open to allow you access to the volume. If no window appears, you can find the volume by double-clicking “My Computer.”

Eject RTX before powering it down by single-clicking the green arrow icon on the task bar, then selecting “Safely remove....” Windows will indicate when it is safe to disconnect RTX. Disconnecting the unit without first ejecting it can result in data loss.

3.2.4 Creating a Boot Drive

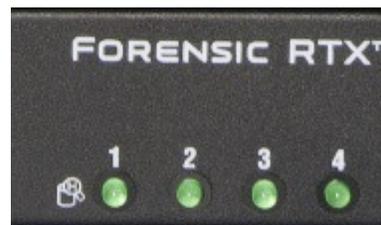
Some PC motherboards support booting from an external device. To activate this feature, you will need to adjust the motherboard’s BIOS settings. Check with your motherboard’s manufacturer or owner’s manual for details.

4. HPA/DCO

4.1 HPA/DCO Indication

Forensic RTX's HPA/DCO indication LEDs glow green if a drive containing a hidden area (called an HPA or DCO) is connected. If the drive does not have an HPA or DCO, the LED does not glow.

See http://www.wiebetech.com/hpa_dco.php for more information on HPAs and DCOs.

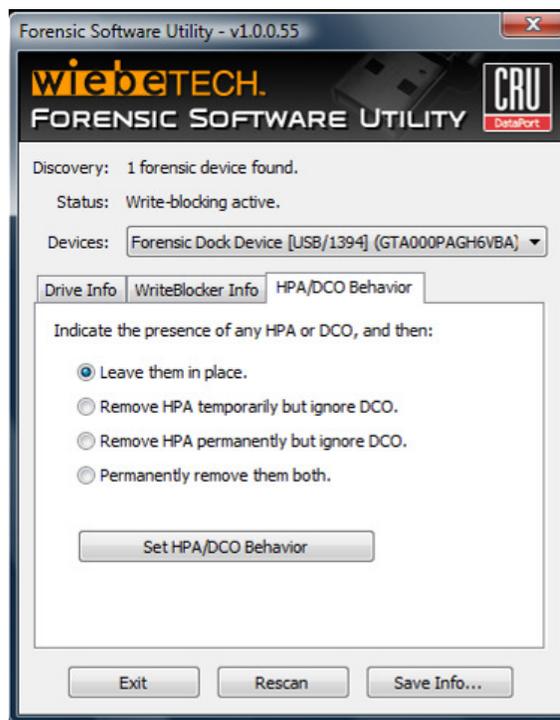


4.2 HPA/DCO Mode Setting (Requires USB or FireWire connection)

By default, the Forensic RTX is shipped on mode #1, leaving the HPA and DCO areas “as is” on the hard drive. To change your HPA/DCO mode setting, you must use the WiebeTech Forensic Software Utility. The Utility is available for download from our website, www.wiebetech.com. For more info on the Forensic Software Utility, see the separate user’s manual, which is also on the website.

Your WiebeTech Forensic RTX will alert you to the presence of any HPA or DCO. You may then use the Forensic Software Utility to manage the HPA/DCO for imaging. There are four modes:

- **Leave them in place.** The HPA and DCO areas will be left “as is” on the hard drive. This is an “indication only” mode. Your WiebeTech forensic device’s LED will blink to indicate the HPA/DCO presence. No other action is taken.
- **Remove HPA temporarily but ignore DCO.** This mode temporarily lets the user view information hidden by an HPA. No permanent changes are made to the hard drive. When the hard drive is removed from the WiebeTech forensic device, the HPA is reinstated. Any DCO is left untouched.
- **Remove HPA permanently but ignore DCO.** This mode completely removes the HPA, making the data behind it visible. When the hard drive is removed from the WiebeTech forensic device, the HPA is NOT reinstated. The DCO and data behind it are left untouched.
- **Permanently remove them both.** Any HPA or DCO are both completely removed, making all of the data behind them visible. When the drive is removed from the WiebeTech forensic device, the HPA and DCO are NOT reinstated.



5. Firmware Updates (Requires USB or FireWire connection)

Your WiebeTech Forensic RTX may require an update to its firmware. The Forensic Software Utility can recognize this and install the appropriate firmware on your device. If your product is running outdated firmware, you will see the following message upon activation of the Forensic Software Utility:



1. Click "Proceed with Update" to begin the update process.
2. You will see a status bar showing the progress of the update.
3. When the update is complete, you will see a message that says "Firmware is now up to date."

6. Frequently Asked Questions

Q: What are HPA and DCO?

A: A Host Protected Area (HPA) and Device Configuration Overlay (DCO) are reserved areas on a hard drive that are not accessible by the BIOS or OS. Data can be hidden behind an HPA or DCO. Forensic RTX will alert you if there is an HPA or DCO so that you are aware of it and can take the necessary steps to retrieve the hidden data. Forensic RTX's write-block LED will blink if a drive with an HPA or DCO is connected. If the drive does not have an HPA or DCO then the LED will light solid.

Q: Why is it necessary to update the firmware of my WiebeTech forensic device?

A: Firmware relates to the programs and data that control electronic products. Firmware is enhanced over time, usually to add new features or increase compatibility. Updating firmware can improve the functionality and dependability of your product. If your WiebeTech forensic device is utilizing outdated firmware, the WiebeTech Forensic Software Utility can recognize this and implement up to date firmware on your device. See section 5 of this manual for more information.

Q: I've attached my Forensic RTX and can see the volume, but it shows up twice. Which one is the real volume?

A: If you are seeing your Forensic RTX volume mounted twice, chances are the unit is connected to the computer using both the eSATA and FireWire connections. When this is the case, the OS may attempt to mount the RTX twice resulting in two volumes appearing. Simply turn off the RTX and unplug one of the connections to resolve the problem.

Q: Why does my eSATA device appear as a Parallel SCSI device in System Profiler?

A: The "Serial ATA" tab in System Profile shows devices attached to the internal SATA bus, but not always devices attached to an eSATA host card. Sometimes these devices will appear under the heading "Parallel SCSI" instead. This is entirely normal and does not indicate a problem with the device or its drivers.

7. Technical Specifications

Product name:	Forensic RTX410-3QJ SATA Forensic RTX410-3QJ IDE + SATA
Host Interfaces:	<ul style="list-style-type: none"> eSATA FireWire 800 (two ports per bay, daisy-chainable) USB 3.0 (compatible with USB 2.0 using USB 2.0 cable)
Drive Compatibility:	<ul style="list-style-type: none"> 2.5-inch & 3.5-inch SATA drives 3.5-inch IDE/PATA drives (IDE + SATA model only) 2.5-inch SATA using included converter
TrayFree Technology:	Yes, with bays two, three and four
HPA/DCO Detection	Yes, on all bays
Lockable Bays:	Yes, on all bays
Power LED:	Yes, on all bays
Access LED:	Yes, on all bays
Operating System Requirements:	Windows XP, Vista, Windows 7 Mac OS X Linux distributions supporting the desired connection type
Power Switch:	2 position: On / Off
Power Supply:	Input: 100-240VAC Output: 220 Watts
Cooling Fan:	8cm Ball Bearing Fan
External Material:	Aluminum alloy case
Shipping Weights:	25 pounds including accessories
Dimensions:	(177mm W x 270mm D x 231mm H)
Compliance:	CE, FCC, RoHS
Support:	We don't expect anything to go wrong with your product. But if it does, Tech Support is standing by and ready to help. Contact us through wiebetech.com/techsupport or call (866) 744-8722. WiebeTech is a brand of CRU.

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Limited Product Warranty

CRU-DataPort (CRU) warrants this product to be free of significant defects in material and workmanship for a period of two years from the original date of purchase. CRU's warranty is nontransferable and is limited to the original purchaser.

Limitation of Liability

The warranties set forth in this agreement replace all other warranties. CRU expressly disclaims all other warranties, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose and non-infringement of third-party rights with respect to the documentation and hardware. No CRU dealer, agent or employee is authorized to make any modification, extension, or addition to this warranty. In no event will CRU or its suppliers be liable for any costs of procurement of substitute products or services, lost profits, loss of information or data, computer malfunction, or any other special, indirect, consequential, or incidental damages arising in any way out of the sale of, use of, or inability to use any CRU product or service, even if CRU has been advised of the possibility of such damages. In no case shall CRU's liability exceed the actual money paid for the products at issue. CRU reserves the right to make modifications and additions to this product without notice or taking on additional liability.

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."

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a home or commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

In the event that you experience Radio Frequency Interference, you should take the following steps to resolve the problem:

- 1) Ensure that the case of your attached drive is grounded.
- 2) Use a data cable with RFI reducing ferrites on each end.
- 3) Use a power supply with an RFI reducing ferrite approximately 5 inches from the DC plug.
- 4) Reorient or relocate the receiving antenna.



Tested to comply
with FCC standards

FOR OFFICE OR
COMMERCIAL USE