



## Technical Brief to address Riser Card Interoperability

3ware has continued to test a wide range of motherboards against our industry leading 66MHz SATA RAID controllers (all 3ware 33MHz RAID controllers are un-affected). We have discovered through worst-case data testing an interoperability issue between certain motherboards, 3ware RAID controllers, and riser cards.

### Interoperability Issue

PCI parity errors can occur, which can manifest as an intermittent Windows boot failure or a Linux kernel panic. The errors can occur when some combinations of specific motherboards, third-party riser cards and 66MHz 3ware Escalade RAID controllers are installed together.

### 3ware Challenge

- To develop a comprehensive solution for those configurations requiring riser cards to reduce overall system footprints.
- To increase interoperability margins.

### Background

The need for riser cards has increased as a result of the requirement to install controllers in horizontal positions in high-density server segments. The server providers continue to offer the highest performance systems (PCI-X) driving the timing requirements across riser cards into very tight constraints.

This requirement offers a unique challenge to 3ware RAID controllers. The Escalade 8506 family of controllers support conventional 66MHz mode that specifies tighter PCI timing margins than their PCI-X counterparts. The interaction between 3ware 66MHz timing, conventional 66MHz or PCI-X extender riser cards and certain motherboards offer very narrow margins for interoperability.

### 3ware Solutions

To meet these tight timing constraints and to deliver the most robust and reliable products, 3ware will deliver a short term and long term solution to address this issue.

- For a limited time a right angle 1U riser card with enhanced noise immunity will be made available, in limited quantities, to customers who have installations that have experienced interoperability problems with 3ware RAID controllers and riser cards (available now). A riser card vendor who can supply larger quantities can be found at the end of this document.
- The long-term solution from 3ware will be an integrated 3ware RAID controller with improved interoperability margins via enhanced circuitry. **Availability is Q1, 2004.**



### Motherboards affected and Resolution

Affected Motherboards	
Intel 750X chipset	AMD
Intel SE7501CW2 (Clearwater)	Tyan S2880
Intel SE7501CW2 w/Intel riser	Tyan S2885
Intel SE7500CW2	
ASUS PP-DLW	

These motherboards were identified as failing under one of the following conditions:

- A MB manufacturer's riser card installed with a 3ware 66MHz RAID controller
- 3ware 66MHz RAID controller installed directly in a PCI-X slot (slots 1,2,3,4,5 on AMD only)

**All of these motherboard interoperability issues have been resolved with enhanced interoperability solutions from 3ware.**

### What's Next?

3ware will add enhanced circuitry to improve noise immunity for all 8506 and 9500 Serial ATA RAID controllers in Q1'2004. In the interim, 1U riser cards to address this issue can be purchased from the following vendor: Please check with Adex for additional specifications and ordering options.

Adex P/N: PCITX8-3R (be sure and ask for the "R" part)  
Cheryl Roberts  
Tel: 949-597-1772  
Fax: 949-597-1729  
Email: [cheryl@adexelec.com](mailto:cheryl@adexelec.com)  
<http://www.adexelec.com>

Contact 3ware support or sales at 1-877-883-9273 to find out how to order samples of the enhanced noise immunity riser cards from 3ware.