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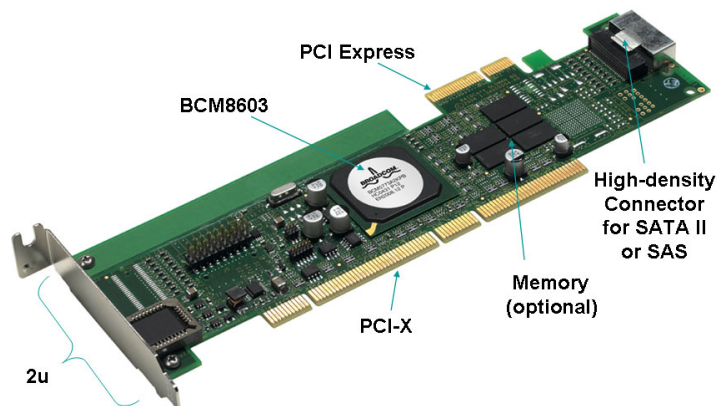
BCM8603
PRODUCT Brief

CONCEPT CARD: SAS/SATA RAID CONTROLLER

XELCORE™ RAID SOFTWARE FEATURES AND BENEFITS

- **Online capacity expansion**—add/expand capacity without interrupting I/O
- **Online RAID-level migration**—change RAID levels without interrupting I/O
- **Controller spanning**—up to four BC5000 cards per server appear as a single 32-port controller for large array support
- **Mirror splitting**—split and hide array mirrors for enhanced protection from viruses, user error, and disk failure
- **Distributed sparing**—add reliability without sacrificing economy or performance
- **Multiple RAID levels: RAID0, 1, 1+N, 10, 10+N, 5, 50, JBOD**—a broad range of RAID protection and performance features to meet the most sensitive data needs; allows full use of high drive counts
- **Online array creation and deletion**—create or remove arrays without interrupting user I//O
- **Multiple array types per drive**—achieve maximum utilization
- **INT13 control**—turn off INT13 BIOS loading for maximum compatibility
- **Hot swap and drive roaming support**—detection and support for drive removal/insertion on running system; drives can be moved between channels and cards
- **64-bit I/O block number support**—create arrays larger than 2 terabytes
- **Programmable staggered drive spin-up**—reduce initial drive power demand by adjusting the timing of drive spin-up

CONTROLLER CARD FEATURES AND BENEFITS

- **Host-based or RAID-on-chip (ROC)**—option for onboard RAID processing and cache memory for compute-intensive applications
- **Serial storage interfaces—Serial Attached SCSI (SAS) or SATA II**
  - SAS: 3 Gbps, supports both SATA and SCSI drives
  - SATA II: 3 Gbps, native command queuing
- **System bus: PCI Express™ or PCI-X®**
  - PCI-X widely-used storage I/O
  - 133 MHz
  - New PCI Express for 2.5-Gbps I/O transfer rate
- **Four or eight storage channels**—expand capacity up to 32 drive to support a wide range of array types
- **2U, low-profile**—maximize space usage with RAID-enabled low-profile cards
- **Choice of Windows® or Linux®**
  - Windows:
    - 2000
    - 2003
    - XP
  - Linux:
    - Red Hat® 9 and RHEL 3
    - Fedora™ Core 1 and Core 2
    - SuSE® Linux Enterprise Server 9 (32-bit and 64-bit)
    - SuSE Professional 9.1 and 9.2
    - SDKs for other 32-bit and 64-bit Linux operating systems

PCI Express

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High-density Connector for SATA II or SAS

Memory (optional)

PCI-X

2u

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The BCM8603 concept card illustrates the flexibility and choice offered by the Broadcom technology. In implementations of PCI-X or PCI Express, SAS or SATA II, and RAID for embedded or host bus adapter applications, the BCM8603 is the only single-chip solution available.

The BCM8603-based concept card from Broadcom represents a host bus adapter implementation of the BCM8603 delivering RAID support with either PCI-X or PCI Express bus interfaces, and either SAS or SATA II drive support. In this implementation, the BCM8603 delivers an enterprise-class RAID solution that allows a choice between these technologies today, while allowing compatible inclusion or transition between them tomorrow. This unmatched storage flexibility enhances the benefit that Broadcom controllers and XelCore™ RAID software provide—the ability to deploy the best price/feature/performance package available in the RAID market today.

Concept card only. Product implementations will be available in Summer 2005.

Concept Card and XelCore™ Feature Overview

	Model 1	Model 2	Model 3	Model 4
PCI-X	X	X	–	–
PCI Express	–	–	X	X
SAS	–	X	–	X
SATA II	X	–	X	–
Host-based RAID	X	X	X	X
ROC	X	X	X	X
Storage channels	4 or 8	4 or 8	4 or 8	4 or 8
Online capacity expansion	X	X	X	X
Online RAID level migration	X	X	X	X
Controller spanning	X	X	X	X
RAID levels of 0, 1, 1n, 10, 10n, 5, 50, and JBOD	X	X	X	X
Mirror splitting and hiding/unhiding	X	X	X	X
Selectable boot array	X	X	X	X
Drive roaming	X	X	X	X
Cache support	X	X	X	X
Programmable staggered drive spin-up	X	X	X	X
Background array initialization	X	X	X	X
Background and scheduled consistency support	X	X	X	X
Sparing support: global, dedicated, distributed	X	X	X	X
Multiple array types per drive	X	X	X	X
Touched region logging	X	X	X	X
BIOS support: create, boot, INT13 control	X	X	X	X
Hot swap support	X	X	X	X
E-mail alert support	X	X	X	X
Instant RAID array create support	X	X	X	X

Representative Concept Card Physical Specifications

- Low-profile
- PCI-X 133 MHz, 32-bit/64-bit, 3.3V, and 5V up to PCI Express
- Standard PCI bracket attached, including a 2U bracket
- 2.5 inches by *x* inches (cm by cm)
- Four or eight SAS or SATA II ports
- Operating temperature of 0°C to 55°C
- Fault tolerance support—auto-detection of failed drives, automatic rebuild of failed drives, hot swapping, and hot sparing

XelCore™ Online Management Utilities

- While arrays are online and active:
  - Create and manage multiple arrays
  - Expand capacity by adding disks
  - Migrate arrays to different RAID levels
- Advanced management application and BIO management utility
- Boot-up configuration via BIOS
- Array and logical drive configuration utility at the BIOS level

XelCore™ Operating System Support

- Windows
  - 2000
  - 2003
  - XP
- Linux
  - Red Hat 9 and RHEL 3
  - Fedora Core 1 and 2
  - SuSE Linux Enterprise Server 9 (32-bit and 64-bit)
  - SuSE Professional 9.1 and 9.2
  - SDKs for other 32-bit and 64-bit Linux operating systems

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