Agilent HHBA-5418, HHBA-5420
Low Profile, 2 Gb/s, Dual Port PCI-X to Fibre Channel Adapters

Product Overview

Product Description

The HHBA-5418/20 are Agilent's low profile, 2 Gb/s, dual-port PCI-X to Fibre Channel Adapters for high performance storage area networks and clustering environments. These products feature two independent fibre channel ports and a PCI-X interface for increased connectivity and higher bandwidth. The low profile host adapters are specifically designed for use in 1U and 2U servers.

Performance and Scalability

Based on Agilent's Tachyon DX2 single-chip Fibre Channel controller, the HHBA-5418/20 eliminate performance bottlenecks and inter-operability issues associated with dual-port adapters using multi-chip controllers and PCI-to-PCI bridge implementations. Agilent's proven Finite State Machine (FSM) architecture allows performance to scale seamlessly with increased server CPU power.

By contrast, processor-based adapters are limited by the maximum performance of the processor itself.

The combination of Agilent's 2 Gb Fibre Channel technology and 133 MHz PCI-X delivers unparalleled performance, scalability and connectivity. The HHBA-5418 and HHBA-5420 products accommodate 1 Gb/s and 2 Gb/s fibre channel devices without hardware modification, preserving investments in legacy systems as well as allowing seamless migration toward new 2 Gb/s SAN installations.

Compatible with SAN environments

The HHBA-5418/20 ensures full backward compatibility with 33/66 MHz PCI while providing a smooth upgrade path to the next generation, 133 MHz PCI-X.

Features

- **Low profile, MD2 short card**
- **Two independent 2 Gb/s Fibre Channel ports for a combined bandwidth of 800 MB/s**
- **64-bit, 133 MHz PCI-X**
  - Up to 1 GB/s PCI-X bus transfer speed
  - Backward compatible with 33/66 MHz PCI
  - 3.3V PCI/PCI-X
- **Auto speed negotiation at 1 or 2 Gb/s**
- **LED speed link indicator**
- **Loop and fabric support**
- **FC class 3**
- **Supports fibre channel arbitrated loop (FC-AL) including public loop and fabric (F- and FL-port login)**
- **Optical and copper media interfaces**
  - HHBA-5418/20: Small Form Factor Pluggable (SFP) for either optical transceiver or copper connector

Applications

- **Storage Area Networks (SANs)**
- **Clustering**
- **Back-up**
- **Near on-line storage**
- **Video editing and CAD**
- **Data mining**
- **Data warehousing**
- **OLTP**
- **RAID and JBOD**

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Specifications

Fibre Channel Operation	
Data Rate	2 Gb/s per port: 200 MB/s (half duplex), 400 MB/s (full duplex)
Auto-Speed Negotiation	1 or 2 Gb/s
Topology	Arbitrated Loop – Public and Private, Fabric support (F- and FL-login)
FC Service Class	Class 3
Upper Layer Protocol	SCSI FCP – On-chip automation of complete SCSI I/O
Loop Initialization	Completely hardware-based for high availability
Link Diagnostics	Link Status indicators, internal/external loopback
Link Speed	2 Gb and 1 Gb status indicator
Compliance	FC-PH, FC-AL, FC-AL-2, FC-PLDA, FCP-SCSI
PCI Interface	
Compliance	PCI-X Addendum, Rev 1.0a PCI-X Local Bus Specification 1.0a PCI Local Bus Specification 2.2 ACPI/Power Management Specification Hardware Design Guide for Windows NT Server, version 2.0
Width & Rate	64-bit, 133 MHz PCI-X
Burst Transfer Rate	1 GB/s
Dual Address Cycle Support	Yes
Hot Plug Support	Yes
Additional PCI Features	Zero wait state multiple cache line bursting capable up to full frame size, 32-byte cache line
Tachyon DX2 Architectural Features	
Complete Hardware-based Design	Less than one interrupt per I/O (tunable via software) Backward compatible with Tachyon XL2 programming interface Up to 6 split reads (3 per channel) Message Signaled Interrupt Programmable max burst length
Physical and Environmental	
Form Factor	Low Profile PCI Card, MD2 form factor (length 6.6" x height 2.536")
PCB Power	4W max at 3.3V ± 10%
Supply Voltage	3.3V ± 10%
Operating Temperature Range	0° to 55° Centigrade (no airflow)
Storage Temperature Range	-40° to 70° Centigrade
Relative Humidity	up to 90% (non-condensing)
Software Support	
Tachyon Software Developer's Kit (TSDK)	Windows 2000 Linux Environments VX Works
Certifications	
FCC Class B	US/FDA/CDRH Laser AEL Class 1 (2 CFR)
CE	TÜV Rheinland Laser AEL Class 1 (EN60825-1+A11)
VCC ITE Class	
C-TICK (AZ/NZS 3548)	

Product Offering	Description
Low Profile Products	
HHBA-5418x	Single Adapter card with SFP cage
HHBA-5418xP	Bulk packaging includes Adapter card with SFP cage
HHBA-5418xP1	Bulk packaging includes Adapter card with SFP LC optical transceiver
Standard Products	
HHBA-5420x	Single Adapter card with SFP cage
HHBA-5420xP	Bulk packaging includes Adapter card with SFP cage
HHBA-5420xP1	Bulk packaging includes Adapter card with SFP LC optical transceiver

www.agilent.com/semiconductors

For product information and a complete list of distributors, please go to our web site.

For technical assistance call:

Americas/Canada: +1 (800) 235-0312 or (916) 788-6763

Europe: +49 (0) 6441 92460

China: 10800 650 0017

Hong Kong: (65) 6756 2394

India, Australia, New Zealand: (65) 6755 1939

Japan: (+81 3) 3335-8152(Domestic/International), or 0120-61-1280(Domestic Only)

Korea: (65) 6755 1989

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Data subject to change.

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