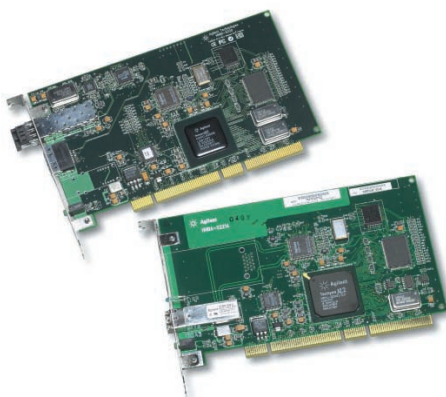


Agilent HHBA-5220, HHBA-5221

2 Gb/s Host Adapters for High Performance Fibre Channel Applications

Product Brief



Product Description

Agilent's HHBA-5220 and HHBA-5221 are 64-bit, 66 MHz PCI to 2 Gb/s Fibre Channel host bus adapters (HBAs) for enterprise Storage Area Network (SAN) applications. Supporting both one and two Gigabit link speeds, the new HBAs provide auto-negotiation for seamless integration in the one and two Gigabit environments. The versatility of the new HBAs is based on Agilent's market-leading Tachyon Fibre Channel (FC) controllers, offering unmatched performance and flexibility.

Flexible Connection Options

Agilent's 2 Gb/s HBAs are available with both fiber-optic and copper cable connections. For high-end applications where performance and reliability are critical, the HHBA-5221 has a Small Form Factor (SFF) pin through-hole LC optical transceiver for use with multimode optical cable.

For cost-sensitive applications, the HHBA-5220 offers a High Speed Serial Data Connector (HSSDC) interface for copper cabling, and also includes a cage (receptacle) for a Small Form Factor Pluggable (SFP) LC transceiver. The SFP option allows customers to upgrade the HHBA-5220 to optical

media, as their applications change and require higher reliability and longer distances.

Scalable Performance Matches Demanding SAN Requirements

The 2 Gb/s HBAs are powered by Agilent Tachyon controllers, which employ a Finite State Machine (FSM) architecture. The FSM allows performance to scale seamlessly with increased server CPU power as opposed to processor-based adapters, which are limited by the maximum performance of the processor itself.

Widest Range of Software Support

To support the 2 Gb/s HBAs, Agilent offers drivers for Microsoft® Windows® 2000, Windows NT®, and Linux. Agilent's drivers also support the Storage Networking Industry Association (SNIA) application program interfaces (APIs) for storage management applications. Additionally, Agilent is developing drivers for upcoming 64-bit servers. Agilent drivers for Windows® 2002, 64-bit Linux, and AIX 5L will be available to support production versions of the new operating systems.

Features

- Fibre channel data transfer rates:
 - up to 200 MB/s (half duplex)
 - up to 400 MB/s (full duplex)
- Two physical interface styles
 - HHBA-5221: Small Form Factor (SFF) LC optical transceiver
 - HHBA-5220: standard HSSDC copper connector and Small Form Factor Pluggable (SFP) LC optical transceiver
- Bootable BIOS, EFI support
- Auto-negotiation 1 or 2 Gb/s
- 2 Gb/s LED link speed indicator
- Supports fibre channel arbitrated loop (FC-AL) including public loop and fabric (F- and FL-port login)
- FC class 2 and 3
- 64-bit, 66 MHz universal PCI interface (2.2 compliant)

Applications

- Storage Area Networks (SANs)
- Data warehousing
- Clustering
- Remote back-up
- Near on-line storage
- Video editing & CAD



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Specifications

Fibre Channel Operation

Fibre Channel Data Rate	2 Gbit/sec, 200 MBytes/sec (half duplex), 400 MBytes/sec (full duplex)
Auto-speed Negotiation	The HHBA-5221 and the HHBA-5220 auto-negotiation at 1 or 2 Gb/s
Bootable Support	BIOS (INIT13), EFI
Topology	Arbitrated Loop – Public and private, Fabric support (F- and FL-login)
FC Service Class	Class 2 (Ack_0, Ack_1) and 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/s status indicator
Compliance	FC-PH, FC-AL, FC-PLDA, FCP-SCSI

PCI

Compliance	PCI Local Bus specification v2.2
Rate & Width	66/33 MHz, 64/32-bit PCI
Burst Transfer Rate	528 Mbytes/sec, guaranteed for length of frame, inbound & outbound at 64-bit, 66 MHz
Dual Address Cycle Support	Yes (64-bit PCI addressing)
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 XL2 Architectural Features

Complete Hardware-based Design	Less than one interrupt per I/O Numerous independent functional blocks concurrently processing inbound data, outbound data, control and commands in hardware Automation of complete I/O on-chip in hardware results in lowest latency & I/O overhead and highest levels of parallelism
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Physical and Environmental

PCB Size	Universal PCI short card
PCB Power	HHBA-5221: 7W max at 5V \pm 5%; HHBA-5220: 9W max at 5V \pm 5%
Supply Voltage	3.3V \pm 5%, 5V \pm 5%
Operating Temperature Range	0° to 55° Centigrade (no airflow)
Storage Temperature Range	-40° to 70° Centigrade
Relative Humidity	up to 90% (non-condensing)

Operating System Support

Microsoft	Windows NT 4 (includes FC Tape Class 3) Windows 2000, Windows 2002 (64-bit) – all include FC Tape Class 3, and IP Support
IBM	AIX 5L
Turbolinux	Linux (32 and 64-bit)
Novell NetWare*	5.0 NWPA
SCO UnixWare*	7.0
Solaris x86*	7.0
Red Hat LINUX*	6.0

*Software available upon OEM request.

Certifications

FCC Class A	US/FDA/CDRH Laser AEL Class 1 (2 CFR)
CE	TÜV Rheinland Laser AEL Class 1 (EN60825-1+A11)
VCCI ITE Class	
C-TICK (AZ/NZS 3548)	

Product Offering

Description

HHBA-5221x	Single Adapter card with SFF transceiver
HHBA-5221xK	Kits include Adapter card with SFF transceiver, user manual, and OS driver diskette
HHBA-5221xP	Bulk packaging Adapter card with SFF transceiver
HHBA-5220x	Single Adapter card with HSSDC connector and SFP transceiver cage
HHBA-5220xK	Kits include Adapter card with HSSDC connector and SFP transceiver cage, user manual, and OS driver diskette
HHBA-5220xP	Bulk packaging Adapter card with HSSDC connector and SFP transceiver cage
HHBA-5220xK-01	Kits include an Adapter card with HSSDC connector and an SFP transceiver, user manual, and OS driver diskette
HHBA-5220xP-01	Bulk packaging Adapter card with HSSDC connector and SFP transceivers



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