

66 MHz, 64-bit PCI-to-Fibre Channel Host Adapter

Features

- **Fibre Channel Data Transfer Rates:**
 - Up to 100 MB/s (Half Duplex)
 - Up to 200 MB/s (Full Duplex)
- **Simultaneous Internal and External Connectivity**
 - HSSDC Connector for Intra-Cabinet Connectivity
 - GBIC for External Connectivity
- **66 MHz, 64-bit Universal PCI Interface, Compliant with PCI Local Bus Specification v2.1**
- **Fully Backward Compatible with 32-bit & 33 MHz PCI**
- **Supports PCI Dual Address Cycles (64-bit PCI Addressing)**
- **One or Less PCI Bus Interrupt per SCSI I/O Operation**
- **Supports Fibre Channel Arbitrated Loop (FC-AL), Including Public Loop Support and Fabric (F- and FL-Port Login)**
- **PCI Hot Plug Support**

Server/Workstation Applications

- **Storage Area Networks (SAN)**
- **Data Warehousing**
- **Clustering**
- **Remote Back-Up and Archiving**
- **Near On-Line Storage**
- **Video Editing & CAD**

Description

The HHBA-5121A is a 64-bit, 66 MHz PCI-to-Fibre Channel Host Bus Adapter for mass storage applications that require FC-AL or Fabric, Class 3 and SCSI upper layer protocol handling.

At the heart of the HHBA-5121A is the HPFC-5166 Tachyon TS Fibre Channel Interface Controller IC – the latest generation of TACHYON ICs.

The Tachyon TS controller is based on the proven TACHYON hardware state machine architecture. This architecture enables performance to scale proportional to the system CPU resources available and avoids bottlenecks associated with on-chip processors. The TACHYON architecture is also designed to realize the full potential of Fibre Channel by providing the highest levels of concurrency via numerous independent functional hardware blocks that enable parallel control, command and data processing. The result is minimized latency and I/O overhead coupled with the highest levels of parallelism to provide maximum I/O rates and bandwidth.

Connectivity and Flexibility

The HHBA-5121A offers system vendors with significant configuration flexibility by providing both an internal and external Fibre Channel

HHBA-5121A



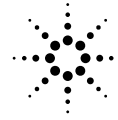
connection. An HSSDC connector is available for intra-cabinet connectivity, while a GBIC (copper or optical) provides external connectivity. System vendors can utilize either one or both of the connectors simultaneously.

Software Driver Support

The HHBA-5121A supports a comprehensive set of software drivers for major Operating Systems: Microsoft® Windows NT®, Novell NetWare® SCO UnixWare®, Solaris x86, and an I20 HDM. Additional drivers will be available soon.

Product Offering

The HHBA-5121A is available in five configurations. The HHBA-5121AK is a kit which includes an adapter card, manual and O/S drivers on diskette. In addition, there are two kit options which include an industry standard GBIC: HHBA-5121AK-01 with an 850 nm optical GBIC or HHBA-5121AK-02 with an HSSDC Copper GBIC. The HHBA-5121A and HHBA-5121AP are single and bulk packaged adapters, respectively.



Specifications

Fibre Channel Operation	
Fibre Channel Data Rate	1 Gbit/sec, 100 MBytes/sec (half duplex), 200 Mbytes/sec (full duplex)
Topology	Arbitrated Loop – Public and private, Fabric support (F- and FL-login)
Class	3
Upper Layer Protocol	SCSI FCP – On-chip automation of complete SCSI I/O
Loop Initialization	Completely hardware-based for high availability
Arbitrated Loop Capabilities	Loop map, Loop directed reset, Loop broadcast
Link Diagnostics	Link Status indicators, internal/external loopback
Compliance	FC-PH, FC-AL, FC-PLDA, FCP-SCSI
PCI	
Compliance	PCI Local Bus specification v2.1
Rate & Width	33/66 MHz, 64/32-bit PCI
Burst Transfer Rate	528 Mbytes/second, guaranteed for length of frame, inbound & outbound at 64-bit, 66 MHz
Dual Address Cycle Support	Yes
Additional PCI Features	Zero wait state multiple cache line bursting capable up to full frame size, 32-byte cache line
Tachyon TS Architectural Features	
Complete Hardware-Based Design	Numerous independent functional blocks concurrently processing inbound data, outbound data, control and commands in hardware Six DMA channels Automation of complete I/O on-chip in hardware Results in lowest latency & I/O overhead and highest levels of parallelism
Physical and Environmental	
PCB Size	Universal PCI short card (6.421" x 4.2")
PCB Power	11 W max, 8 W typical at 5 V +/- 5%
Supply Voltage	5 V +/- 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 (x86)	NT 4, Windows 2000
SCSI Miniport	
Novell NetWare	4.2 NWPA, 5.0 NWPA
SCO UnixWare	7.0
Solaris x86	7.0
I20 HDM	1.5
Certifications	
FCC Class B	US/FDA/CDRH Laser AEL Class I (21CFR)*
CE	TÜV Rheinland Laser AEL Class 1 (EN60825-1+A11)*
VCCI ITE Class B	
C-TICK (AZ/NZS 3548)	*Applies only to HHBA-5121AK-01 (with 850 nm optical GBIC inserted)