



iSPAN[®] 4576 PMC ATM OC-3c/STM-1 Interface Card

Price/Performance-Maximized Wide Area ATM Connectivity

FEATURES

Fastest ATM OC-3c/STM-1 card on the market! A new industry benchmark in throughput!

Software support for VxWorks[®], Solaris[™], and Linux[®]

Automatic Protection Switching (APS) for path guarantees

Mindspeed[™] RS8234 155 Mbps ATM SAR

Mindspeed CX28250 Phy

Redundant physical interfaces for 155 Mbps connectivity

Support for ATM AAL5 and AAL0 Adaptation Layers

Constant Bit Rate (CBR), Variable Bit Rate (VBR) and Unspecified Bit Rate (UBR) services implemented in the hardware

Up to 32 K simultaneous Virtual Connections (VCs) supported

OAM status notification supported

iSAR API and command diagnostic utility

Classical IP (CLIP) Support

Future enhancements:

- SNMP Agent

APPLICATIONS

Video Conferencing

Routers/Bridges

Gateways

Data Warehouse Systems

DSLAMs

As the demand increases for high-bandwidth services in business and residential markets, carriers and enterprises increasingly look to ATM-based networks to deliver these services in a cost-effective and reliable manner. Today's networks require scalable, high-performance platforms with the flexibility to allow network capacity to keep pace with customer's demands.

Designed especially for high-availability, high-bandwidth access applications, the Interphase iSPAN[®] 4576 PMC ATM OC-3c/STM-1 Interface Card provides cost-effective, reliable ATM connectivity

at 155 Mbps. The 4576 meets the needs of a variety of applications, including IP Switching and Routing, Internet connections and other applications that require the Quality of Service (QoS) guarantees provided by ATM. The low price and high performance qualities of the 4576 make it the best 155 Mbps value in the industry.

In addition, our tests have proven that the 4576 out-performs any other passive OC-3/STM-1 card on the market. The low price and high performance qualities of the 4576 make it the best 155 Mbps value in the industry.

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interphase.com
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4576 Software

Seamless Integration with Robust Software Development Tools

The 4576 is available with a kit for board & software development in Solaris™, VxWorks®, and Linux® environments. Included in this kit is the iSAR Application Programming Interface (API) to provide a seamless, consistent interface between the 4576 and supported operating systems. The Interphase-developed API and software layers enable application development without the need to be involved in low layer ATM driver development. The Automatic Protection Switching (APS) feature is hardware supported, enabling maximum uptime, reliability and network resiliency with software notification and PHY modification support.

Solaris, VxWorks, and Linux Support

The 4576 is available with a board development and software kit for Solaris, VxWorks, and Linux operating systems, which would run on the host CPU. Each of these software packages include the following components:

- **Low level driver:** Binary driver written for the specific OS
- **API library:** Refer to description below
- **Source header files:** Required for application development
- **iSARTest:** An application program that uses the API, functioning as a command diagnostic utility, which can be used to perform adapter testing, configuration, and management. It provides the application and API that isolates the application from dealing directly with the complexity of the hardware, simplifying the application production process.
- **iSARConf:** An adapter configuration file used by iSARTool
- **iSARTool:** A comprehensive test tool designed to facilitate diagnostic and debug functions
- **Users Guide documentation:** Documentation includes details on installing the 4576 hardware module, an overview of the API, and detailed information regarding each API function call and usage of iSARTest.

iSAR API

The iSAR API, included in the development kit, is an AAL layer API providing an efficient mechanism to enable configuration and control parameters for the driver, each adapter, and their respective Virtual Circuits (VCs). The API simplifies the development process by isolating the application from the complexities of the hardware while providing robust control of the hardware and data link.

- Query functions provide access to discovery, state, and statistical information for the hardware, data link, and established VCs
- Control functions provide configuration and dynamic management of the hardware and adapter parameters
- VC functions allow you to open, close, and transmit and receive data across each connection. Receive data is returned asynchronously to the application via a “callback” function supplied at circuit setup

- Alarms provide asynchronous event notification back to the application, using a “callback” function specified in the setup message. Event conditions may be individually enabled/disabled by the application. The API is implemented as a series of asynchronous messages and responses exchanged between the application and the API. All software runs on the host system. Developer’s applications should be written according to our API and should link our API library with the application. The API can provide asynchronous event notification to the application.

Interphase Customer Service and Support

All Interphase WAN, LAN and storage products are backed by support programs designed to deliver maximized uptime for our customers worldwide. Included are standard and extended product warranty packages, standard and enhanced “7x24” live technical assistance, and free Web-based online support for the life of the product, including technical notes, downloadable driver enhancements, and information on new product releases. Interphase customer support ensures investment protection for your networking, remote access and mass storage connectivity.



4576 Hardware

Powerful Features for Next-Generation Telecom Applications

Mindspeed RS8234 155 Mbps ATM SAR

Conforms to the ATM Forum recommendations

- 32-bit 33 MHz PCI 2.1 compliant with universal signaling
- UTOPIA 1 interface, with two PHY chip selects for APS capability
- 32-bit local bus interface
- Up to 32 K of total Virtual Channels bidirectional
- Hardware support of CBR, VBR and UBR services
- OAM functions support
- 256-Byte receive FIFO
- 512-byte transmit FIFO

Mindspeed CX28250 PHY

- Meets ATM Forum standards
- 155 Mbps full duplex operations
- 8-/16-bit UTOPIA
- Different levels of loop back control

PCI Bus

PCI bus master features:

- 32-bit, zero wait transfers for up to 132 Mbps burst DMA rate
- 2048-byte PCI write FIFO (receive path)
- 64-byte PCI read FIFO (transmit)

PCI bus slave features:

- Address decoded with medium speed device
- Memory and configuration read & write cycles supported

Memory

- 4 MB SRAM control memory for up to 32 K Virtual Connections (VCs)
- 1 KB of serial EEPROM

Automatic Protection Switching

The RS8234 SAR has a UTOPIA 1 bus, with two PHY chip selects. In conjunction with the CX28250 PHYs, the second PHY chip select allows the second PHY to share the same UTOPIA bus for APS capability. Both PHYs transmit and receive all data. Both PHYs receive data from the redundant network, but only the primary PHY transfers data back to the ATM SAR. APS operating parameters and event notification are available through the API, including the selection of active and/or protective PHY.

Interphase provides the 4576 in two basic configurations to support APS operation:

- Single PHY for 1:n implementation
- Dual PHY for 1+1 implementation

Clocks

The 4576 uses three clock sources: the PCI clock, the system clock and ATM front end clock.

ATM Features

Interphase is the industry-leader in ATM technology. The 4576 offers the following ATM features:

- Single SAR, with two ATM connections for APS using 155 Mbps optical transceivers with SC connectors
- 19.44 MHz clock for transmit and receive references
- ATM AAL5 or AAL0 connectivity
- Constant Bit Rate (CBR), Variable Bit Rate (VBR) and Unspecified Bit Rate (UBR) services
- 32 K Virtual Connections (VCs)
- Link status and software status indicators

Tech Specs

Architecture

Bus Type	PMC (PCI 2.2 Compliant)
Bus Data Transfer	32-bit, 33 MHz
SRAM	4 MB

Mechanical

Length	149.0 mm (5.87 in.)
Width	74.0 mm (2.9 in.)
Indicators	OAM, Link Active, Driver

Operating Environment

Temperature	0 to 55 °C (32 to 131 °F)
Storage Range	-40 to 80 °C (-40 to 176 °F)
Relative Humidity	5% to 95% non-condensing
Altitude	0 to 15,000 ft
Power Consumption	

	3.3 V	5.0 V	Total
Single PHY	0.30 A	0.6 A	4.5 W
Dual PHY	0.35 A	1.07 A	7.0 W

Software Support (Contact swlib@iphase.com for availability)

VxWorks
Solaris
Linux



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Configuration Options

The iSPAN 4576 PCI ATM OC-3c/STM-1 Interface Card is available in the following configurations (with SC Connectors):

CONFIGURATION	DESCRIPTION
4576-004	Multimode (62.5/125) fiber, 32 K VCs, single PHY
4576-005	Multimode (62.5/125) fiber, 32 K VCs, dual PHYs
4576-006	Single mode intermediate range (10/125) fiber, 32 K VCs, single PHY
4576-007	Single mode intermediate range (10/125) fiber, 32 K VCs, dual PHYs

Contact your Interphase sales representative for long range, single mode fiber, ST connector configurations, and/or 64 K VCs.

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Specifications and features subject to change without notice.

Notes