



iSPAN[®] 4539F Quad-Port T1/E1/J1 PMC Communications Controller

Front access design based on the field-proven, most advanced I/O architecture in the industry

FEATURES

Freescal MPC8264A (PowerQUICC II[™]) on-board processor, featuring:

- 300 MHz RISC CPU, 570 MIPS
- 64-bit, 66 MHz local data bus
- Up to 700 Mbps CPM protocol engine

Four individually software selectable T1/E1/J1 interfaces on front panel

On-board support for multiple network protocols including:

- ATM (AAL0, 2, 5)
- SS7 – Traditional (MTP1 & 2)
- SS7 – High Speed Links (MTP1 & 2)
- Q.SAAL (SSCOP/SSCF)
- Frame Relay
- HDLC
- Custom software development available via the Interphase Professional Services Group

32-bit, 33/66 MHz PCI bridge, supporting multiple transfer modes

Modular PMC form factor suits CompactPCI[®], VME, and proprietary environments

TDM and UTOPIA interfaces on PMC connectors P3/P4

PT2MC & PT3MC on request

Telecom clock management, master or slave synchronization modes

Rear access and gateway-on-a-card capability with addition of Fast Ethernet interface available using iSPAN 4538 or 4539 products

APPLICATIONS

Server Clusters

Enterprise Backbone

LANs

ISPs

Network Attached Storage

Data Warehousing

Web Servers

The rapid expansion of the Internet and the insatiable end-user demand for communication across multiple network mediums have driven the need for a new generation of network infrastructure. As the need for bandwidth at the network access points increases over time, service providers must strive to provide more robust equipment to upgrade the bandwidth constraints in the local loop. The new generation of multi-port and high bandwidth interconnect technologies from Interphase meet these needs, while supplying advanced applications building blocks, such as robust protocol interworking tools, for the network infrastructures of tomorrow.

The iSPAN[®] 4539F Quad-Port T1/E1/J1 PMC Communications Controller from Interphase provides a powerful "best in class" communications I/O solution for 1.544 Mbps/2.048 Mbps connectivity. This feature-rich solution features one of the most advanced communications processors available, offloading the host processor. As part of the MPC8264A-based product family from Interphase, development efforts on the 4539F can be leveraged on sister products for future development projects that may require different interfaces, form factors, feature-sets, or O/S environments.





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Software Support

Interphase offers a robust suite of software development tools to help shorten the learning curve and design cycle for integration projects based on the 4539F communications controller. Because integrators and equipment providers have diverse development environments, Interphase provides three types of development tools, each tailored to the needs of different integration types. The Board Development Kit (BDK) facilitates development of device drivers, embedded protocol firmware and applications for the 4539F hardware module. The *i*WARE[®] Software Development Suite offers developers a set of Interphase-developed firmware protocol stacks, accessible via APIs provided by Interphase.

Hardware

The *i*SPAN 4539F Quad-Port T1/E1/J1 PMC Communications Controller is a new member of the flagship family of products in the Interphase line of MPC8264A-based communications controllers for carrier-grade telecommunications environments. The MPC8264A Core CPU is a PowerPC[™] 603e CPU connecting to a 64-bit, 66 MHz local memory bus for SDRAM memory access and PCI I/O transfers via the Tundra PowerSpan[®] II PCI bridge. Also connected to the 64-bit local bus is a 8 MB downloadable FLASH Memory that can be used to store boot code.

The 8264A Communications Processor Module (CPM) interfaces to the world class T1/E1/J1 framers. The 4539F front access T1/E1/J1 ports contain RJ-48C connectors for standardized connectivity.

Processor/Memory

- PowerQUICC II[™] (MPC8264A) RISC processor allows full support of various communications protocols, reducing host CPU processing
- The line interface can be configured in Line Termination (clock slave) or Network Termination (clock master) mode
- Dual bus architecture: 64-bit 60x bus and 32-bit local CPM bus
- 128 MB SDRAM memory
- 8 MB downloadable 8-bit Flash Memory
- 300 MHz core, 200 MHz CPM, 570 MIPS CPU

Line Interfaces

Four individually software selectable front access T1/E1/J1 interfaces

- No component changes between T1, E1, or J1 terminations
- Each RJ-48C line is software configurable in Line Termination or Network Termination mode

PCI Interfaces

- 32-bit, 33/66 MHz PCI interface on P1 and P2 connectors
- PCI 2.2 master/target bus interface with I²O messaging unit and four linked list DMA
- 32-bit DMA exchanges for high-transfer performance

Telecom Clock Management

- The line interface can be configured in Line Termination (clock slave) or Network Termination (clock master) mode
- Three line synchronization sources:
 - Free running internal clock
 - Recovered clock (loopback timing)
 - Network reference (via optional P3 or P4)
- Recovered clock available (via optional P3 or P4) compliant
- Supports IEEE 802.3 Auto-Negotiation algorithm of full-duplex and half-duplex operation for 10 Mbps and 100 Mbps
- Provides internal and external loop back capabilities

Technical Specifications

Architecture

| | |
|---------------|-------------------------|
| Bus Type | PMC (PCI 2.2 Compliant) |
| Data Transfer | 32-bit, 33/66 MHz |
| Buffer RAM | 128 MB SDRAM |

Mechanical

| | |
|------------|--------------------------------|
| Length | 149.0 mm (5.9 in.) |
| Width | 74.0 mm (2.9 in.) |
| Indicators | Board Operational, Link Active |

Operating Environment

| | |
|-------------------|----------------------------------|
| Power Consumption | 50 mA @ 5 V DC, 1.7 A @ 3.3 V DC |
| Power Dissipation | 5.7 W |
| Temperature | 0 to 55 °C (32 to 131 °F) |
| Relative Humidity | 5% to 95% non-condensing |
| Altitude | 0 to 15,000 ft. |

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About Interphase Corporation

Interphase Corporation (NASDAQ: INPH) delivers solutions for network connectivity, interworking, and packet processing for key applications for the communications, Mil/Aero, and enterprise markets. Founded in 1974, Interphase provides expert customization services and contract manufacturing, in addition to its COTS portfolio, and plays a leadership role in next generation AdvancedTCA[®] (ATCA), AdvancedMC[™] (AMC), PCI-X, and PCIe standards and solutions. Interphase is headquartered in Plano, Texas, with sales offices across the globe.

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