



iSPAN® 4539F PMC T1/E1/J1 Communications Controller

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

FEATURES

Freescale 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 PMC T1/E1/J1 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.

10/27/05

interphase.com
1.800.FASTNET

551E PCI Fast Ethernet Adapter

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 *iWARE®* Software Development Suite offers developers a set of Interphase-developed firmware protocol stacks, accessible via APIs provided by Interphase.

4539F Architecture

The *iSPAN* 4539F PMC T1/E1/J1 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
- QuadFALC™ framer supports AMI, HDB3, or B8ZS line coding and various superframe formats
- Available with JTAG & TTY debug interfaces

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

Configurations

CONFIGURATION	PTMC	SHIELDED	DEBUG PORTS
4539F-008	PT0MC	NO	NO
4539F-009	PT0MC	NO	JTAG, TTY
4539F-010	PT0MC	YES	NO
4539F-011	PT0MC	YES	JTAG, TTY

Tech Specs

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) is a leading provider of robust building blocks, highly integrated subsystems and innovative gateway appliances for the converged communications network. Building on a 30-year history of providing advanced I/O solutions for telecom and enterprise applications, and addressing the need for high speed connectivity, Interphase has established a key leadership role in delivering next generation AdvancedTCA® and AdvancedMC™ solutions to the marketplace.