



iSPAN[®] 5639L Low-Profile PCI-Express T1/E1/J1 Communications Controller

Quad Port Multiprotocol Controller for Signaling Applications

FEATURES

Four interfaces, individually software configurable as T1, E1 or J1

Designed for SS7 signaling applications on 1U rack-mount PCI-Express servers

Reliable and field-proven Software Development Suite (iWARE SDS)

On-board support for multiple network protocols:

- SS7 (MTP1 & MTP2) LSL/HSL
- SAAL/GR-2878
- AAL5, AAL2
- Frame Relay
- HDLC & Media Interface
- Monitoring

Linux x86, Solaris x86 and Solaris SPARC support

Pre-integrated protocol layers with various third party SS7 stacks

High-impedance mode interfaces for monitoring applications

Support for the termination of up to 124 media streams for processing on the host

Freescale[™] MPC8560 (PowerQUICC III[™]) processor

APPLICATIONS

Call Servers, Softswitches

Short Message Switching Centers (SMSC)

Signaling Gateways

Location Based Services (LBS)

HLR/HSS

SCP, SRP

BSS Nodes

Media Servers

Designed for Signaling Applications

The iSPAN 5639L Low-Profile PCI-Express T1/E1/J1 Communications Controller, together with the iWARE Software Development Suite, delivers a comprehensive high-capacity connectivity solution for use in PCI-Express enabled rack-mount servers to deliver a wide range of Voice-Over-IP (VOIP), Wireless and IP Multi-Media Subsystem (IMS) infrastructure signaling nodes.

High Performance and Density

With 4 T1/E1/J1 interfaces per card, and several cards per server, the iSPAN 5639L provides a high density solution for SS7 applications, and enables optimization of slot usage within servers. With a high-performance PCI-Express interface to the host, the iSPAN 5639L enables rapid exchange of payload information and is hence ideal for a broad spectrum of server-based signaling applications.

Powerful Solution Architecture

The iSPAN 5639L incorporates the Freescale PowerQUICC III[™] communications controller to provide high-performance and high-capacity processing of signaling traffic. With its FPGA supporting the TDM switching, and an enhanced raw data transfer mode to/from the host, the iSPAN 5639L can also be used for media termination and switching in host-based media processing applications.

With its high-impedance interfaces and monitoring mode of operation, the iSPAN 5639L is also the ideal platform for SS7 monitoring services applications.





iSPAN 5639L Details

Network Interfaces

- 4 interfaces on 4 standard RJ45 connectors, individually software configurable in T1 (100Ω), E1 (120Ω) or J1 (110Ω) mode
- Further extensibility to 8 T1/E1 lines
- Line interfaces configurable in high-impedance mode for monitoring
- Line protection (designed for FCC part 68)
- Each line is individually configurable in LT (clock slave), NT (clock master) or Master/Master mode
- OctalFALC™ framer supporting short and long haul interfaces, AMI, HDB3, or B8ZS line coding and various superframe formats
- One Red/Green dual-color LED per port

Processor/Memory

- PowerQUICC III (MPC8560) 32-bit RISC processor allowing full support of various communication protocols, and reducing host CPU processing
- Clock mux and TimeSlot Interchanger (FPGA-based)
- Over-temperature protection (thermal sensor)
- 256 MB of DDR SDRAM
- 64 MB downloadable Boot Flash memory
- PCI-Express x1 host connectivity, x4 mechanical

Telecom Clocking

- Clock source selectable from any T1/E1/J1 line or from on-board free running oscillator
- Support of independent clock rhythm on each T1/E1/J1 line

Software

Interphase offers a robust suite of software development tools to help shorten the learning curve and design cycle for integration projects based on the iSPAN 5639L communications controller.

Board Development Kit (BDK)

The iSPAN 5639L BDK is specific to the iSPAN 5639L hardware and not tied to a particular operating system environment. The kit contains the following main components:

- Boot Firmware with Power On Self Test (POST), power on boot sequence, Built In Self Test (BIST) and configuration via a Command Line Interface (CLI)
- Setup and BIST utilities, documentation

iWARE® Software Development Suite (SDS)

The iWARE SDS is an integrated set of embedded firmware, APIs, host drivers and utilities that accelerates application development and eases integration of the iSPAN 5639L to deliver end applications.

The iWARE SDS provides common APIs and software environment across all Interphase T1/E1 products, thus protecting the application developer's investments.

Protocols provided in iWARE SDS:

- SS7 MTP1/2 (up to 124 LSLs, 4 HSL) – ITU-T Q.703, ANSI T1.111.3, TTC JT-Q.703, NTT Q.703, HSL ITU-T Q.703 Annex A and China YD/T 1125
- SSCF and SSCOP (SAAL) – ITU-T Q.2130 (UNI), Q.2140 (NNI), Q.2110, GE-2878-CORE
- ATM, AAL2 (CPS & SSSAR), and AAL5 (SAR), with IMA capability – ITU-T I.361, I.362, I.363.2, I.363.5, ATM Forum UNI
- Raw (n*64K) and Enhanced media transfers (for HMP applications)
- Monitoring mode with event filtering and time-stamping

Custom Developments

Custom software development, integration, and consulting services are also available via the Interphase Professional Services group.

Technical Specifications

Architecture

Processor	Freescale MPC8560-PQIII
RAM Memory	256 MB DDR SDRAM
ROM Memory	64 MB Boot Flash
Connectivity	PCI-Express x1 Link

Mechanical

Standard	PCI Express Electromechanical Rev1.1
Form Factor	Low Profile, Half Length PCIe x4
Length	167.65 mm
Height	68.9 mm

Operating Environment

Power Dissipation	17W maximum
Temperature Range	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

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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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