



## iSPAN® 5639 PCI-Express T1/E1/J1 Communications Controller

*Quad/Octal Port Connectivity for Signaling  
and Media Applications*

### FEATURES

Freescale™ MPC8560 (PowerQUICC III™) on-board processor @ 833 MHz

Four or eight individually software selectable T1/E1/J1 interfaces

Front Panel Gigabit Ethernet port for management and data traffic

High bandwidth PCI-Express host connectivity

On-board support for multiple network protocols and interworkings:

- Q.SAAL/GR-2878
- SS7 (MTP1 & MTP2)
- Frame Relay
- HDLC
- ATM

Narrowband SS7 to Broadband SS7 inter-working

Pre-integrated protocol stacks available using Interphase lower layers and various 3rd party upper layer stacks

Support for termination of up to 256 media streams for processing on the host or transport using I-TDM on the front panel Ethernet port

### APPLICATIONS

*Gateway GPRS Support Node (GGSN)*

*HLR/HSS*

*Serving GPRS Support Nodes (SGSN)*

*Application Servers*

*Media Gateways/Media Servers Signaling Gateways*

*Softswitches*

*Short Message Switching Centres (SMSC)*

### Designed for Signaling and Media Applications

The iSPAN 5639 PCI-Express T1/E1/J1 communications controller from Interphase delivers a comprehensive high capacity connectivity solution for use with PCI-Express enabled rack-mount server solutions to deliver a wide range of Voice Over IP, Wireless and IP Multi-Media Subsystem (IMS) infrastructure application elements.

### High Performance and Capacity

With up to 8 T1/E1/J1 interfaces the iSPAN 5639 provides a high capacity solution for signaling and media applications and enables optimization of slot usage within the server. With a high performance PCI-Express interface to the host the iSPAN 5639 enables rapid exchange of payload information and is hence ideal for media server applications

### Powerful Solution Architecture

The iSPAN 5639 incorporates the Freescale PowerQUICC III communications controller to deliver high performance and high capacity processing of signaling traffic. With the addition of an optional FPGA with support for TDM switching and I-TDM protocol conversion the 5639 can be used for full capacity media termination and media switching applications.





## 5639 Solution Components

### Processor/Memory

- PowerQUICC III (MPC8560) RISC processor allows full support of various communications protocols, reducing host CPU processing
- 833 MHz core, 333 MHz CPM, 1850 MIPS PowerQUICC III (MPC8560)
- 128 MB of DDR SDRAM on SODIMM (upgradeable up to 1 GB)
- 32 MB of SDRAM for CPM tables
- 16 MB downloadable 8-bit Flash Memory (upgradeable up to 64MB)
- Option for 128 MB of NAND Flash (upgradeable up to 1GB)
- PCI-Express single lane host connectivity

### Front Panel Line Interfaces

- Four or eight individually software selectable T1/E1/J1 lines
- Eight port solution provided using 4 connectors each supporting 2 lines
- Data Connection between framers and MPC8560 via eight independent TDM lines for maximum clock flexibility
- Two QuadFALC™ framers supporting long haul or short haul interfaces, AMI, HDB3, or B8ZS line coding and various superframe formats
- One Gigabit Ethernet port for management traffic or inter-working

### Telecom Clock Management

- 5639 can select a synchronization source from any T1/E1/J1 line
- Line interfaces can be configured in LT (clock slave) or NT (clock master) mode
- The four T1/E1/J1 lines can have independent clock rhythms
- The 5539 provides its own fixed frequency clock rhythm or the rhythm can come from one of the four lines receive signal
- Provides internal and external loop back capabilities

### 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 5639 communications controller.

### Board Development Kit

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

- Boot Firmware with power on self test, power on boot sequence, built in self test and configuration via a command line interface
- Documentation including hardware reference manual, board Installation and maintenance manual and Built in Self test Manual
- Setup and Built in Self test utilities

### iWARE® Software Development Suite (SDS)

The iWARE SDS suite is an integrated set of embedded firmware, host drivers and utilities to accelerate application development and ease integration of the iSPAN 5639 to deliver end applications. The protocol provided in the SDS are:

- SS7 MTP1 and 2
- ATM AAL0, AAL2, and AAL5, with IMA capability
- HDLC
- Frame Relay
- SSCF and SSCOP for Q.SAAL
- TDM for media transport over Ethernet

### Custom Development

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

### Technical Specifications

#### Architecture

Processor	MPC8560-PQIII 850MHz
RAM Memory	128 MB DDR SDRAM on SODIMM
ROM Memory	16 MB NOR Flash, 128MB NAND Flash
Connectivity	PCI-Express x1 Link

#### Mechanical

Form Factor	Standard Height Half Length
Length	166.1 mm (6.5 in)
Width	93.72 mm (3.7 in)

#### Operating Environment

Power Dissipation	14W maximum
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

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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.