**Product Highlights**

- Multi-purpose SONET/SDH VT/TU and SONET/SDH STS/STM cross-connect
- With a memory-switch architecture, implements a strictly non-blocking switch that supports a VT/TU level fabric of up to 45 Gbit/s
- Supports 18 high-speed Enhanced SONET Serial Interface (ESSI) CML links each independently configurable for STS-48/STM-16 at 2.488 Gbit/s or STS-12/STM-4 at 622.08 Mbit/s operation
- Supports system frame synchronization using an external frame pulse or ESSI smart frame synchronization using the frame boundary of the receive links
- Compensates for differences in frame boundary arrival times between ingress ports using FIFOs and device level software configurable delay registers
- Each SONET STS-1 or SDH VC3/VC4-TUG3 may be independently configured as a single unit and/or as a container of VT/TUs. The contents may be switched intact or switched as VT/TUs
- Allows each SONET VT Group to be independently configured to carry VT1.5, VT2, VT3, or VT6 tributaries
- Allows each SDH TUG2 to be independently configured to carry TU11, TU12, or TU2 tributaries
- Provides a device latency of 5.62 (+/-0.17) μs for 2.488 Gbit/s links and 6.21 (+/-0.67) μs for 622 Mbit/s links

**SONET/SDH Overhead Accessibility**

- Supports extraction of the transport overhead (TOH) from the ingress ports (both high and low-speed) as well as the insertion of transport overhead into the egress ports via low bandwidth two-bit 77.76 MHz interfaces

**APS Features**

- Supports a hardware-based Automatic Protection Switching mechanism (MAPS) for centralized link protection control when operating with other PMC-Sierra devices such as the PM5369 TUPP 9953
- Provides fully automatic protection switching for Class 1 protection services including 1+1 protection, UPSR, SNCP, and static mesh protection services
- Provides hardware assists for Class 2 protection services including 1:N protection, BLSR-2/4, MSSPRING-2/4, and dynamic mesh protection schemes

**I/O and General**

- All high-speed ingress and egress links are 1.2 V CML and are ELVDS-compatible with programmable pre-emphasis on transmit, equalization on receive, and support for both AC and DC coupled interfaces
- Each high-speed link supports SONET/SDH framed or unframed PRBS-23 or PRBS-7 generation and monitoring for off-line link verification

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**Block Diagram**

[Diagram showing the block diagram of the SONET/SDH Wideband Cross-Connect, including interfaces and connections for TOH Extraction and Insertion.]
• Configured, controlled, and monitored using a generic 32-bit microprocessor interface
• Provides a standard 5-signal IEEE 1149.1 JTAG test port for boundary scan test purposes

**Package**
• Implemented in 1.2 V core and 2.5 V I/O 0.13μm CMOS technology. Inputs are 3.3 V tolerant
• Packaged in a 672-ball FCBGA top-hat, 27 mm x 27 mm

**Applications**
• SONET/SDH Add-Drop Multiplexer (ADM)
• SONET/SDH Digital Cross-connect (DCC)
• Multi-service Provisioning Platform (MSPP)
• Multi-service ADM (MS-ADM)
• Multi-service Switch (MSS)
• Optical Access Mux
• Terminal Multiplexers

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**OC-192/STM-64 Optical Cross-Connect with 40G VT/TU Cross-Connect Server Card**

**OC-48/STM-16 VT/TU ADM/Cross-Connect**