

## PRODUCT INFORMATION

### FEATURES

- SDH/SONET line interface
  - Nibble wide clock and data LVDS 622.02 Mbit/s STM-16/STS-48
  - CML 2.5 Gbit/s STM-16/STS-48
- APS interface CML 3.11 Gbit/s STM-16/STS-48
- Inter-connect interfaces:
  - 12 CML interfaces with integrated transceivers at 2.488 Gbit/s (TFI-5) or 3.11 Gbit/s
- RS/section and MS/line overhead processing and generation
- High order path overhead and pointer processing providing either performance monitoring or termination and generation at VC-3 / VC-4 / VC-4-Xc / VC-4-16c / STS-1 / STS-3c / STS-12c / STS-48c SPE level
- Low order pointer processing and performance monitoring at TU-11 / TU-12 / VT1.5 / VT2 level
- Strictly non-blocking integrated cross connect with VC-3 / STS-1 and TU-11 / TU-12 / VT1.5 / VT2 granularity
- Linearly scalable in 2.5G increments to 35 Gbp/s in single stage using distributed or collocated devices, achieving the lowest feasible cross-connect delay for improved voice and data network performance
- Supports multiple line and equipment protection schemes [1+1, 1:N, and M:N]
- Integrated signal failure and signal degrade path monitoring on all high and low order paths
- Full hardware-based SNCP/UPSR support, with VC-3/STS-1 and VT1.5/VT/TU-11/TU-12 granularity
- Full bandwidth TOH port for custom RS/section or MS/line functions such as TOH transparency
- Integrated defect and anomaly detection and reporting
- Full or partial multicast capability
- PRBS generator analyzer for system connectivity and signal integrity checking
- Boundary scan and loopback
- Power Supply 1.2V, 2.5V, 3.3V
- Package Type 672-lead SFCBGA, 29 x 29 mm

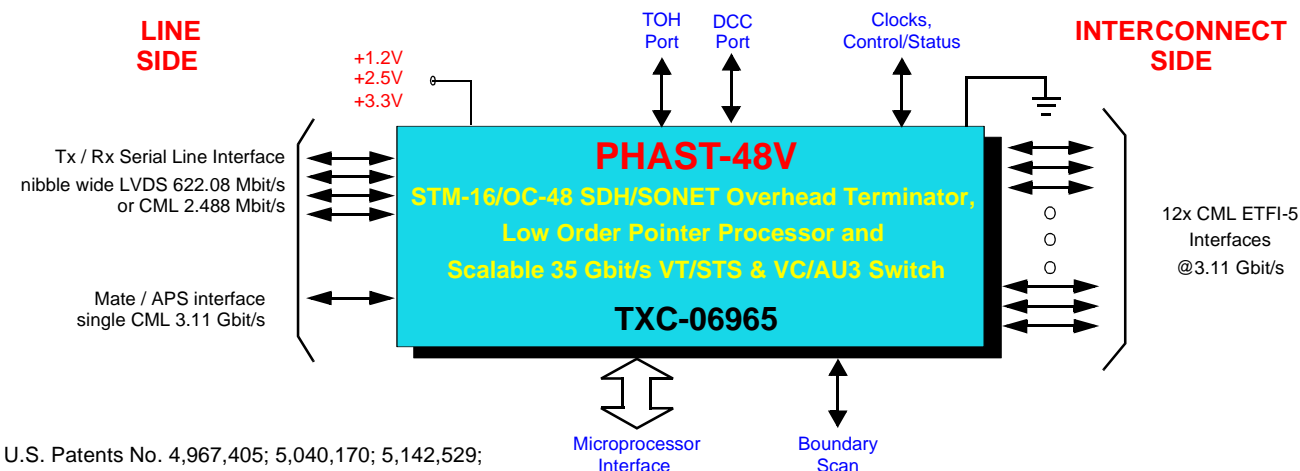
### DESCRIPTION

The PHAST<sup>®</sup>-48V is a highly integrated, versatile, linearly-scalable device that implements a strictly non-blocking full availability cross connect switch and framing/mapping/pointer processing from the TU-11/VT1.5 level through VC4-16c/STS-48c. The PHAST-48V can be provisioned to switch any SDH/SONET level simultaneously, allowing a mix of low and high level grooming within the same architecture. The PHAST-48V provides extensive performance monitoring, intermediate path monitoring, and reporting capabilities on all virtual tributaries and SPE signals. Reliable network operations are enhanced by bridge and roll switching.

Up to 14 devices can be interconnected to deliver 35 Gbps of switching capacity in a single stage. Through tributary-enhanced TFI-5 I/O interfaces used to interconnect multiple devices, any tributary on any input on any device can be switched to any tributary on any output on any device. The tributary-enhanced TFI-5 interfaces are also used to add/drop traffic to tributary cards with VT1.5/TU-12 granularity without the use of external switching components. The integrated backplane transceivers allow the devices to be distributed across multiple cards and run on independent clocks. SNCP/UPSR switch-over based on user-defined thresholds is fully implemented in silicon. Other network topologies include linear 1+1 and MSPRing/BLSR. A fully functional Device Driver is available through TranSwitch Applications Engineering.

### APPLICATIONS

- SDH/SONET add/drop and terminal multiplexers
- Metro and access SDH/SONET systems
- Multi-service SDH/SONET switches
- Terminal Multiplexers



U.S. Patents No. 4,967,405; 5,040,170; 5,142,529;  
5,265,096; 5,331,641; 5,724,362; 6,577,651B1

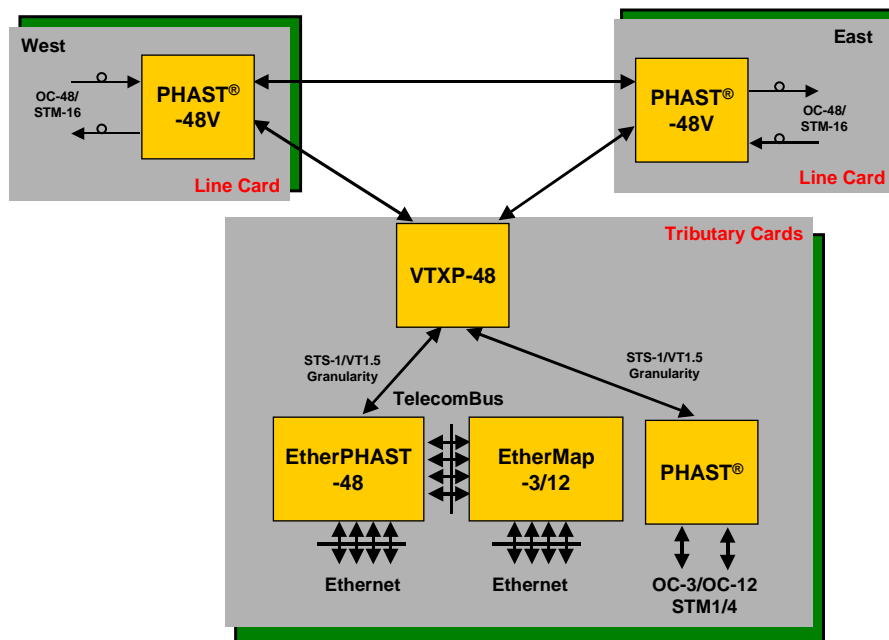
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## □ APPLICATION DIAGRAM



**Scalable Multi-Service Add/Drop Multiplexers with Virtual Tributary Granularity**

## □ RELATED PRODUCTS

- TXC-04212 OC-12 SDH/SONET Ethernet Mapper (EtherMap-12)
- TXC-04236 Ethernet into STS-3/STM-1 SONET/SDH Mapper (EtherMap-3 *Plus*)
- TXC-06712 OC-48 SONET/SDH Ethernet Mapper (EtherPHAST-48)
- TXC-06960 2.5 Gbps Virtual Tributary Processor with Integrated 40 Gbps VT/STS & VC/AU3 Switch (VTXP-48)

## □ FURTHER INFORMATION

Contact TranSwitch for technical and ordering information on these products.

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