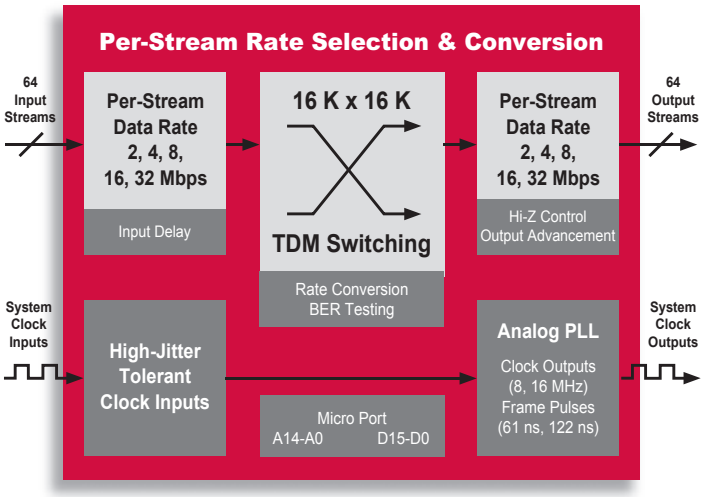
# ZL50050 SERIES
## TDM/TSI SWITCHES

VOICE/DATA

### ZL50060 Simplified Block Diagram




The ZL™ 50050/51/52/53/57/58/60/61/62/63/64 are Zarlink's series of feature-rich TDM switching ICs. The series includes 8 K, 12 K and 16 K channel devices capable of up to 32 Mbps data rates on all streams. With exceptional jitter tolerance, as well as the industry's widest range of per-stream and per-channel programmable features, Zarlink's new switching ICs are ideal for a variety of high-capacity carrier-class equipment.

### Typical Applications

- Media gateways
- Central office and Class 5 switches
- Remote access servers and concentrators
- Next-generation digital loop carriers
- Wireless base stations

### 8 K, 12 K and 16 K Feature-Rich Switches with Enhanced Flexibility

- Widest range of non-blocking switching ICs including 8 K, 12 K and 16 K channel devices offered with or without rate conversion
- Per-stream programmable rate selection at 2, 4, 8, 16 or 32 Mbps with rate conversion allows direct interface to peripheral components at different data rates
- Exceptional jitter tolerance of 17 ns at less than 32 Mbps, and 14 ns for 32 Mbps traffic allows direct use of clock signals from a backplane or a low cost digital PLL
- Flexible per-stream Input delay and Output advancement allows stream alignment adjustment to compensate for bus delays:
  - Input delay with channel and bit delay of up to 7 ¾ bits with ¼ bit resolution
  - Output advancement of 0 to 45 ns with resolution of 15 ns at less than 32 Mbps, and 0 to 22 ns with a resolution of 7.6 ns at 32 Mbps
- Two frame constant delay ensures frame integrity
- Backward compatibility with Zarlink's existing 8 K, 12 K and 16 K devices allows existing customers to easily upgrade their systems

### Standards Compliant

- H-MVIP, MVIP, ST-BUS, GCI
- IEEE 1149.1 (JTAG)

### Related Products

- Phase locked loops
- Voice echo cancellers
- Framers

### Customer Support

Evaluation boards and API drivers are available for the ZL50050 series of switching ICs, supported by Zarlink's network of in-house application engineers.

| | Size | Streams | Description | Package |
|---|---|---|---|---|
| ZL50050 | 8 K x 8 K | 32 In/32 Out | Fully featured switch with per-stream rate selection and conversion | PBGA (pin compatible with MT90871) |
| ZL50051/53 | 8 K x 8 K | 64 In/64 Out | Basic switch supporting 8 and 16 Mbps I/O rates | PBGA, LQFP |
| ZL50052 | 8 K x 8 K | 16 In/16 Out | Basic switch supporting 32 Mbps I/O rate | PBGA |
| ZL50057/58 | 12 K x 12 K | 48 In/48 Out | Fully featured switch with per-stream rate selection and conversion | PBGA (ZL50070 pin compatible with MT90870) |
| ZL50060/61 | 16 K x 16 K | 64 In/64 Out | Fully featured switch with per-stream rate selection and conversion | PBGA (ZL50061 pin compatible with MT90869) |
| ZL50062/64 | 16 K x 16 K | 64 In/64 Out | Basic switch supporting 2, 4, 8 and 16 Mbps I/O rates | PBGA, LQFP |
| ZL50063 | 16 K x 16 K | 32 In/32 Out | Basic switch supporting 32 Mbps I/O rate | PBGA |



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### Applications

The ZL50060 is ideal for scalable line card designs used in carrier-class equipment. As shown in the example below, the switching IC accepts 8 Mbps traffic from the T1/E1 mezzanine card providing 8 T1/E1 line service. The traffic is switched between the DSPs and the echo cancellation mezzanine cards (for voice processing) and the backplane.

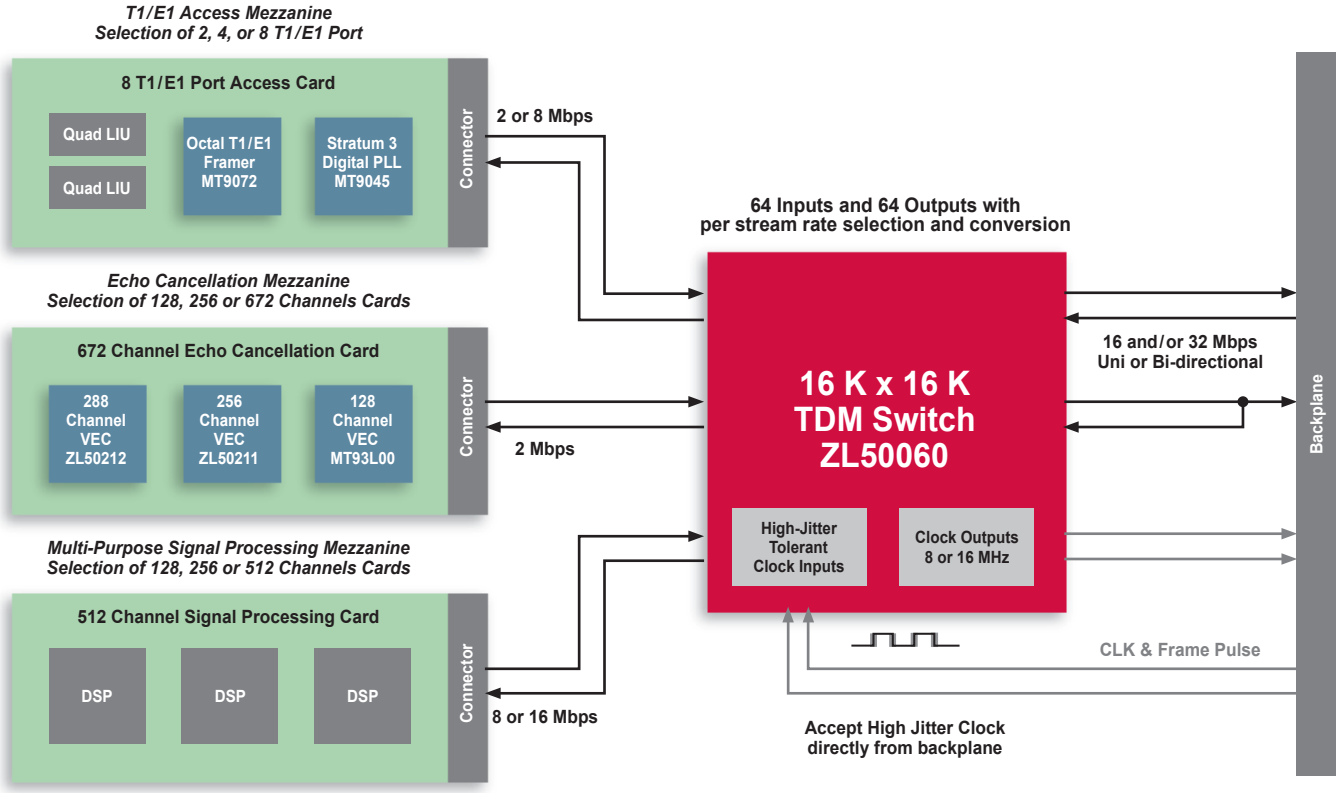
With per-stream rate selection and conversion, the ZL50060 is capable of simultaneously interfacing with the T1/E1 access card running at 8 Mbps, a DSP mezzanine card running at 16 Mbps and an echo cancellation mezzanine card running at 2 Mbps. When a mezzanine card is replaced with a different density card, the data stream rate can simply be re-programmed to the appropriate rate. The ability to support different rates up to 32 Mbps on each input and output stream eliminates the need for external circuitry normally required for rate conversion.

Zarlink's ZL50060 further enhances design flexibility, because it is able to interface with a wide range of timing sources. Featuring exceptional jitter tolerance, the device can be timed directly off the backplane's clock and frame pulse signals or from a low cost digital PLL when reference switching or holdover functionality is required. As a result, designers can use the most cost-effective timing architecture for their application.

This fully featured switching IC also ensures frame integrity, by providing a low latency of 2 frames constant delay between input and output streams. With per-stream Input delay and Output advancement, the device eliminates the need for glue logic that provides external buffer control when required and aligns data streams.

As illustrated, with the industry's widest range of programmable features, the ZL50060 improves flexibility, simplifies design and reduces cost of carrier access equipment.

### Typical Carrier Access Switching Line Card with Scalable Density Mezzanine Cards



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