

# VSC7226

VITESSE

## VSC7226 Quad 3.125Gb/s Backplane Transceiver



### FEATURES:

- ▶ Dual Speed Operation
  - Fibre Channel: 1.06/2.12/3.1875Gb/s
  - Gigabit Ethernet: 1.25Gb/s
  - 10G Ethernet: 3.125Gb/s
  - InfiniBand™: 2.5Gb/s
- ▶ Redundant XAUI Compliant Serial Links
- ▶ Half-Rate Operation for Compatibility with Legacy 1Gb/s Systems
- ▶ XGMII Parallel Data Inputs/Outputs
- ▶ Rate Matching Between Upstream/Downstream VSC7226s
- ▶ Selectable High-Speed Input Termination
- ▶ 2 Channel or 4-Channel Aggregation Capability
- ▶ Serial Output Swing Reduction Control
- ▶ Parallel Data Squelching Option
- ▶ Transmitter Pre-Distortion and Receiver Equalization
- ▶ Multiple Dual Data Rate (DDR) Clocking Options
- ▶ Extensive Per-Channel Configuration Control Through MDIO Interface
- ▶ Internal Serial and Parallel Loopback Modes
- ▶ JTAG and BIST Enabled
- ▶ Optional 8B/10B Encoder/Decoder

### SPECIFICATIONS:

- ▶ REFCLK: 24.5 MHz - 312.5 MHz
- ▶ Tx/Rx REFCLK Offset: 200 ppm
- ▶ Serial Input Differential Terminations Adjustable Between 100Ω and 150Ω
- ▶ Fast Locking CRU: <300 Data Transitions
- ▶ Up to 90 Bit Periods of Inter-channel Deskew
- ▶ Tolerates +/- 10 Bit Times of Clock Drift Between Resynchronizations
- ▶ 2.5V Supply
- ▶ 2.1W Power Dissipation (typ.)
- ▶ 21mm x 21mm, 256-pin Thermally Enhanced Ball Grid Array (TBGA)
- ▶ Maximum Case Temperature: 100°C

### APPLICATIONS:

- ▶ Backplane Interconnect for Data Communications Requiring 20 Gigabits Duplex of Throughput
- ▶ Serial Bus Extension
- ▶ 10 Gigabit Ethernet XAUI Transceiver
- ▶ InfiniBand
  - Host Channel Adapters
  - Target Channel Adapters
  - Switches
- ▶ Fibre Channel
  - 1G/2G Rate Negotiation
  - Rx/Tx Channel Independence

### SERIAL DATA TRANSFER RATES FOR EACH CHANNEL:

	Full Rate Mode	Half Rate Mode
▶ VSC7226-01	2.4Gb/s - 3.125Gb/s	1.2Gb/s - 1.56Gb/s
▶ VSC7226-02	1.9Gb/s - 2.4Gb/s	0.95Gb/s - 1.2Gb/s

# VSC7226

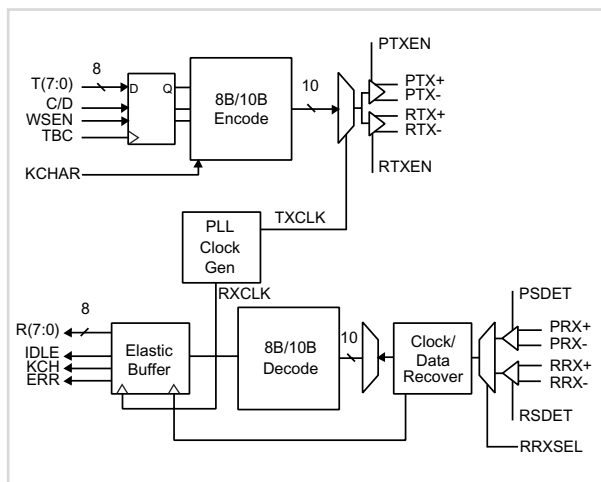
## VSC7226 Quad 3.125Gb/s Backplane Transceiver

### GENERAL DESCRIPTION:



The VSC7226-01 and VSC7226-02 are quad channel parallel-to-serial and serial-to-parallel transceiver chips designed for use in high bandwidth data transmission between busses, backplanes and other subsystems. Each channel's transmitter section contains parallel 8-bit or 10-bit SSTL\_2 input circuitry, an 8B/10B encoder, serializer and a pair of serial PECL output drivers and additional control inputs. Each channel's receiver section contains a pair of PECL inputs, clock and data recovery circuitry, a deserializer, an 8B/10B decoder, elastic buffers, 8-bit or 10-bit SSTL\_2 output drivers and additional control outputs. Each transmitter may be supplied 8-bit data which will be encoded into 10-bit characters for transmission, or may be supplied pre-encoded 10-bit data in which case the internal encoder is bypassed. The four channels may operate independently or in a synchronized mode transferring data that is word-aligned across 16 or 32 data inputs.

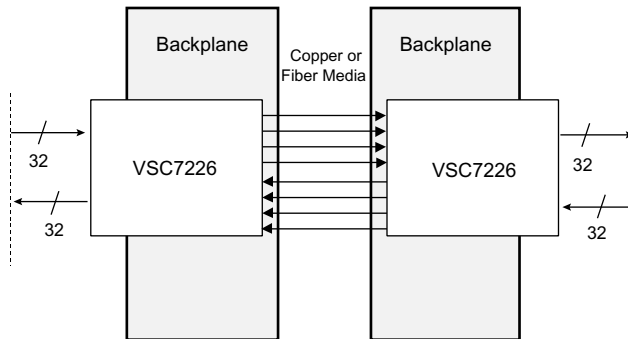
### VSC7226 BLOCK DIAGRAM:



Signal Channel Shown

### VSC7226 APPLICATIONS:

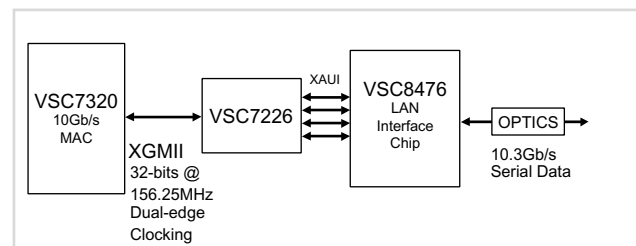
#### Backplane



25Gb/s encoded duplex throughput

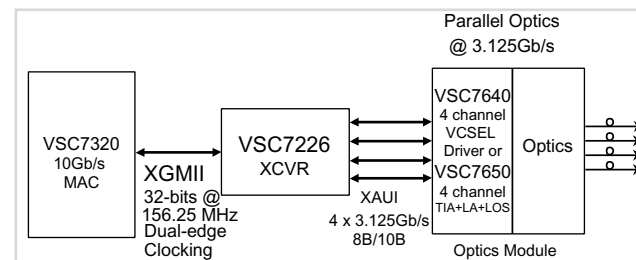
### VSC7226 APPLICATIONS:

#### 10GbE Parallel Optics Interface



### VSC7226 APPLICATIONS:

#### LAN/WAN Serial Interface



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