Product Summary

VSC7226-01
VSC7226-02

Double-Speed Multi-Gigabit Interconnect Chip

Features

- 4 Gigabit Ethernet-Compliant Transceivers
- Per Channel Control of Dual Speed, XAUI-Compliant Links
- VSC7226-01: 1.2 to 1.56Gb/s or 2.4 to 3.125Gb/s
- VSC7226-02: 0.95 to 1.2Gb/s or 1.9 to 2.4Gb/s
- Over 20Gb/s Duplex Raw Data Rate
- Redundant PECL Tx Outputs and Rx Inputs with Reduced Tx Output Swing Option
- 8B/10B Encoder with Bypassing Option on Each Channel
- "ASIC-Friendly™" Timing Options for Transmitter Parallel Input Data
- Parallel Busses are SSTL_2 at up to 312.5Mb/s
- On-Chip Fixed Serial Tx Output Terminations and Selectable Rx Input Terminations
- Fast-Locking CRU
- Elastic Buffers for Intra-Chip Cable Deskewing and Channel-to-Channel Alignment
- Rate Matching Via IDLE Insertion/Deletion
- MDIO Serial Configuration Port
- Serial Link Compatible with VSC7211/7212/7214/7216
- Recovered Clock or Reference Clock Based Receiver Output Timing Modes
- PECL Receiver Signal Detect, Cable Equalizer and Tx Pre-Emphasis
- Per-Channel Serial Tx-to-Rx and Parallel Rx-to-Tx Internal Loopback Modes
- Automatic Lock-to-Reference
- JTAG Test Port/Built-In Self Test
- 2.5V Supply, 3.0W
- 256-Pin, 21mm BGA Package

General Description

The VSC7226-01 and VSC7226-02 are quad, 8-bit, parallel-to-serial and serial-to-parallel transceiver chips used for high bandwidth interconnection between busses, backplanes, or other subsystems. Four Gigabit Ethernet compliant transceivers provide over 20Gb/s of duplex raw data transfer. Each channel of the VSC7226 can be operated at a maximum data transfer rate of 2500Mb/s (8 bits at 312.5MByte/s) or a minimum while in half-rate mode of 960Mb/s (8 bits at 120MByte/s). Each channel of the VSC7226-01 can be operated at a maximum data transfer rate of 1920Mb/s (8 bits at 240MByte/s) or a minimum while in half-rate mode of 760Mb/s (8 bits at 95MByte/s). The VSC7226-01 and VSC7226-02 contain four 8B/10B encoders, serializers, de-serializers, 8B/10B decoders and elastic buffers which provide the user with a simple interface for transferring data serially and recovering it on the receive side. The device can also be configured to operate as four non-encoded 10-bit transceivers.

VSC7226-01 vs VSC7226-02

The VSC7226-01 and VSC7226-02 are similar in all respects except for data rate ranges and corresponding clock requirements. Throughout this document, "VSC7226" will be used to refer to both devices when describing behavior, specifications and requirements common to both. The behavior, specifications and requirements pertaining to the VSC7226-01 and VSC7226-02 will be described separately where appropriate.

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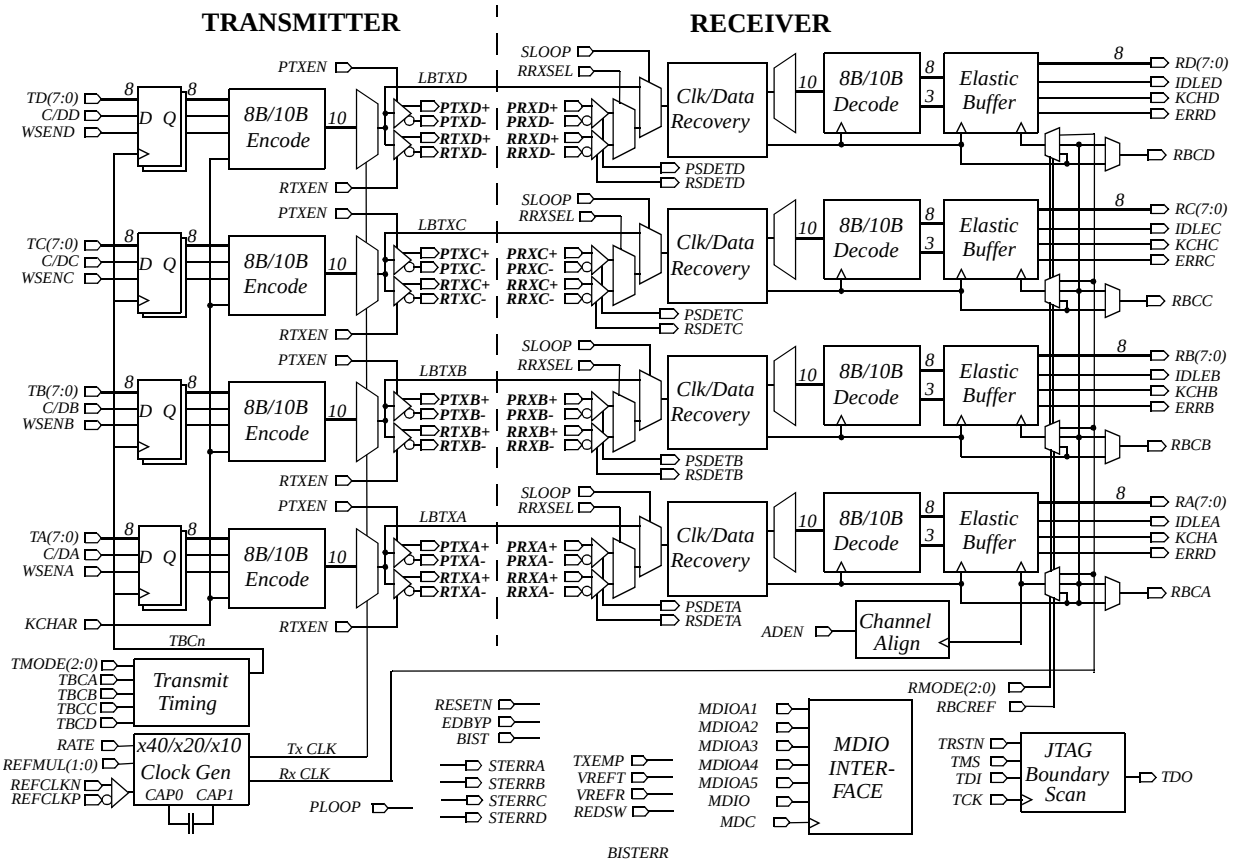
VSC7226 Block Diagram



Preliminary Specifications

Description	Min	Typ	Max	Units	Conditions
TX Output Differential Peak-toPeak Voltage Swing	900		1800	mVp-p	50Ω to V_{DD} –2.0V (TX+ – TX-)
TX Output Differential Peak-toPeak Voltage Swing	450		900	mVp-p	50Ω to V_{DD} –2.0V (TX+ – TX-) 1/2 power enabled, pre-emphasis off
Power Dissipation		3000	TBD	mV	Output open, at V_{DD} max
Supply Current		2300	TBD	mA	Outputs open, at V_{DD} max
Still Air Ambient Operating Temp			52	°C	All channels operating
Data Acquisition Lock Time	TBD		290	Data Transition	Tested on a sample basis