

VSC1237, VSC1238

VITESSE

9.9 to 12.5 Gbps 16:1 Multiplexer with Clock Multiplier Unit and Demultiplexer with Clock Recovery Chip Set



APPLICATIONS:

- ▶ SONET OC-192, SDH STM-64 Systems
- ▶ 10GbE, G.975, G.709 and Proprietary FEC Systems
- ▶ Long Haul / Ultra Long Haul Transmission Systems
- ▶ Line Cards
- ▶ Transponders

FEATURES:

VSC1237

- ▶ 16:1 Data Multiplexer
- ▶ PLL Based Clock Multiplier
- ▶ Integrated Jitter Filter PLL
- ▶ Full-rate/Half-rate Clock Outputs
- ▶ Flexible PLL Based Parallel Data Clocking
- ▶ Selectable Bit-order and Phase Reversal
- ▶ Selectable Low Phase Noise VCOs
- ▶ Surpasses SONET/SDH Jitter Generation/Transfer Requirements

VSC1238

- ▶ 1:16 Data Demultiplexer
- ▶ PLL Based Clock Recovery
- ▶ Highly Sensitive Front-end: 8mVpp Single-ended
- ▶ Powerful Adaptive Threshold Control Features
- ▶ Surpasses SONET/SDH Jitter Tolerance Requirements
- ▶ Reference Multiplier PLL
- ▶ True Loss of Signal Function
- ▶ Direct Recovery of NRZ and RZ Signals

Common Features

- ▶ Low Power SiGe Technology
- ▶ No External Heatsink Required
- ▶ Single 3.3V Power Supply

BENEFITS:

VSC1237

- ▶ Full or Half-rate Clock output for use with Clocked Laser Drivers or in RZ Signal Generation
- ▶ Built in Jitter Filter PLL
- ▶ Extremely Low Clock-data Skew
- ▶ Clock Outputs can be Disabled to Save Power
- ▶ Flexible Parallel Data Clocking Using Internal PLL
- ▶ No External Heatsink Required

VSC1238

- ▶ High Sensitivity Eliminates Need for AGC/Post-amplifier
- ▶ Adaptive Threshold Control Features to Optimize BER
- ▶ Proven Performance with Degraded/Difficult Signals Such as:
 - Poor OSNR
 - Chromatic Dispersion
 - Differential Group Delay
 - RZ Signaling

SPECIFICATIONS:

VSC1237

- ▶ 1.2W Typical Power Dissipation
- ▶ 560mVpp Typical Data Output Amplitude
- ▶ 25ps Typical Rise/Fall Time
- ▶ 600mVpp Typical Clock Amplitude
- ▶ <-10dB Output Return Loss
- ▶ <0.1Upp Jitter Generation
- ▶ 5ps Typical Clock-data Skew Variation

VSC1238

- ▶ 1.7W Typical Power Dissipation
- ▶ 8mVpp Single-ended Sensitivity
- ▶ 3mV Maximum Uncorrected Input Referred Offset
- ▶ Multi-frequency Capable with Selectable CDR VCOs
- ▶ Auto-sensing /16, /64 or /512 Reference Frequency

Common Specifications

- ▶ LVDS Compatible Low-speed I/O
- ▶ -5 to +90°C Case Temperature Range

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GENERAL DESCRIPTION:

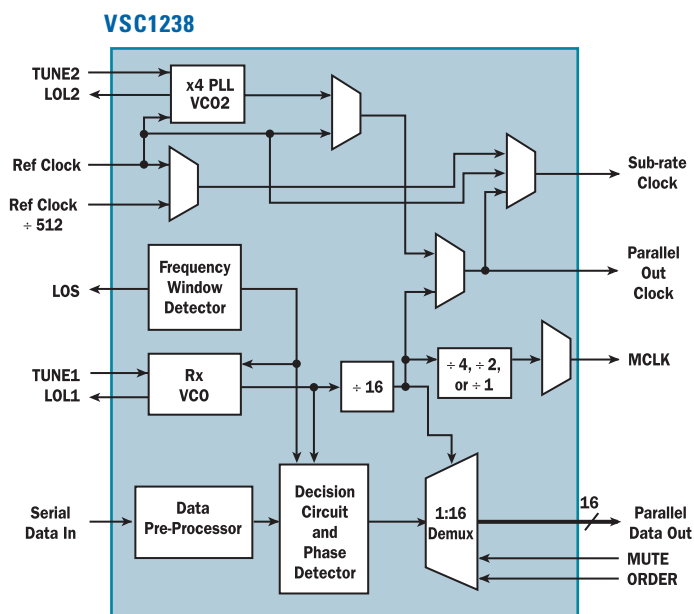
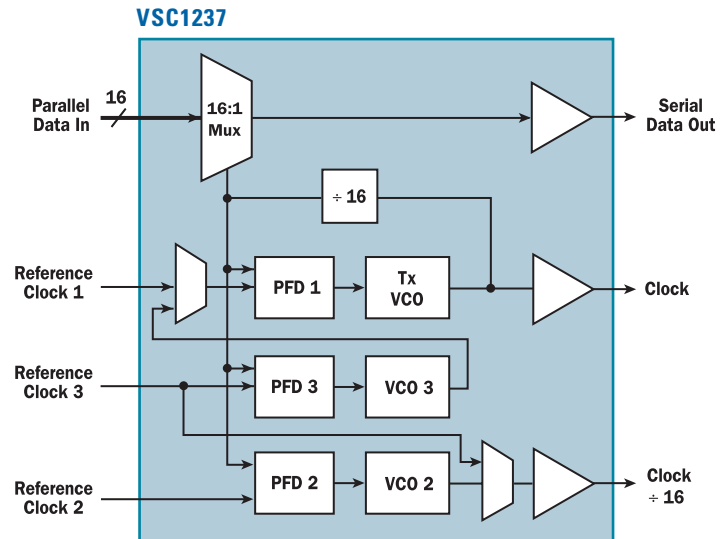


The VSC1237 and VSC1238 is a complete high-performance multiplexer/demultiplexer chip set designed for 9.9-12.5 Gbps applications, including SONET OC-192, SDH STM-64, 10GbE, G.975, G.709 and offering enhanced capabilities specifically designed to address the needs of Ultra Long Haul (ULH) and Long Haul (LH) fiber optic transmission systems.

The **VSC1237** is a 16:1 Multiplexer with an integrated Clock Multiplier Unit. This device easily surpasses the jitter requirements for SONET/SDH transmission systems. Integrated phase locked loop circuits, including VCOs, are used for high speed clock generation, jitter filtering and low-speed data transfer. This device offers enhanced features, such as a integrated jitter filter PLL and a selectable full/half-rate clock output, which is specifically designed to be used in long haul and ultra long haul systems that utilize clocked laser drivers or RZ signaling. The clock output features extremely low clock-data skew variation, and can be disabled to save power.

The **VSC1238** is a 1:16 Demultiplexer (DMUX) with Clock and Data Recovery (CDR) unit. This device is capable of direct recovery of signals which are subject to various impairments/formats inherent in ULH/LH systems, including poor Optical Signal to Noise Ratio (OSNR) arising from optical amplification, distortion from Chromatic Dispersion, Polarization Mode Dispersion / Differential Group Delay (PMD/DGD), and RZ signaling. The highly sensitive front-end, precise phase detector / decision circuit, and adaptive threshold features eliminate the need for AGC amplifiers, post-amplifiers, filters, etc. which are traditionally needed to recover these signals.

BLOCK DIAGRAMS:



For more information on Vitesse Products visit the Vitesse web site at www.vitesse.com or contact Vitesse Sales at (800) VITESSE or sales@vitesse.com

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