

9.953 Gbps to 11.3 Gbps Dual XFP Signal Conditioner

GENERAL DESCRIPTION:



The VSC8239 device is a dual 10 Gbps Clock-and-Data-Recovery unit (CDR) designed for use as a signal conditioner IC for XFP modules. This 5 mm x 5 mm single chip solution has advantages of cost, size, and feature set over existing two chip solutions. A two-wire serial interface provides versatile control and alarm access.

Each CDR is dedicated to supporting the corresponding transmit and receive path as specified in the XFP MSA standard. The Receive (Rx) data path consists of a limiting amplifier with offset correction and programmable Equalization (EQ) function, followed by a Clock Recovery Unit (CRU), Phase-Locked Loop (PLL), and a XFI compliant data output driver. Rx Loss of Signal (LOS) and Rx Loss of Lock (LOL) alarm signals are also supported to provide full compliance to the XFP standard.

The Transmit (Tx) data path consists of a Variable Gain Amplifier (VGA) with a programmable EQ function. The VGA and EQ are digitally controlled through the Two-wire Serial Interface/SPI interface and allow for application specific jitter generation optimization. A PLL-based CRU drives the 50 ohms Tx data driver with levels compatible with available laser driver IC's. The Tx LOL alarm signal is supported.

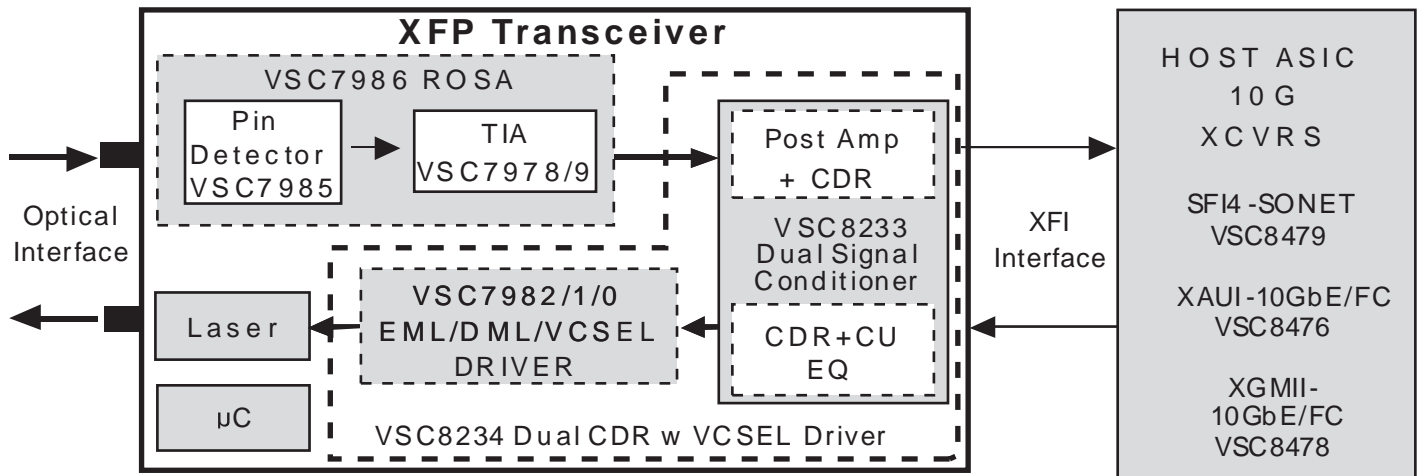
Leveraging off the integration of transmit and receive path, the VSC8239 device provides diagnostics and line loopback modes that enable advanced XFP module level features such as a Built In Self Test (BIST) feature with programmable error detection capability. This facilitates high volume module manufacturing and system level setup.

It has a continuously tunable operating range from 9.9 Gbps to 11.3 Gbps supporting OC-192 (9.953 Gbps), 10 GbE (10.3 Gbps), 10 Gbps Fibre Channel (10.5 Gbps), OC192FEC (10.709 Gbps), 10 GbE + FEC (11.05 Gbps), and 10 Gbps Fibre Channel + FEC (11.3 Gbps) data rates.

APPLICATIONS:

Fully compatible with the complete family of Vitesse XFP module application products including 10 Gbps SERDES, Host ASIC family: VSC8476, VSC8478, VSC8479, and 10 Gbps laser drivers and TIAs: VSC7980, VSC7981, VSC7982, VSC7985, VSC7978, and VSC7979.

APPLICATION DIAGRAM:



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**741 Calle Plano
Camarillo, CA 93012, USA
Tel: +1 805.388.3700
Fax: +1 805.987.5896
www.vitesse.com
sales@vitesse.com**