Variable Bit-rate Bi-directional FEC and Performance Monitor

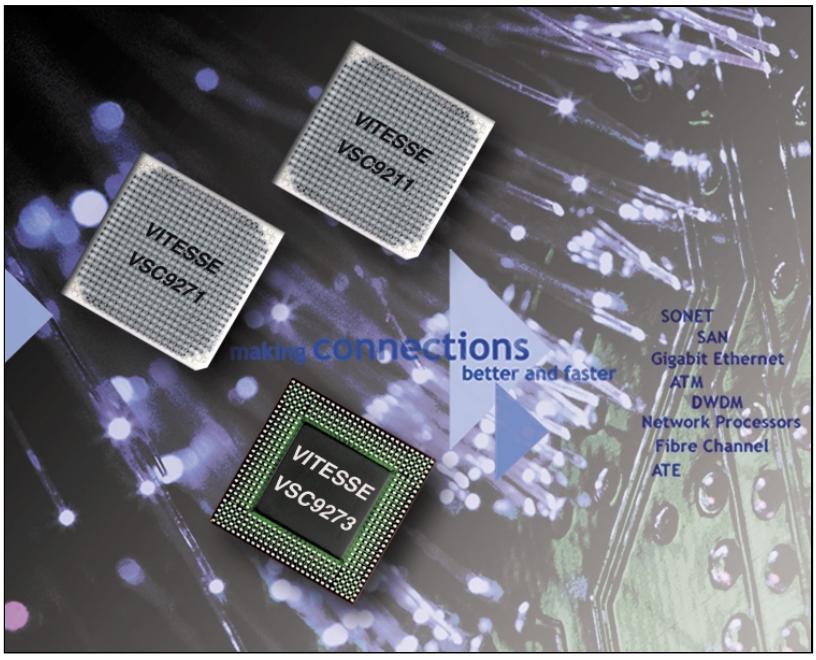
VSC9271

Product Brief

Optical Transport Networking

Features:

- G.975 Reed-Solomon Encoding and Decoding RS(255,239) up to 10Gb/s Rates
- Converts an input BER of ~8x10-5 to an output BER of ~1x10-15 with FEC
- Digital Wrapper Support (Draft G.709 / G.872)
- OCh Embedding of any client Signal Protocol and Rate up to 10Gb/s
- Bi-directional SONET/SDH Performance Monitoring Operation at OC-48 and OC-192 Rates
- Adaptation and Regeneration Modes
- Full Programmability of G.709/G.975 Overhead
- SONET/SDH Line Termination Capabilities
- B1/B2 Error Detection, Re-calculation, and Insertion
- Integrated Bit Error Rate Monitors
- LOF/LOS/SD/SF/REI/RDI Alarm Generation
- SONET/SDH Section & Line AIS Insertion



General Description

The VSC9271 is a Variable Bit Rate Bi-directional Forward Error Correction (with Digital Wrapper) and Performance Monitoring device. The VSC9271 employs a bi-directional architecture that can be used in both transceiver (adaptation) and regenerator modes. The device can be used for applications with and without FEC. SONET/SDH OC-192 and OC-48 performance monitoring is provided.

The VSC9271 conforms to the ITU-T G.975 standard for transpartent Foward Error Correction (FEC). FEC is supported by Optical Channel (OCh) which has its own set of performance and maintenance features (ITU-T G.709). These features are independent of the client signal carried, simplifying operation of an optical network supporting various client signals. The VSC9271 offers bi-directional adapatation capabilities between any client signal and OCh, and also provides OCh regenerator functionality.

A Multi-Rate Bi-directional Performance Monitor offers extensive performance monitoring and regeneration capabilities for SONET/SDH signals. The device monitors and modifies the transport (section and line) overhead of a SONET/SDH signal, which allows for support of Operations, Administration, Management, and Provisioning (OAM&P) functions in SONET/SDH terminal and optical networking applications. In addition, the VSC9271 supports a bypass mode to pass through any data format.

VITESSE SEMICONDUCTOR CORPORATION

Variable Bit-rate Bi-directional FEC and Performance Monitor

VSC9271

Product Brief

Optical Transport Networking

Markets:

- Metro Area Networking Products
- Long Haul Transmission Products

Typical Applications:

- Line Cards
- Transponders
- Digital Cross Connects
- OADM
- Regenerators

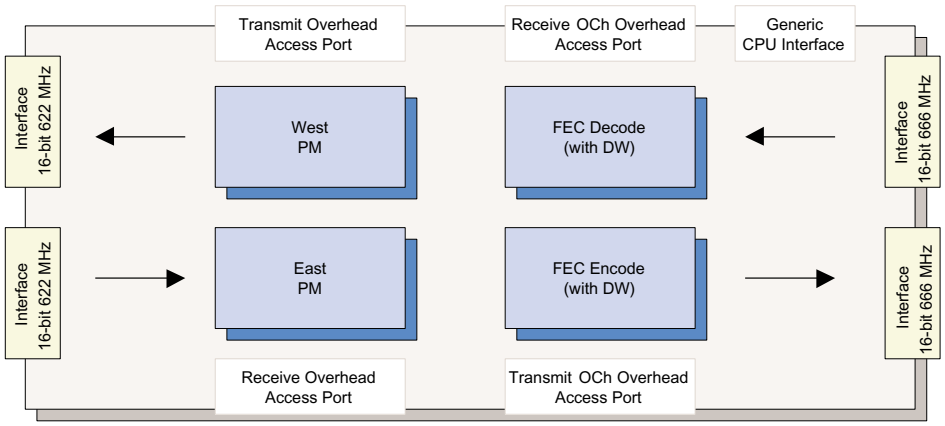
Benefits:

- Forward Error Correction Techniques Conform to Industry Standards
- Transparent Error Detection and Correction for any Client Signal Regardless of Protocol or Rate up to 10Gb/s
- Bi-directional Architecture Enables Independent FEC Encode and Decode Operation
- Extensive Performance Monitoring and Regeneration Capabilities for SONET/SDH Signals
- Regenerator Mode Allows the Device to be used as an FEC Link Regenerator (Decode, then Encode) for Repeater Applications

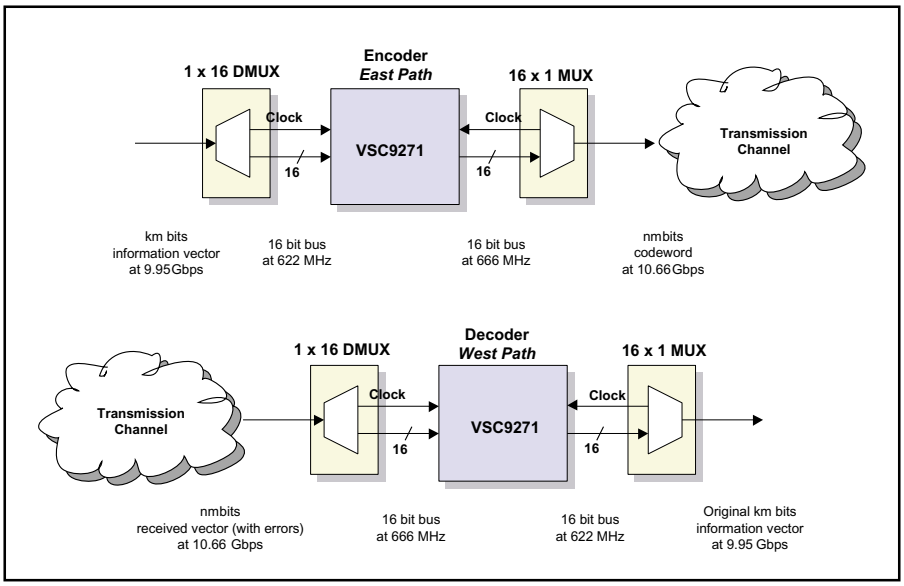
Specifications:

- +1.8V / +2.5 V Power Supply
- 5.3W Power Dissipation
- 10Gb/s Max Data Rate (Client Side)

VSC9271 Chip Block Diagram



Bi-directional Functionality



The bi-directional architecture of the VSC9271 allows for complete East/West monitoring on ring traffic, or dual channel operation. The count of corrected ones and zeros provided by the VSC9271's FEC can be used as a protocol independent channel monitor, allowing for completely transparent monitoring of any incoming signal independent of the rate or protocol.

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