

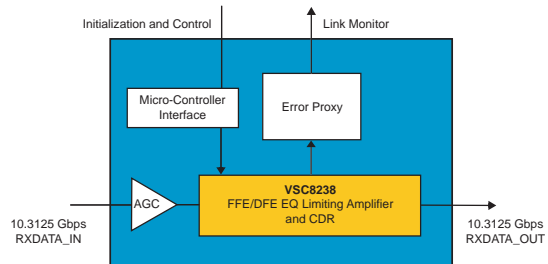
TRANSPORT PHYSICAL LAYER

VSC8238

VITESSE®

10.3125 Gbps Advanced Electronic Equalization with Limiting Amplifier, and Clock and Data Recovery

BLOCK DIAGRAM:



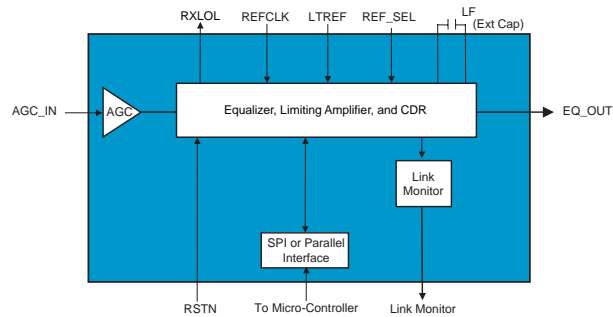
FEATURES:

- ▶ Multitap FFE and DFE filter
- ▶ Integrated CDR and XFI output driver
- ▶ Integrated AGC and offset controls

BENEFITS:

- ▶ Provides superior modal dispersion compensation and exceeds 10GBASE-LRM specifications
- ▶ Provides XFP-compatible Rx CDR for XFP LRM module applications
- ▶ Provides robust handling of wide TIA input signal range and duty cycle conditions

FUNCTIONAL BLOCK DIAGRAM:



APPLICATIONS:

- ▶ XENPAK/X2 10GBASE-LRM module applications
- ▶ XFP 10GBASE-LRM module applications

VPPD-01657
Revision 1.0

VSC8238

10.3125 Gbps Advanced Electronic Equalization with Limiting Amplifier, and Clock and Data Recovery

GENERAL DESCRIPTION:

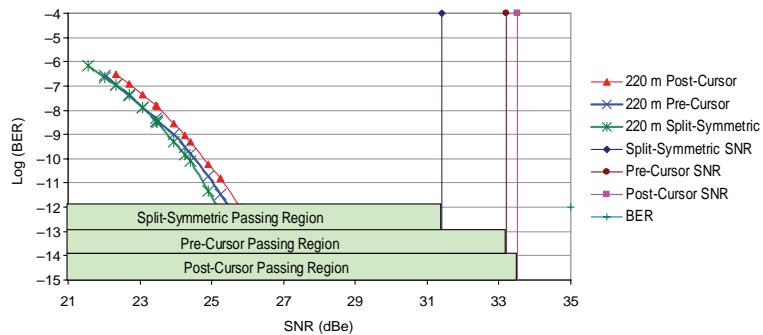


The VSC8238 device is a compact, fully integrated electronic dispersion compensator (EDC) and provides clock and data recovery (CDR) unit incorporating a sophisticated feed-forward equalization (FFE) and decision feedback equalization (DFE) architecture. The device is designed to operate at 10.3125 Gbps for use in 10GBASE-LRM Ethernet applications. The receive chain within the VSC8238 device incorporates a low-noise automatic gain-controlled amplifier, a high-speed adaptive

equalizer with linear and nonlinear compensation, a jitter-tolerant clock and data recovery, and a precision-limiting amplifier. The 10.3125 Gbps output signal is XFI-compliant. The equalizer implementation provides a high level of signal impairment compensation to ensure a robust LRM link. It also provides the adequate performance margin needed for demanding multimode fiber applications. The VSC8238 device is the only EDC on the market meeting the LX-4 compliant performance to enable 10 GBE transmission up to 300 meters on 99% of the installed FDDI fiber base.

VSC8238 STRESSOR ELECTRICAL PERFORMANCE:

IEEE802.3aq/D3.1 220 m post-cursor, pre-cursor, and split-symmetric stressor performance as a function of log BER versus SNR (nominal conditions, input: -400 mV differential)



SPECIFICATIONS:

- ▶ Exceeds IEEE 802.3aq Draft 4.0 specifications for 10GBASE-LRM performance
- ▶ Passes the following LRM stressor tests:
 - Split-symmetric 4.75 dB PIE-D stressor (300 m)
 - Post-cursor 4.56 dB PIE-D stressor (300 m)
 - Pre-cursor 4.48 dB PIE-D stressor (300 m)

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