

# VSC7227 and VSC7227-01

## 12-Channel Multirate Adaptive Channel Extender

Microsemi's EQNOX™ family of advanced unidirectional adaptive channel extender equalizes deteriorated input signals while dissipating the lowest possible power.

The VSC7227 devices are 12-channel unidirectional adaptive channel extenders with CDR. They incorporate analog and digital equalization, clock and data recovery, and output de-emphasis. VSC7227 supports data rates up to 14.5 Gbps. VSC7227-01 supports data rates up to 11.5 Gbps. Both devices are ideal for applications such as Ethernet, Fibre Channel, Infiniband, and Common Public Radio Interface (CPRI), as well as other protocols.

The VSC7227 devices are simple-to-use copper media receivers and drivers that provide electrical compensation to cable, copper, and backplane environments to increase system margin and media driving distances. They equalize greater than 40 inches of FR-4 at 10 Gbps and greater than 10 m of 24AWG of copper direct-attached cable at 10 Gbps.

The VSC7227 devices can be used either on their own or with an external microcontroller to control, monitor, and enhance system performance.

The VSC7227 devices feature Microsemi's proprietary FlexEQ™ technology to equalize deteriorated input signals while dissipating the lowest possible power. A low-cost 25 MHz crystal, along with on-chip frequency synthesizers, allows for CDR operation at any data rate. Its three-tap FIR output driver architecture enables up to 18 dB of de-emphasis.

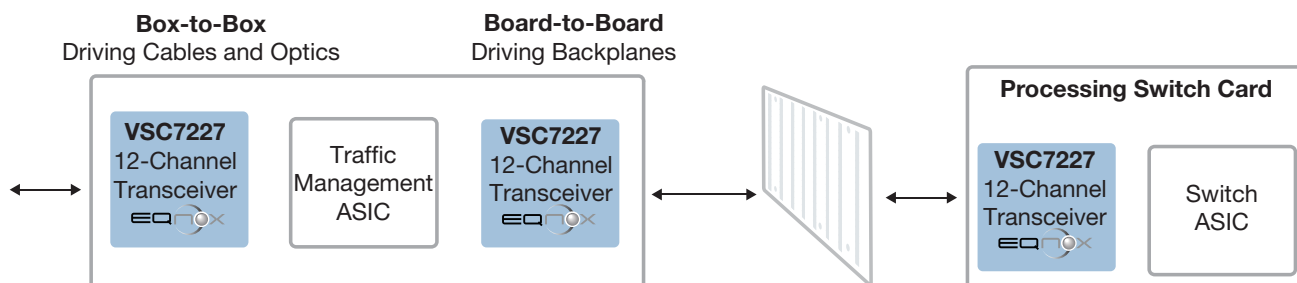
The VSC7227 devices include Microsemi's patented VScope input signal monitoring integrated circuit signal monitoring and waveform viewing technology.

### Highlights

- World-class adaptive equalization
- Up to 14.5 Gbps operation for Fibre Channel (2G/4G/8G/16G), Infiniband (DDR, QDR, FDR), CPRI (1G to 10G)
- 18 dB programmable output de-emphasis
- Built-in VScope™ and BIST
- On-chip frequency synthesizers
- Low power (150 mW per channel)
- 2 × 2 crosspoint matrix on every adjacent channel

### Applications

- Wideband signal switching, clean-up, and retimer
- Line, backplane, and copper cable driver, receiver, and retimer
- PCB signal enhancement
- Optical module retimer
- Optical and copper module host



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## 12-Channel Multirate Adaptive Channel Extender

### Key Benefits

- Simple-to-use devices
- Low module and system power consumption
- Fully adaptive analog and digital equalization
- Wide range of data rate operation supporting multiple protocols, including Ethernet, Fibre Channel, Infiniband, and CPRI
- 25 MHz crystal and built-in frequency synthesizers
- LOS detection
- Built-in VScope input signal monitoring integrated circuit eye diagram monitoring

### Architecture

- Two-wire serial port for optional microcontroller and VScope input signal monitoring integrated circuit
- Pin-strap option for operation without microcontroller
- World-class adaptive equalization including greater than 30 dB input equalization and four-tap decision feedback equalizer (DFE)
- Built-in self test (BIST)

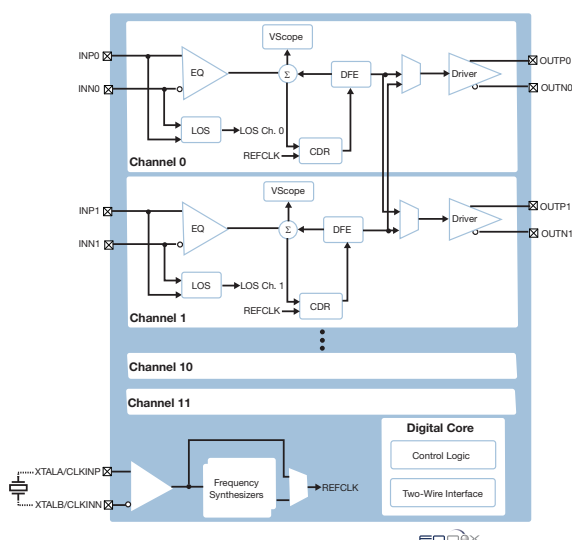
### Key Specifications

- 1.2 V single power supply
- 150 mW per channel power consumption
- Two-wire serial interface
- DC coupling to high-speed inputs
- 13 mm × 13 mm BGA package

### Related Products

Visit [www.microsemi.com](http://www.microsemi.com) for information about these related products:

- VSC7111 quad signal conditioner with up to 11.5 Gbps asynchronous operation
- VSC7224 four-channel multirate adaptive channel extender
- VSC8494 quad channel 10 Gbps OTN PHY with VeriTime™



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