

# VSC7223

## Multirate 16 Gbps Quad Adaptive Channel Extender with All-Rate CRU

Microsemi's advanced unidirectional lane adaptive channel extender equalizes deteriorated input signals while dissipating the lowest possible power.

The VSC7223 device is a quad unidirectional lane adaptive channel extender with a CRU. It incorporates input equalization, clock and data recovery, and output de-emphasis. It operates at data rates from 155 Mbps to 16 Gbps.

The VSC7223 device is a simple-to-use copper media receiver and driver that provides electrical compensation to cable, copper, and backplane environments to increase system margin and media driving distances. It equalizes greater than 65 inches of FR-4 at 10 Gbps and greater than 15 meters of 24AWG of SFP+ copper direct-attached cable at 10 Gbps.

The VSC7223 device can be used either on its own or with an external microcontroller to control, monitor, and enhance system performance.

The VSC7223 device uses advanced technology to equalize deteriorated input signals while dissipating the lowest possible power. A low-cost 25 MHz crystal, along with an on-chip frequency synthesizer, allows for CRU operation at any data rate. Its three-tap FIR output driver architecture enables up to 20 dB of de-emphasis at 10 Gbps.

The VSC7223 device includes Microsemi's patented VScope™ input signal monitoring integrated circuit waveform viewing technology.

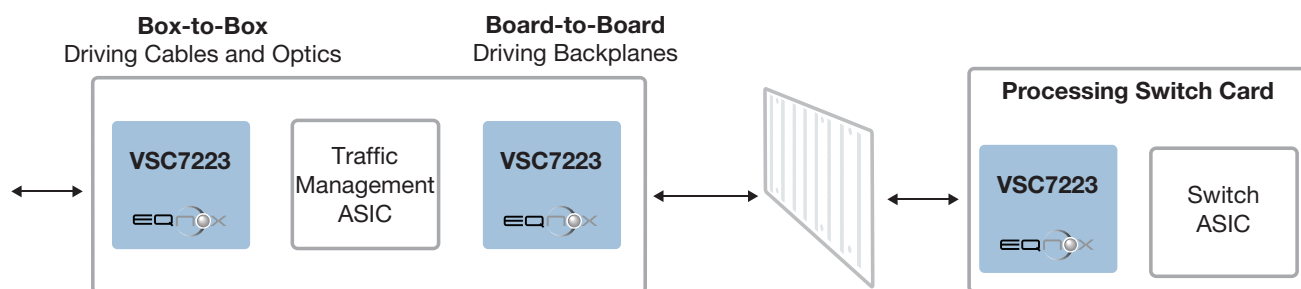
The VSC7223 device is available in a compact 5 mm x 9 mm 48-pin QFN package. The device operates on a single supply of 1.2 volts.

### Highlights

- World-class adaptive equalization
- Wide retiming range from 155 Mbps to 16 Gbps
- 20 dB input equalization
- Retimer and re-driver modes
- Built-in VScope
- On-chip frequency synthesizers

### Applications

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



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### Key Benefits

- Simple-to-use device
- Low module and system power consumption
- Auto-adapts equalizer and DFE tap settings
- Wide range of data rate operation with 25 MHz crystal and built-in frequency synthesizer
- World-class adaptive equalization
- LOS detection
- Built-in VScope input signal monitoring integrated circuit eye diagram monitoring

### Architecture

- Two-wire serial port for optional microcontroller
- Pin-strap option for operation without microcontroller
- Four-tap decision feedback equalizer (DFE)
- Built-in diagnostics

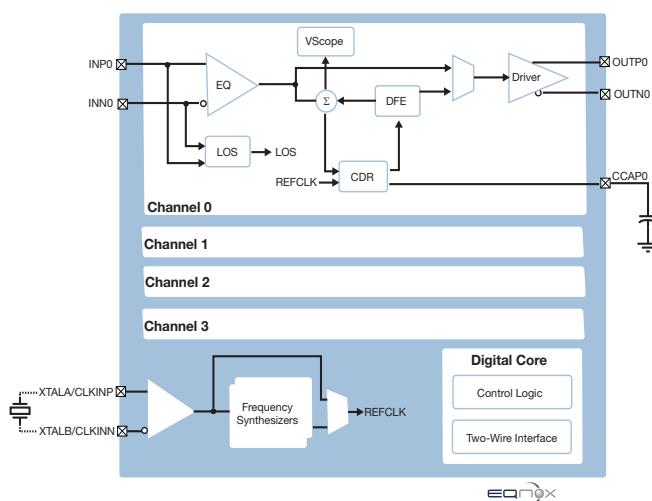
### Key Specifications

- 1.2 V single power supply
- 180 mW per channel power consumption (retimer)
- 110 mW per channel power consumption (re-driver)
- 18 dB programmable output de-emphasis
- Two-wire serial interface
- Compact 5 mm x 9 mm QFN package

### Related Products

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

- VSC3308
- VSC3316
- VSC7227



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