

# Duplex Quad (Octal) Multi-Rate CDR with Amplif-Eye™ (1.0 Gbps – 3.2 Gbps)

## M21050

The M21050 is a high-performance duplex quad (octal) multi-rate clock and data recovery (CDR) array, optimized for multi-lane telecom and datacom applications. Each CDR operates independently at bit rates between 1.0 Gbps to 3.2 Gbps, allowing maximum flexibility in system design.

Signal conditioning features include adaptive input equalization and output pre-emphasis, allowing robust reception and transmission of signals to other devices up to 60" away.

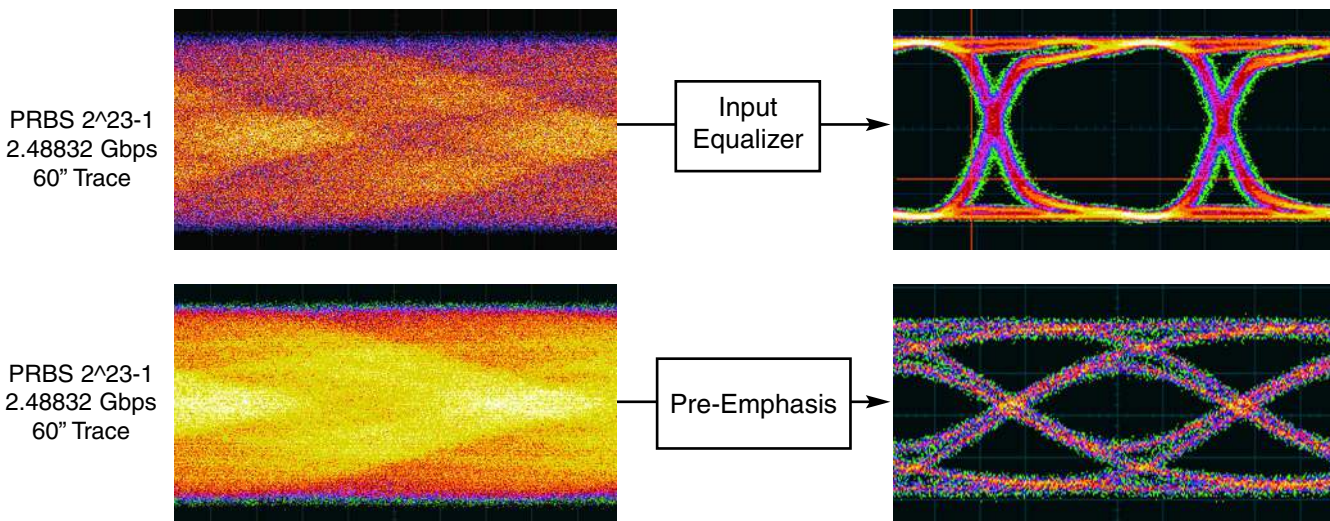
User-selectable input interface types allow AC-coupled input to CML and Infiniband. The outputs can be DC-coupled to CML or AC-coupled to Infiniband.

Frequency acquisition is accomplished with an external reference clock. The built-in frequency synthesizer allows multi-rate operation, while operating with a single reference clock.

### KEY FEATURES

- Eight independent multi-rate CDRs running between 1.0 Gbps-3.2 Gbps in a duplex quad configuration
- Flexible control through I<sup>2</sup>C-compatible interface or hard-wired pins
- Power consumption of 780 mW
- Integrated **adaptive equalization** allows use of lower cost board materials with increased link performance
- Built-in pattern generator and receiver for module and system testing
- Integrated **pre-emphasis** for driving trace lengths up to 60"
- Optimized for PRBS- or 8b/10b-like data patterns
- AC-coupled input interface to CML and Infiniband

The device can be controlled either through hardwired pins or an I<sup>2</sup>C-compatible interface. The hardwired mode eliminates the need for an external micro-controller, while allowing control of the key features of the device. The I<sup>2</sup>C-compatible interface allows complete control of the device features.



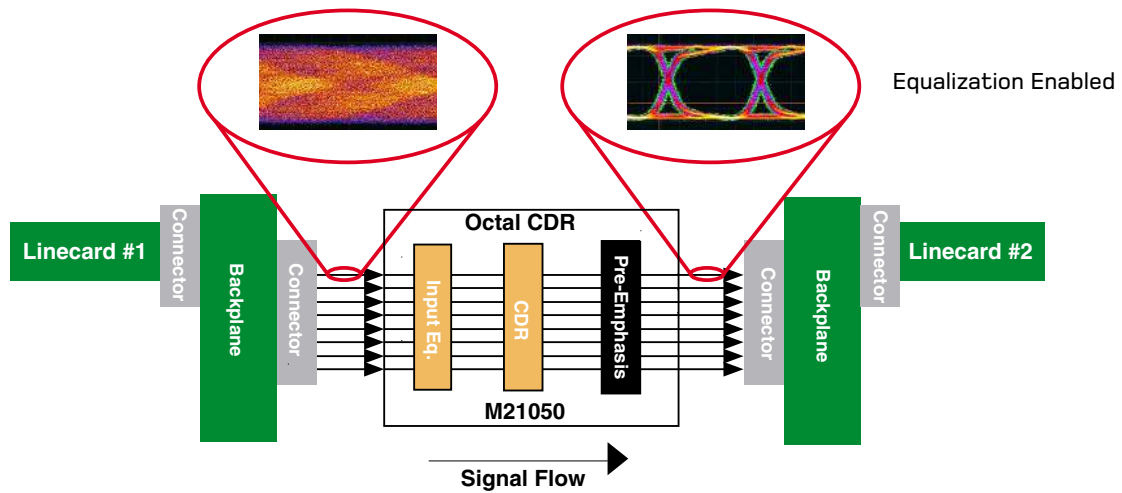


Figure 1: M21050 System Diagram - Equalization

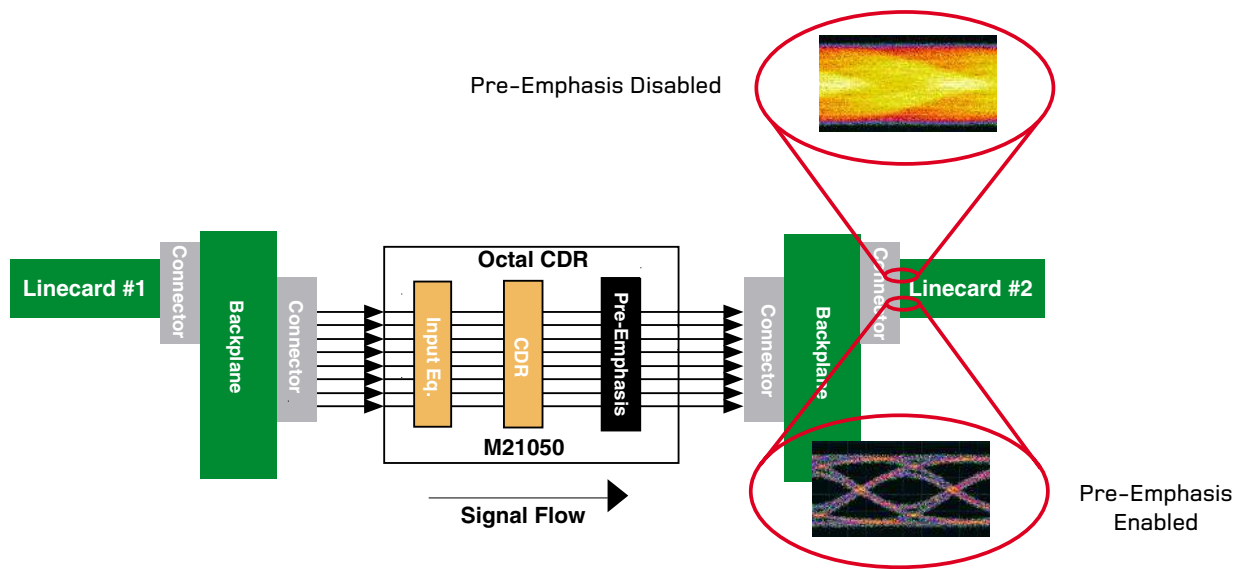


Figure 2: M21050 System Diagram - Pre-Emphasis

## Product Applications

- Infiniband systems and modules
- Fibre Channel (1x, 2x, 10x) systems
- Gigabit Ethernet systems
- 10GBASE-CX4/LX4 XAUI systems & modules
- Backplane reach extension
- Storage subsystems
- PCI-Express systems

## Ordering information

Number: M21050

Package data: 72-terminal, 10mm x 10mm, MLF

[www.mindspeed.com/salesoffices](http://www.mindspeed.com/salesoffices)

General Information: (949) 579-3000

Headquarters - Newport Beach

4000 MacArthur Blvd., East Tower

Newport Beach, CA 92660-3007

21050-BRF-001-B M03-0804

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