

Quad Multi-Rate CDR with Amplif-Eye™ (42 Mbps – 3.2 Gbps)

M21012/11/01

The M21012/11/01 are high-performance quad multi-rate clock and data recovery (CDR) arrays, optimized for multi-lane telecom and datacom applications. Each CDR operates independently at bit rates between 42 Mbps and 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 DC-coupled input to CML, LVDS, and LVPECL. The outputs can also be DC-coupled to CML, LVDS, and LVPECL.

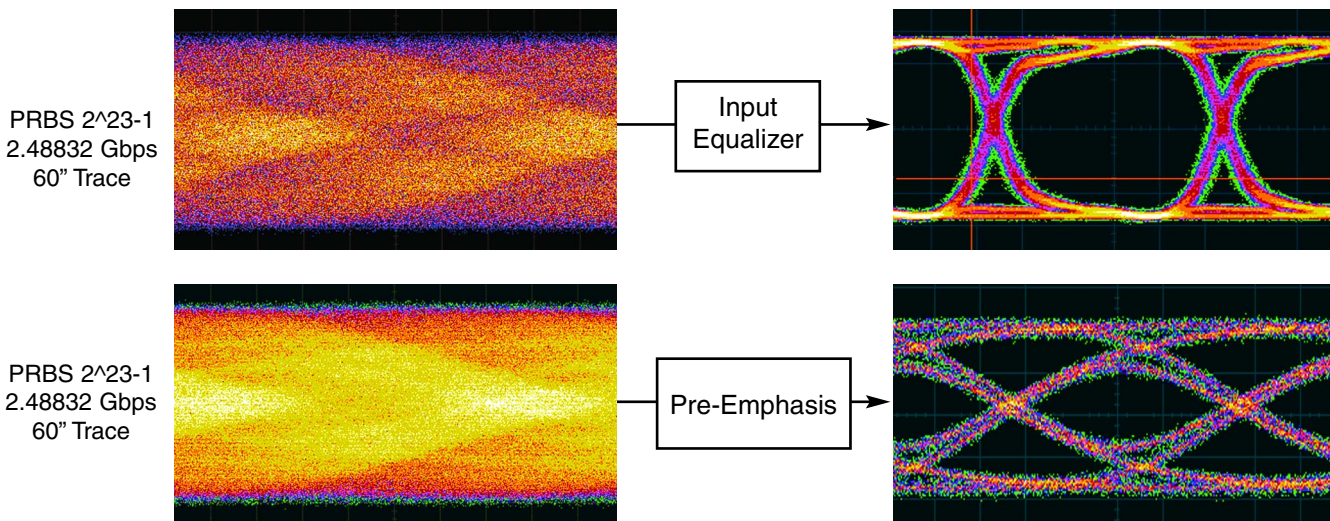
Frequency acquisition is accomplished with an external reference clock. The built-in frequency synthesizer allows multi-rate operation, while operating with a single reference clock.

The device can be controlled either through hardwired

KEY FEATURES

- Four independent multi-rate CDRs running between 42 Mbps–3.2 Gbps
- Flexible control through I²C-compatible interface or hard-wired pins
- Integrated **adaptive equalization** allows use of lower cost board materials with increased link performance
- Typical total power consumption as low as 400 mW with all channels running
- Integrated **pre-emphasis** for driving trace lengths up to 60"
- Built-in pattern generator and receiver for module and system testing
- Jitter generation 4.5 mUI, jitter tolerance 0.625 UI typical
- Optimized for PRBS- or 8b/10b-like data patterns
- DC-coupled input/output interface to CML, LVDS, and LVPECL

pins or an I²C-compatible interface. The hardwired mode eliminates the need for an external micro-controller, while allowing control of the key features of the device. The I²C-compatible interface allows complete control of the device features.



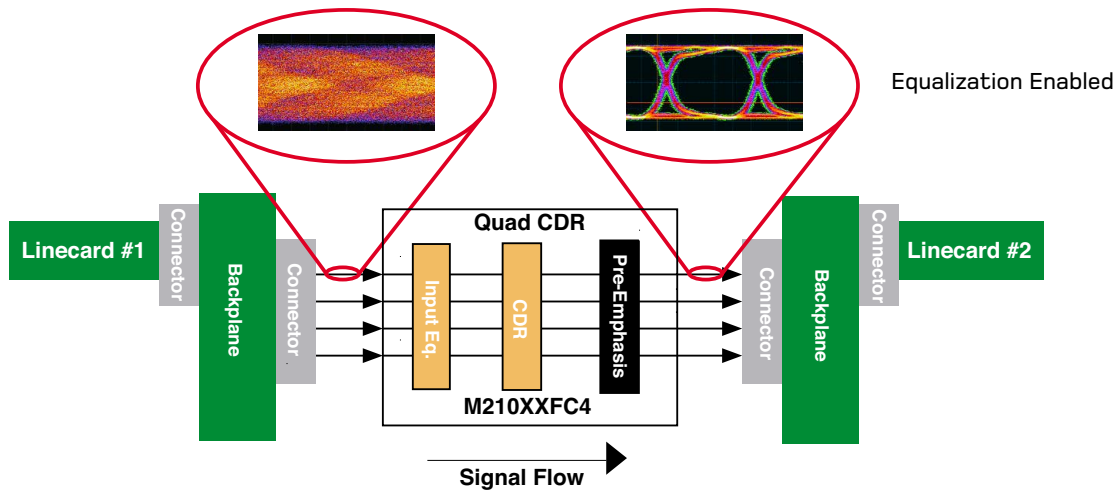


Figure 1: M21012 System Diagram - Equalization

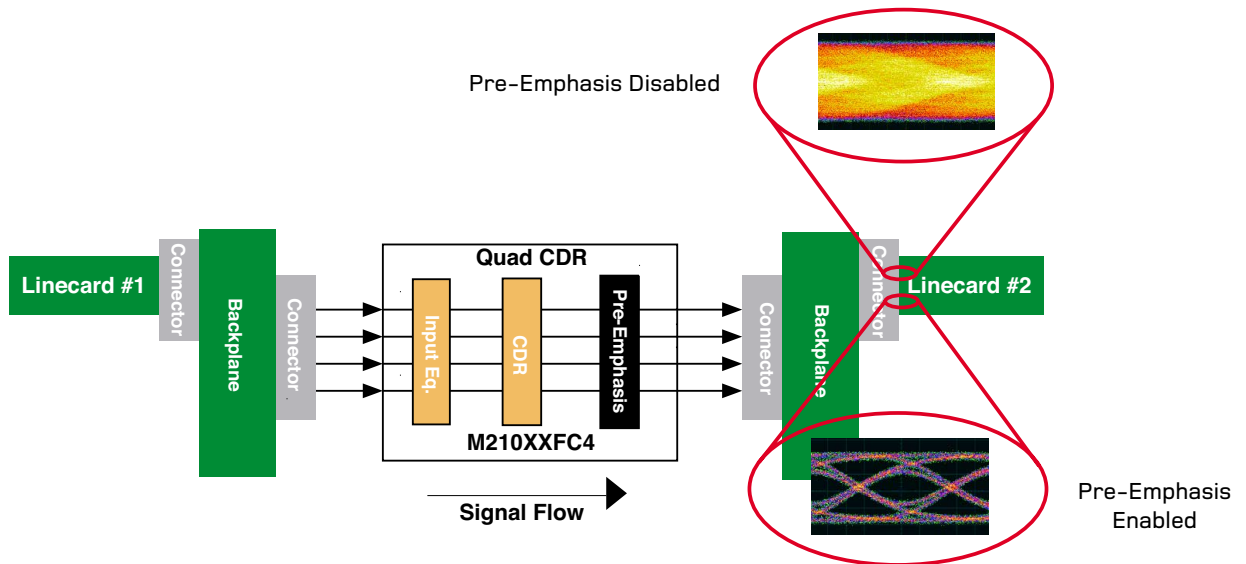


Figure 2: M21012 System Diagram - Pre-Emphasis

Product Applications

- SONET OC-1, OC-3, OC-12, OC-48 systems and modules
- Fibre Channel (1x, 2x, 10x) systems
- Gigabit Ethernet systems
- 10GBASE-CX4/LX4 XAUI systems & modules
- ESCON, FDDI, systems and modules
- Backplane reach extension
- Add drop multiplexers (ADM)

Ordering information

Number: M21012 (42 Mbps - 3.2 Gbps)
 M21011 (1 Gbps - 3.2 Gbps)
 M21001 (42 Mbps - 800 Mbps)

Package data: 72-terminal, 10 mm, MLF

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