

M21362/63 5.5 Gbps Backplane Signal Conditioners with Clock Data Recovery (CDR)

Product Overview

Mindspeed's family of 5.5 Gbps backplane signal conditioners feature small form factor, low power devices that enable data transmission over long backplanes at speeds up to 5.5 Gbps. Mindspeed's Amplif-Eye™ signal conditioning technology enables transmission of 5.5 Gbps data over long distances while also traversing two backplane connectors. These products are specifically designed to operate in environments that suffer from both loss and reflection. Each device channel features an independent equalizer and driver with programmable output swing and de-emphasis to maximize power efficiency. Random jitter is significantly reduced with an auto-rate detecting clock and data recovery (CDR) block that can operate up to 5.5 Gbps for extremely low output jitter. Virtually any digital protocol can be transmitted through the devices at speeds from 100 Mbps to 5.5 Gbps. The list of supported protocols includes: PCI Express® (PCIe), SATA, SAS, Infiniband®, XAUI and 8 Gbps Fibre Channel. Mindspeed's backplane signal conditioners are designed to recognize and transparently relay out-of-band (OOB) signals for SATA/SAS and PCIe. All devices include fully non-blocking switch matrices that allow for simple switching as well as multi-cast functionality. M21363 matrix can also be configured as a failover/redundancy switch. All devices operate from -20° to 90°C and can either be configured via a 2 wire interface or EPROM.

Features	Benefits
➤ Fully non-blocking switch matrices	Ultimate flexibility for switching and copying signals
➤ Clock data recovery (CDR)	Provides low jitter output and robust performance
➤ 16 dB equalization and 6 dB of de-emphasis available	Maximizes transmission length
➤ Small QFN packages	Provides space efficiency and reliability
➤ Out of band (OOB) / Electrical Bus Idle (EBI) signaling support	Allows for seamless integration into PCIe and S-ATA/SAS
➤ Boundary scan	High speed input and output pins
➤ Protocol agnostic	One device supports multiple applications
➤ 1.2 Volt core / optional 1.2V or 1.8V IO	Flexibility to use right power performance
➤ Extended temperature range (-20° to 90°C)	Provides additional margin for most applications
➤ Data rate independent	Operates up to 5.5 Gbps, no reference clock required

	M21362	M21363
Switch Matrix	8x8	12x12
Power (mW)	1700	2400
Package (mm)	10x10	12x12
EQ Control	Prog.	Prog.

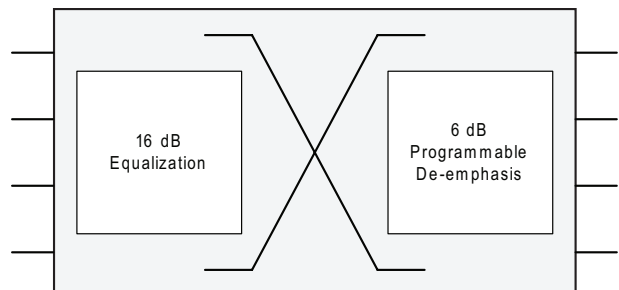


Fig. 1 - Product Selection Chart

Fig. 2 - M21362/63 Device Architecture



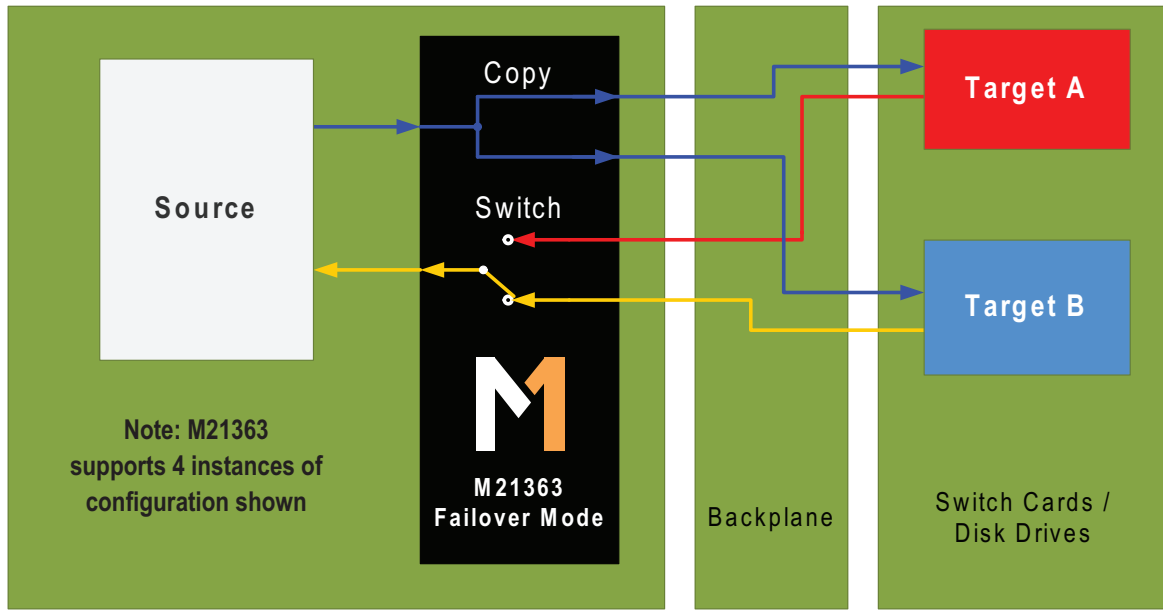


Fig. 3 - M21363 Application Diagram: Failover / Redundancy Switch

> Product Features

Applications

- Backplane equalizer / driver
- SDI video and DVB-ASI equipment
- SATA / SAS redundancy switch
- Blade server board to board interconnect
- Infiniband reach extension
- PCI Express failover switch

Package (RoHS Compliant)

- M21362: 10x10 mm, 72 pin QFN
- M21363: 12x12 mm, 88 pin QFN

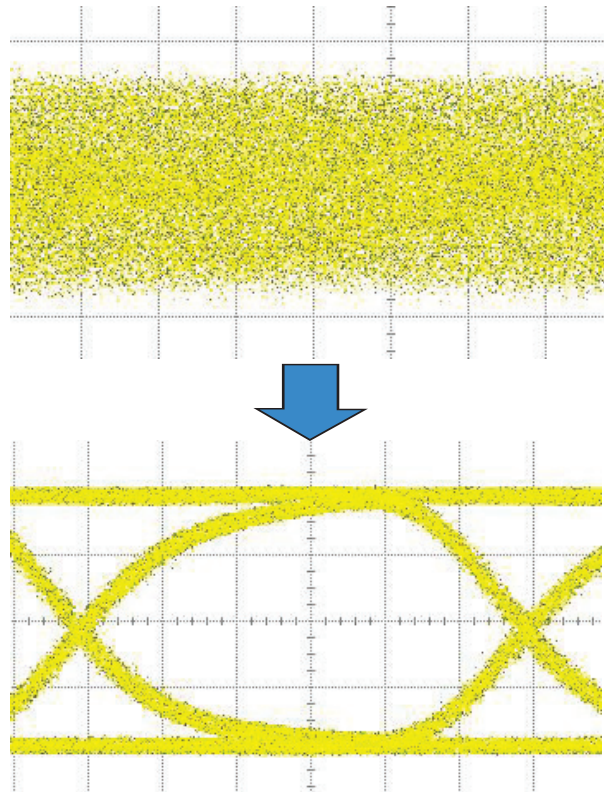


Fig. 4 - M21363: 5.0 Gbps Equalized After 40" FR4

For more product information, please visit www.mindspeed.com

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 M2136x-BRF-001-B.pdf

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