

## M21443 4.25 Gbps Twelve-Channel Backplane Signal Conditioner

### Product Overview

The M21443 is a twelve channel device designed to enable the transmission of multi-gigabit serial data through the most challenging environments. The device features twelve independent, programmable equalizers that equalize data at rates up to 4.25 Gbps. The M21443 is ideal for redundancy switch applications for buses that are developed in groups of four such as XAUI and PCI Express. Hardware switch control allows for very fast switching during failover conditions. The M21443 can also be controlled via an I2C compatible bus or self-configure from an external EEPROM without the need for a host processor. For compatibility with 2.5 Gbps PCI-Express and 3.0 Gbps S-ATA/SAS systems, the M21443 is designed with an electrical idle pass-through function to drive the differential output to the common mode level during OOB signaling. The device is available in a 14x14 mm, 100-pin eTQFP package.

Features	Benefits
➤ Full non-blocking switch matrices	Ultimate flexibility for switching and copying signals
➤ SMPTE 424M, 344M, 292M, and 259M compatible, DVB-ASI	Robust video compatibility
➤ 23 dB equalization and 6 dB of de-emphasis available	Maximizes transmission length
➤ Low power dissipation at 115 mW per channel	Minimizes thermal management costs
➤ 14x14 mm, 100-pin QFN package	Provides space efficiency and reliability
➤ Out of band (OOB) signaling support	Allows for seamless integration into PCIe, SATA, and SAS
➤ Protocol agnostic	One device supports multiple applications
➤ 1.2 Volt core / optional 1.2, 1.8 or 2.5 Volt IO	Flexibility to use right power performance
➤ Extended temperature range (-40°C to +85 °C)	Provides additional margin for most applications
➤ Data rate independent	Operates to 4.25 Gbps, no reference clock required

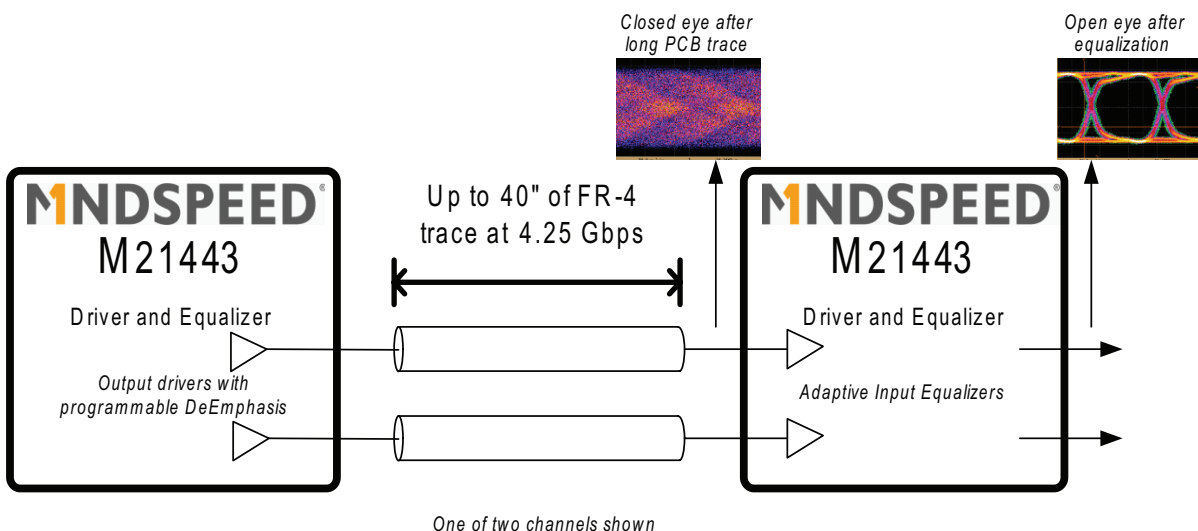


Fig. 1 - M21443 Application Diagram



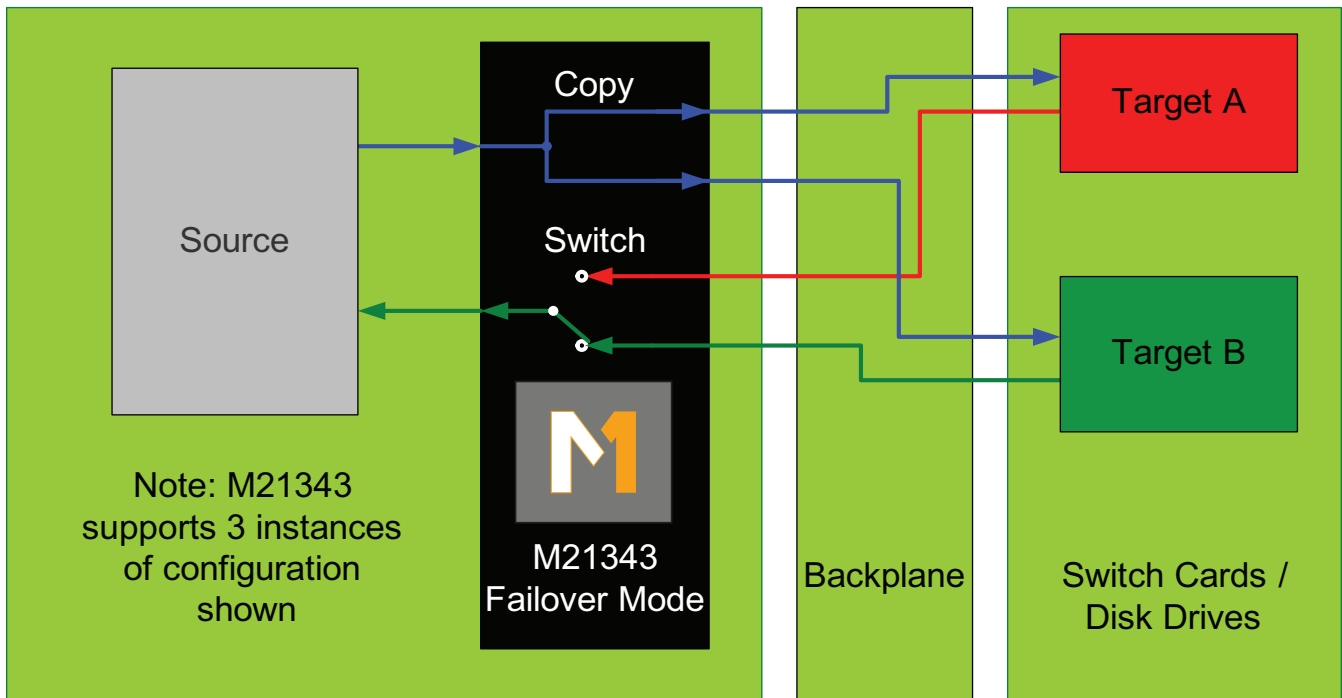


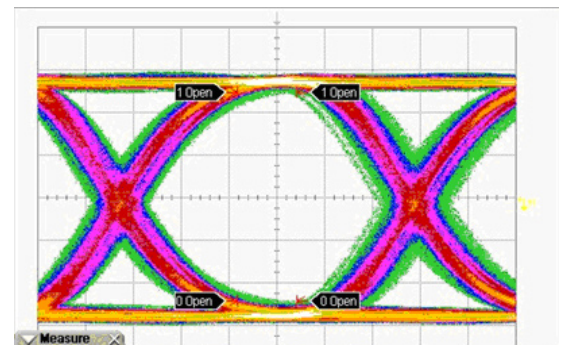
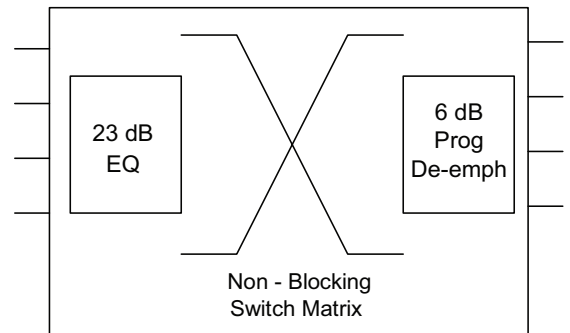
Fig. 2 - M21443 Application Diagram

## Product Features

- Protocol agnostic
- Supports SMPTE 424M, 344M, 292M, 259M, and DVB-ASI
- Supports rates from 50 Mbps to 4.25 Gbps
- Transparently relays OOB/EBI
- Extended temperature range -40°C to 85 °C
- Boundary scan
- 1.2V core
- 1.2V or 1.8V IO option
- 14x14, 100-pin eTQFP package

## Applications

- Backplane equalizer/driver
- SDI video and DVB-ASI equipment
- Blade server board to board interconnect
- InfiniBand reach extension
- PCI express



4.25 Gbps Equalized After 40" Trace

For more product information, please visit [www.mindspeed.com](http://www.mindspeed.com)

[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  
 M21443-BRF-001-A.pdf

© 2007 Mindspeed Technologies, Inc. All rights reserved. Mindspeed and the Mindspeed logo are trademarks of Mindspeed Technologies. All other trademarks are the property of their respective owners. Although Mindspeed Technologies strives for accuracy in all its publications, this material may contain errors or omissions and is subject to change without notice. This material is provided as is and without any express or implied warranties, including merchantability, fitness for a particular purpose and non-infringement. Mindspeed Technologies shall not be liable for any special, indirect, incidental or consequential damages as a result of its use.

Ordering Info:  
 M21443G-