

## M21528 3G/HD/SD-SDI Low Power Dual Cable Driver

### Product Overview

The M21528 is a very low power, highly integrated, dual cable driver for SMPTE compliant digital video applications. It can drive 2 pairs of 75Ω coaxial cables, or 50Ω equivalent loads, at SDI data rates from 143 Mbps to 2.97 Gbps. The device is capable of outputting SDI signals with jitter of 12 ps peak to peak, when operating at 2.97 Gbps.

The dual cable driver includes a 2x2 input crosspoint and integrated input and output termination resistors. The M21528, with input equalization for up to 36" of FR4 trace in addition to two connectors and exceptional Output Return Loss (ORL), is ideal for, high speed, 3G-SDI, designs.

The device features integrated supply regulators, allowing it to be powered from 1.8V, 2.5V, or 3.3V supply voltages. When operating at 1.8V, it consumes only 40mW per channel at 2.97Gbps. Furthermore, the power rails for the input and output circuitry are electrically isolated on-chip and as such may be connected to different voltage rails on the board. This feature enables the M21528 to be DC coupled to any upstream device in the 1.2V to 3.3V range.

The integrated 2x2 crosspoint allows for either input to be routed to either output, eliminating the need for an external multiplexer. Additionally, one input may be routed to both outputs. The cable driver also provides cable detect and Loss of Signal (LOS) functionality. It can be configured to automatically power down at cable disconnect or loss of input signal.

The M21528 is offered in a green and RoHS compliant, 4mm x 4mm, 24 pin QFN package.

| Features   | Benefits   |
|--|--|
| Independent, dual channel, multi-rate cable driver   | Save board area and enable high density designs        |
| SMPTE 424M, 292M, and 259M compliant   | Standard compliant solution                            |
| Exceptional output return loss with no matching network  | Save board area and enable high density designs        |
| Typical output jitter of 12ps pk-pk at 2.97 Gbps   | Enable robust, high speed, SDI design                  |
| Integrated, selectable, 75Ω or 50Ω output termination  | Save board area and enable high density designs        |
| Integrated 50Ω input termination   | Save board area and enable high density designs        |
| Very low power design; 40 mW/channel @1.8V   | Enable low power designs with minimal heat dissipation |
| Input equalization 36" of FR4 trace + 2 connectors   | Ease of high speed design and layout                   |
| Selectable slew rate for SD and 3G/HD operation  | Standard compliant solution                            |
| Integrated 2x2 crosspoint switch   | Save board area and enable high density designs        |
| Integrated regulators for multi-voltage operation (1.8V – 3.3V)  | Reduce number of power rails required on a board       |
| Universal DC coupling at the input (1.2V – 3.3V)   | Reduce the number of external components required      |
| Cable detect with automatic power down and power up upon cable disconnect and re-connect                   | Reduced power consumption                              |
| Loss of input signal detection with automatic power down and power up upon cable disconnect and re-connect | Reduced power consumption                              |
| Industrial operating temperature range ( -40°C to +85°C)   | Provides higher tolerance and additional design margin |



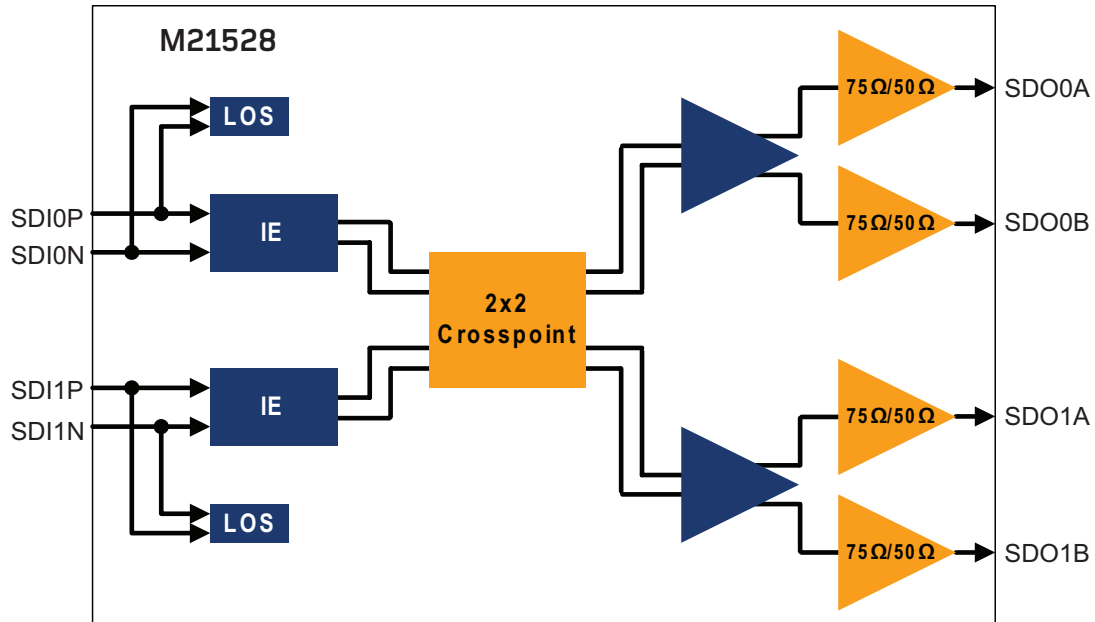


Fig. 1 - Functional Block Diagram

## Product Features

### Applications

- 3G/HD/SD-SDI switchers
- 3G/HD/SD-SDI routers
- 3G/HD/SD distribution amplifiers
- DVB-ASI equipment

### Standards Compliance

- SMPTE 259M, 292M, 344M, 424M
- Supports DVB-ASI (270 Mbps)

### Package (RoHS Compliant)

- 24pin QFN
- 4mmX4mm

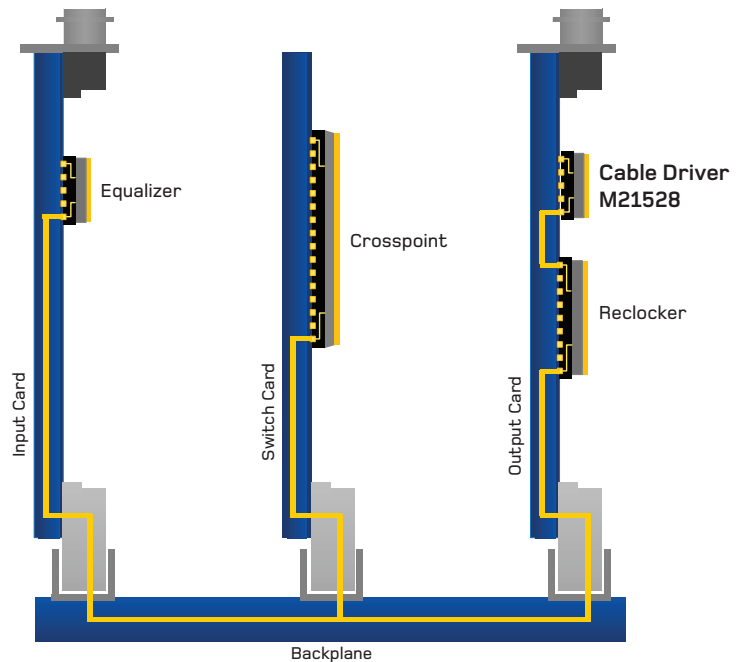


Fig. 2 - Typical Routing Switcher Application Diagram

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  
 M21528-BRF-001-B.pdf

© 2009 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.

**MINDSPEED**  
 BUILD IT FIRST®