

M21524 3G/HD/SD-SDI Low Power Dual Cable Equalizer

Product Overview

The M21524 is a very low power, highly integrated, dual cable equalizer for SMPTE compliant digital video applications. It provides adaptive, low noise, high gain equalization for 75Ω coaxial cable at SDI data rates from 143 Mbps to 2.97 Gbps. The device is capable of compensating for losses accumulated across cable length up to 140m when operating at 2.97Gbps.

The dual cable equalizer includes a 2x2 input crosspoint and integrated input termination resistors. The M21524, with output de-emphasis for up to 40" of FR4 trace and two connectors, is ideal for high speed, 3G-SDI, designs.

The device features integrated supply regulators, allowing it to be powered from 1.2V, 1.8V, 2.5V, or 3.3V supply voltages. When operating at 1.2V, it consumes only 75mW per channel at 2.97Gbps. Furthermore, the power rails for the output circuitry are electrically isolated on-chip and as such may be connected to different voltage rails on the board. This feature enables the M21524 to be DC coupled to any downstream 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 M21524 is offered in a green and RoHS compliant, 4mmx4mm, 24 pin QFN package.

Features	Benefits
➤ Independent, quad channel, multi-rate equalizer	Save board area and enable high density designs
➤ SMPTE 424M, 292M, and 259M compliant	Standard compliant solution
➤ Cable equalization for up to 140m of cable at 2.97Gbps	Robust analog performance
➤ Integrated, selectable 75Ω or 50Ω input termination	Save board area and enable high density designs
➤ Exceptional Input Return Loss with no matching network	Save board area and enable high density designs
➤ Very low power design; 80mW/channel @1.2V	Enable low power designs with minimal heat dissipation
➤ Integrated 2x2 crosspoint switch	Save board area and enable high density designs
➤ Output de-emphasis for up to 40" of FR4 + 2 connectors	Ease of high speed design and layout
➤ Integrated regulators for multi-voltage operation (1.2V – 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
➤ Loss of signal detection	Monitoring and diagnosis
➤ Industrial operating temperature range (-40°C to +85°C)	Provides higher tolerance and additional design margin



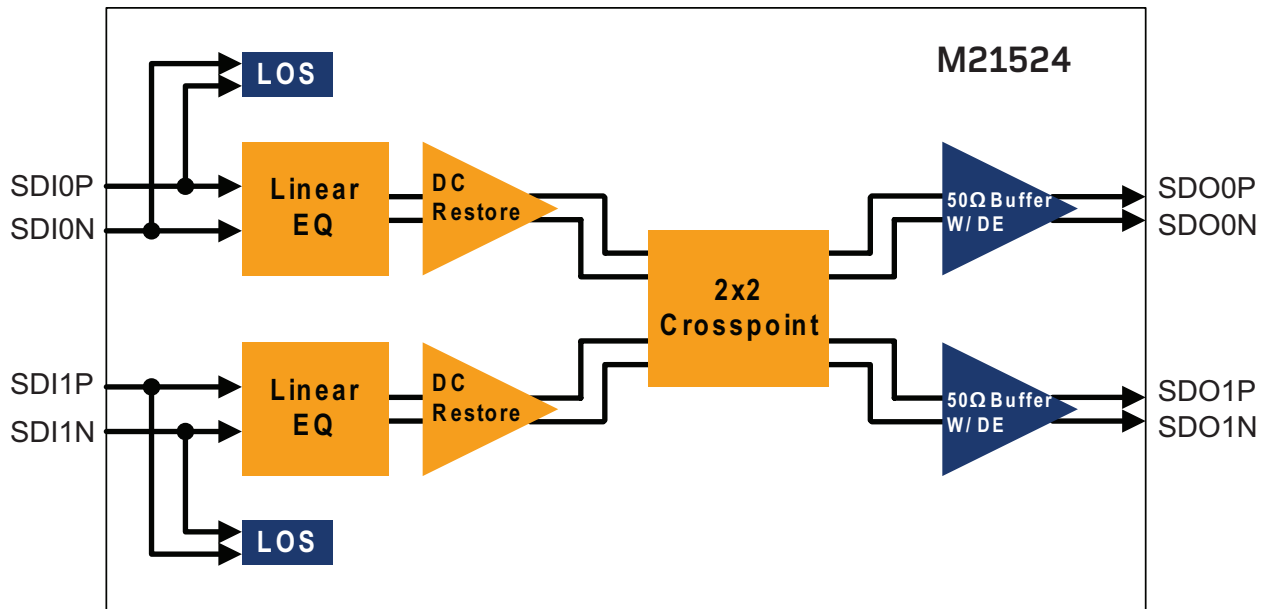


Fig. 1 - Functional Block Diagram

Product Features

Applications

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

Standards Compliance

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

Package (RoHS Compliant)

- 24pin QFN
- 4mmX4mm

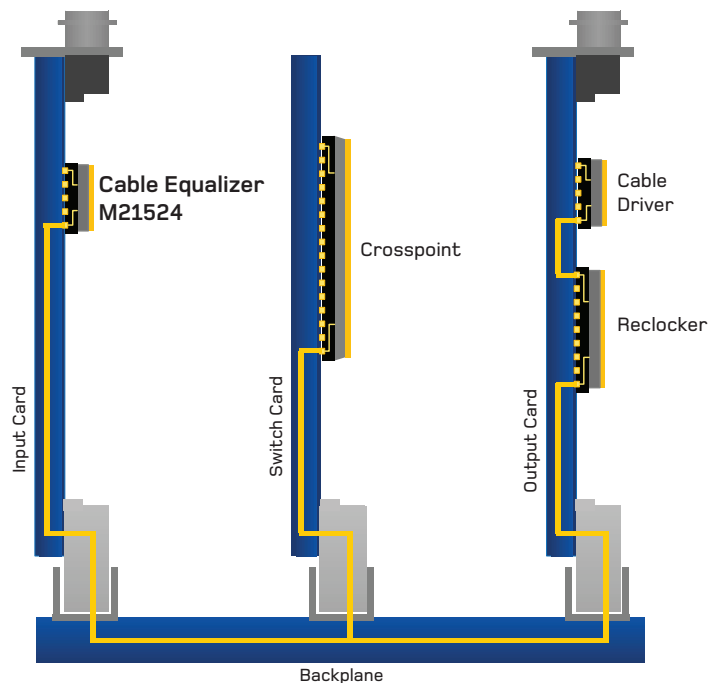


Fig. 2 - Typical Routing Switcher Application Diagram

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

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