

M21518 3G/HD/SD-SDI Low Power Cable Driver

Product Overview

The M21518 is a very low power cable driver for SMPTE compliant digital video applications. The M21518 can drive a pair 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 typical jitter values of 12 ps peak-to-peak, when operating at 2.97 Gbps.

The M21518 cable driver includes integrated input and output termination resistors, input equalization for up to 36" of FR4 trace, two connectors, and exceptional Output Return Loss (ORL) making it 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, the cable driver consumes only 52 mW at 2.97 Gbps. Furthermore, the power rails for the input and output circuitries are electrically isolated on-chip and as such may be connected to different voltage rails on the board. This feature enables the device to be DC coupled to any upstream device in the 1.2V to 3.3V range.

The cable driver also provides cable detect and Loss of Signal (LOS) functionality. The device may be configured to automatically power down at cable disconnect or loss of input signal.

The M21518 is available in a green and RoHS-compliant 24-pin QFN package.

Features	Benefits
<ul style="list-style-type: none"> SMPTE 424M, 292M, and 259M compliant 	Standard compliant solution
<ul style="list-style-type: none"> Exceptional output return loss with no matching network 	Save board area and enable high density designs
<ul style="list-style-type: none"> Typical output jitter of 12 ps pk-pk at 2.97 Gbps 	Enable robust, high speed, SDI design
<ul style="list-style-type: none"> Integrated, selectable, 75Ω or 50Ω output termination 	Save board area and enable high density designs
<ul style="list-style-type: none"> Integrated 50Ω input termination 	Save board area and enable high density designs
<ul style="list-style-type: none"> Very low power design; 52 mW/channel @1.8V 	Enable low power designs with minimal heat dissipation
<ul style="list-style-type: none"> Input equalization 36" of FR4 trace + 2 connectors 	Ease of high speed design and layout
<ul style="list-style-type: none"> Selectable slew rate for SD and 3G/HD operation 	Standard compliant solution
<ul style="list-style-type: none"> Integrated regulators for multi-voltage operation (1.8V – 3.3V) 	Reduce number of power rails required on a board
<ul style="list-style-type: none"> Universal DC coupling at the input (1.2V – 3.3V) 	Reduce the number of external components required
<ul style="list-style-type: none"> Cable detect with automatic power down and power up upon cable disconnect and re-connect 	Reduced power consumption
<ul style="list-style-type: none"> Loss of input signal detection with automatic power down and power up upon cable disconnect and re-connect 	Reduced power consumption
<ul style="list-style-type: none"> Industrial operating temperature range (-40°C to +85°C) 	Provides higher tolerance and additional design margin



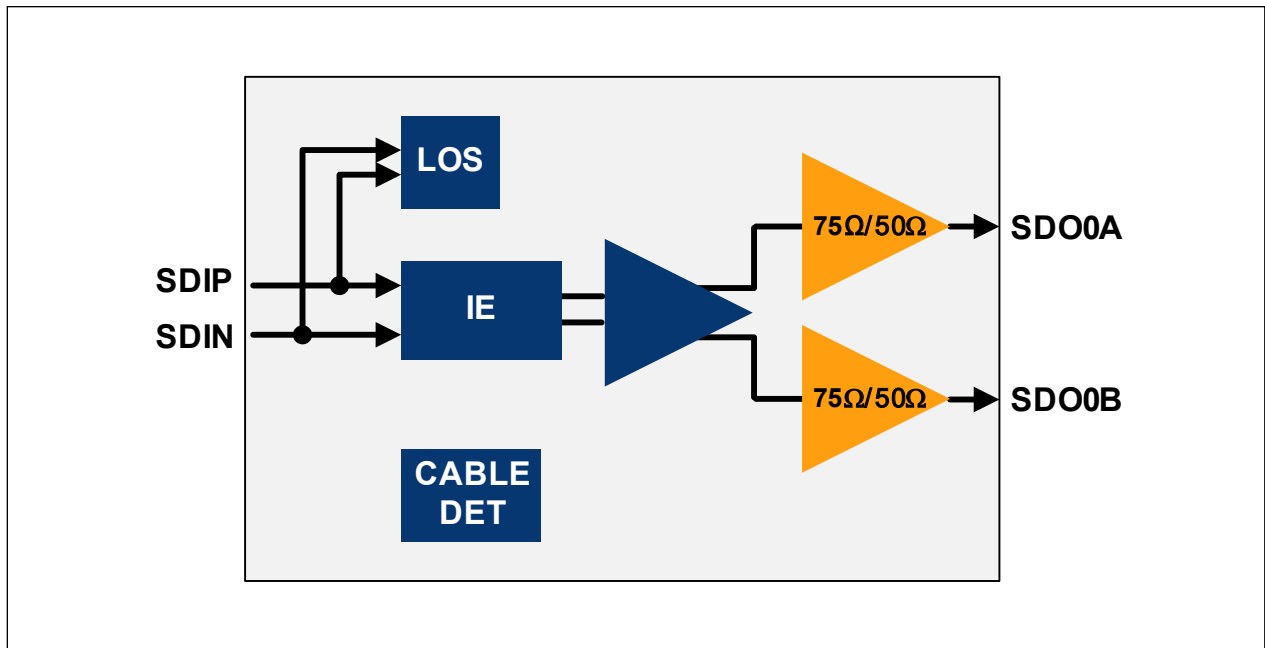


Fig. 1 - M21518 Functional Block Diagram

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

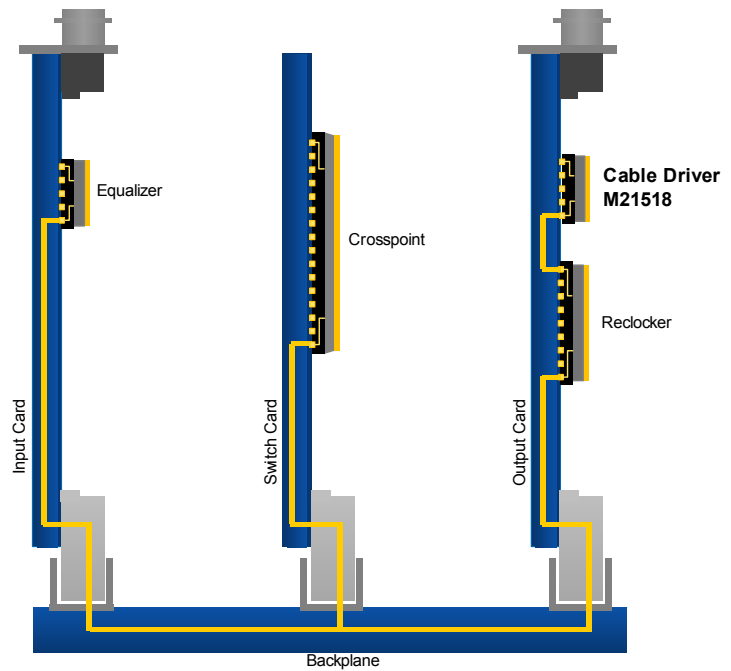


Fig. 2 - Typical Routing Switcher Application Diagram

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