

## M21355 3G/HD/SD-SDI Low Power Quad Video Reclocker

### Product Overview

The M21355 is a quad serial digital video reclocker with integrated trace equalization, automatic rate detect (ARD) circuitry, and a 16:4 crosspoint switch at the input. It operates at SDI data rates ranging from 270Mbps to 2970Mbps and is compliant to SMPTE 424M, SMPTE292M, and SMPTE 259M. At 270Mbps, it also supports DVB-ASI.

The M21355 has an input jitter tolerance (IJT) of greater than 0.6 unit intervals (UI) and can provide retimed serial outputs with very low output jitter. The quad reclocker requires a single, external, 27MHz crystal, which is used as the reference clock for all four channels. It includes per lane analog input equalization for up to 40" of FR4 trace and two connectors in addition to output de-emphasis.

This 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 135mW per channel at 3G-SDI. Furthermore, the power rails for the core, 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 M21355 to be DC coupled to any upstream or downstream device regardless of its input/output voltage level.

The 16:4 crosspoint at the input allows any of the 16 inputs to be routed to any of the four integrated reclockers and its respective output. The device, and the input crosspoint, may be configured by setting the internal registers through the I<sup>2</sup>C or SPI interfaces. Optionally, the quad reclocker may be configured at power up through an external I<sup>2</sup>C EEPROM device. Limited configuration is also possible through hardware configuration.

The M21355 is offered in a green and RoHS compliant, 10mm x 10mm, 72pin QFN package.

Features	Benefits
› Independent, quad channel, multi-rate reclocker	Save board area and enable high density designs
› SMPTE 424M, 292M, 259M-C, and DVB-ASI compliant	Standard compliant solution
› 0.6UI input jitter tolerance	Enable robust, error free designs
› Integrated 50Ω input termination	Save board area and enable high density designs
› 16:4 input crosspoint	Save cost and area (no external component necessary)
› Input equalization 40" of FR4 Trace and two connectors	Ease of high speed design and layout
› Output de-emphasis	Ease of high speed design and layout
› 135mW power consumption per channel (1.2V operation)	Enable low power designs with minimal heat dissipation
› Integrated regulators for multi-voltage operation (1.2V – 3.3V)	Reduce number of power rails required on a board
› Electrically isolated input, output, and core supply rails	DC interface – saves board area and cost
› Mute and configurable auto or manual bypass mode	Allow design for non-standard rates
› Automatic and manual modes for rate indication and selection	Ease of use and flexibility
› Loss of lock (LOL), loss of signal (LOS) and data rate indication	Ease of status update and diagnostics
› I <sup>2</sup> C, SPI and I <sup>2</sup> C EEPROM interface	Flexibility and ease of control and configuration
› Industrial operating temperature range ( -40°C to +85°C)	Provides higher tolerance and additional design margin



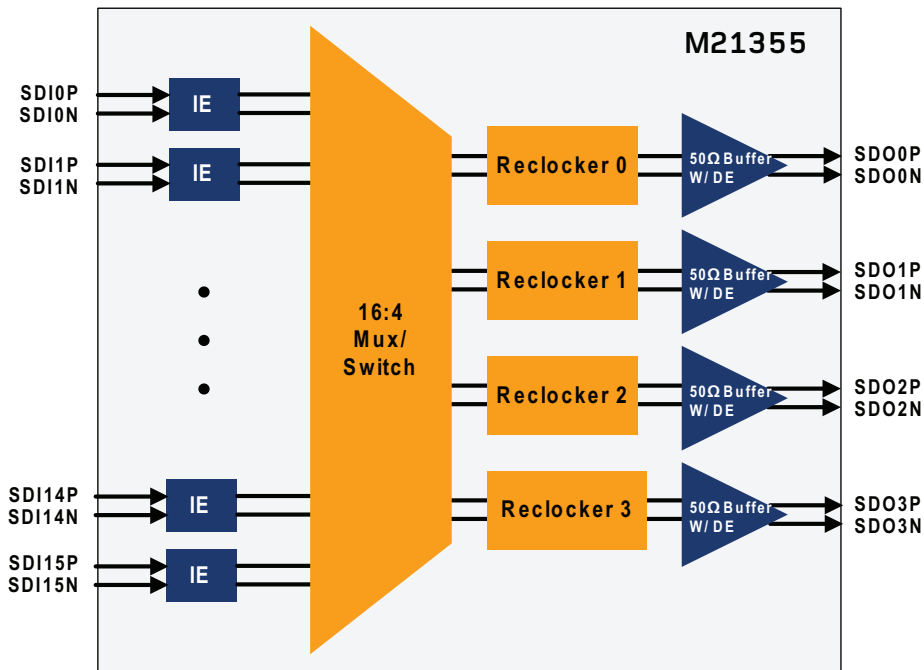


Fig. 1 - Functional Block Diagram

## 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-C
- DVB-ASI (270 Mbps)

### Package (RoHS Compliant)

- 72pin QFN
- 10mmX10mm

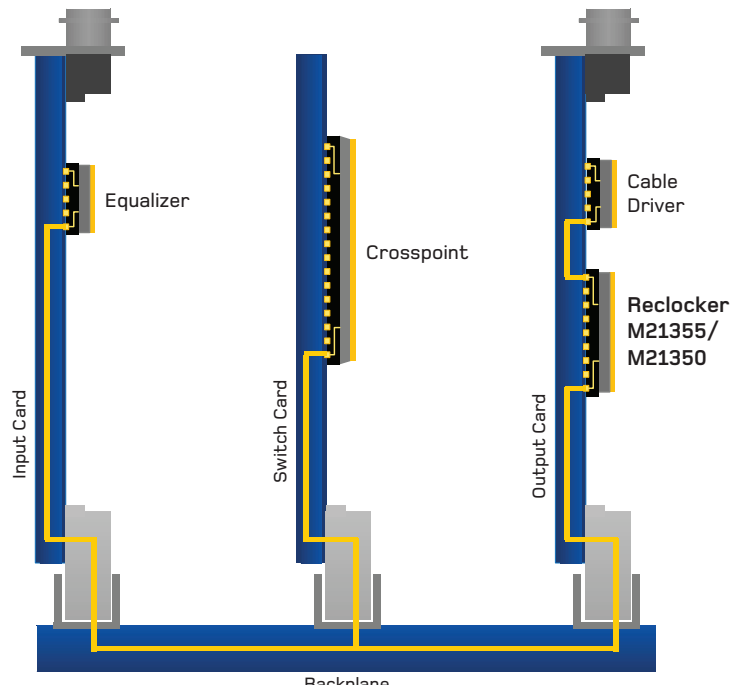


Fig. 2 - Typical Routing Switcher Application Diagram

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