

## Next Generation High Performance Analog Broadcast Video Solutions

### M21235

#### HD/SD Broadcast Video Multi-rate Automatic Reclocker

The M21235 is an evolution of Mindspeed's single channel HD/SD multi-rate reclocking technology that provides significant power savings, superior performance, and flexible power supply options when compared to other competing single channel reclockers.

In addition to a smaller 7x7mm MLF package to enable denser designs with simplified PCB layouts, the M21235 also provides a new I<sup>2</sup>C serial interface for simplified control of all functions and PCB layout.

The M21235 is complemented with the M21232 HD/SD video cable driver in a 3x3mm MLF package, and the M21234 HD/SD video cable equalizer in a 5x5mm MLF package to optimize performance and density in new multi-rate designs.

Additional unique Mindspeed devices include the HD/SD quad channel reclocking and asynchronous switching families:

- M21250, DS-M21251, DS-M21252 quad channel multi-rate video reclockers
- M21260 4x4 1.6 Gbps video crosspoint switch with quad multi-rate reclockers
- DS-M21261 1:4 1.6 Gbps video fanout with HD/SD multi-rate reclocking
- DS-M21262 4:1 1.6 Gbps video selector with HD/SD multi-rate reclocker

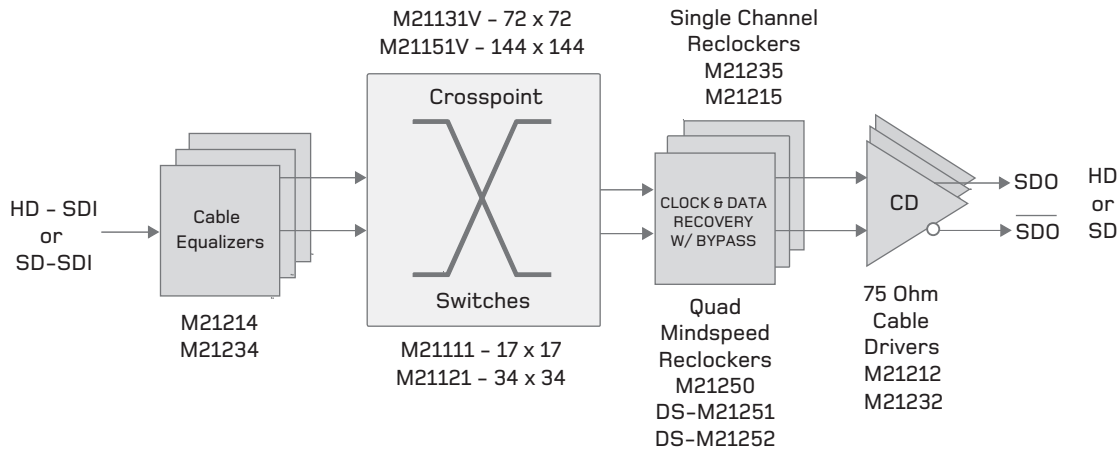
#### KEY FEATURES

- > SMPTE 292M, SMPTE 259M, SMPTE 344M compliant
- > Supports data rate operation of 143, 177, 270, 360, 540, 1483.5/1485 Mbps and DVB-ASI at 270 Mbps
- > Auto and manual modes for rate indication and selection
- > 4:1 input selector
- > Fully differential signal paths with integrated 50Ω input/output terminations
- > Configurable AutoMute or manual BYPASS mode
- > I<sup>2</sup>C Serial Interface
- > Lock detect output
- > SD/HD status indication output
- > 2.5V or 3.3V operation
- > Reduced power dissipation
  - 325mW typical @ 2.5V
  - 430mW typical @ 3.3V
- > Increased operating temperature range:
  - 10°C to +85°C

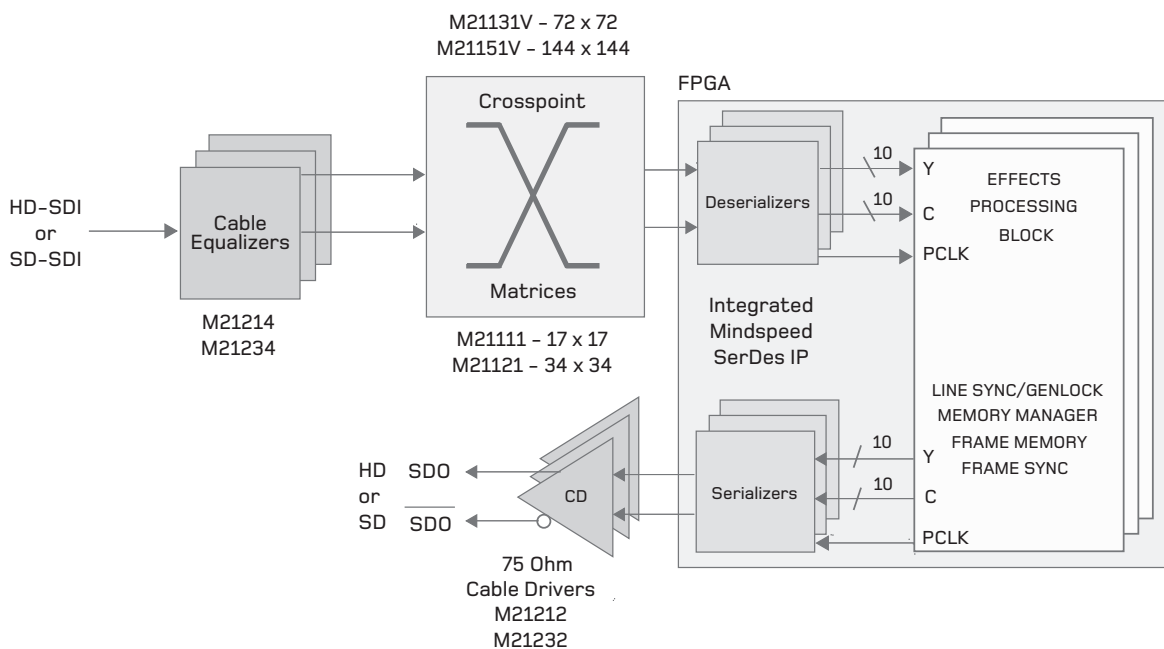
Mindspeed's innovative circuit architecture enables next generation systems with flexible power supply operation of 2.5V to 3.3V with a > 50% typical power reduction at 2.5V (40% at 3.3V) supply rails and a wider operating temperature range (-10°C to +85°C) and now with simplified control.

The additional functionality previously available on the M21215 RSVD pins is now available thru the I<sup>2</sup>C interface while basic functions such as Input selection, rate selection or indication, and output mode control are still available through hard-wired control pins.





HD/SD Serial Routing Switcher Application Diagram



HD/SD Production & Master Control Switcher Application

## Product Features

### Applications

- Small to large serial routing switchers
- Distribution amplifiers

### Additional Features

- Crystal reference frequency selection: 12MHz or 14.140MHz
- Auto rate detect sequence optimization
- Loop bandwidth control
- Output swing amplitude control
- PCML, LVDS, and LVPECL output modes
- Common mode shift for DC coupling to LVPECL

### Ordering Information

- M21235-33P: HD/SD Video Reclocker (143 Mbps - 1485 Mbps)
- M21235G-33P: HD/SD Video Reclocker (143 Mbps - 1485 Mbps) [RoHS compliant package]

Package: 7x7mm, 48 pin MLF  
7x7mm, 48 pin MLF  
[RoHS compliant package]

[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

21235-BRF-001-D.pdf

© 2006 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™