

# 4x4 1.6 Gbps Crosspoint with Quad Channel Multi-rate Video Reclockers for SD/HD (42 Mbps to 1.6 Gbps) Applications

## M21260

The M21260 is part of a family of low-power, high-performance video devices for broadcast and professional video applications. In addition to the 4x4 crosspoint with independent quad channel video reclockers, other video products include:

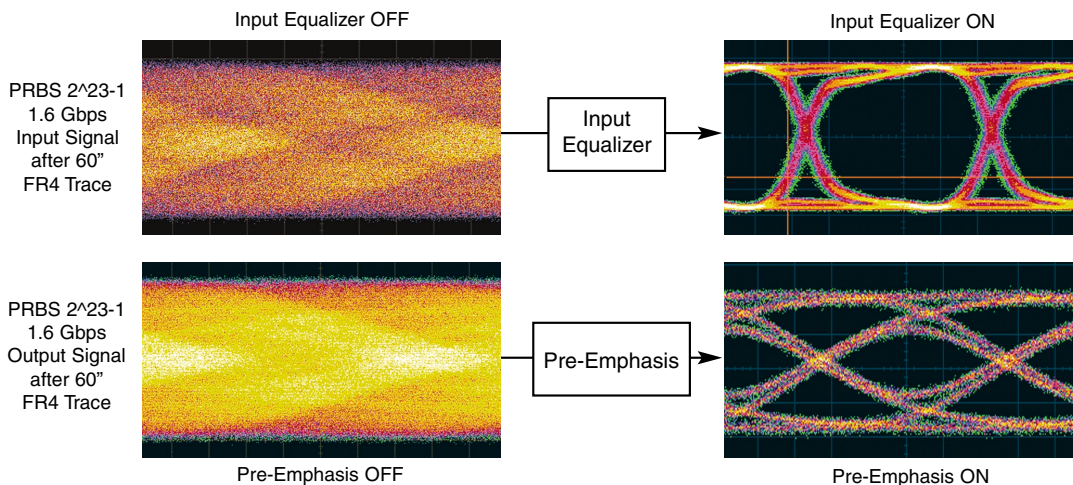
- M21250, M21251, M21252 quad channel reclockers for SD, SD/HD, and SD/HD/2xHD data rates
- M21261 1:4 1.6 Gbps video fanout with SD/HD multi-rate reclocking
- M21262 4:1 1.6 Gbps video selector with SD/HD multi-rate reclocker

The M21260 provides all of the features and benefits of the M21251 quad channel SD/HD reclocker and incorporates a fully non-blocking 4x4 asynchronous crosspoint switch before the reclocker stages.

Reduced power dissipation with improved jitter generation, tolerance, and transfer enable robust system design at reduced cost and simplified thermal management. System and chip level BIST functionality enables improved manufacturing (JTAG) and system level troubleshooting and diagnostics (test pattern generators – PRBS, 8b/10b)

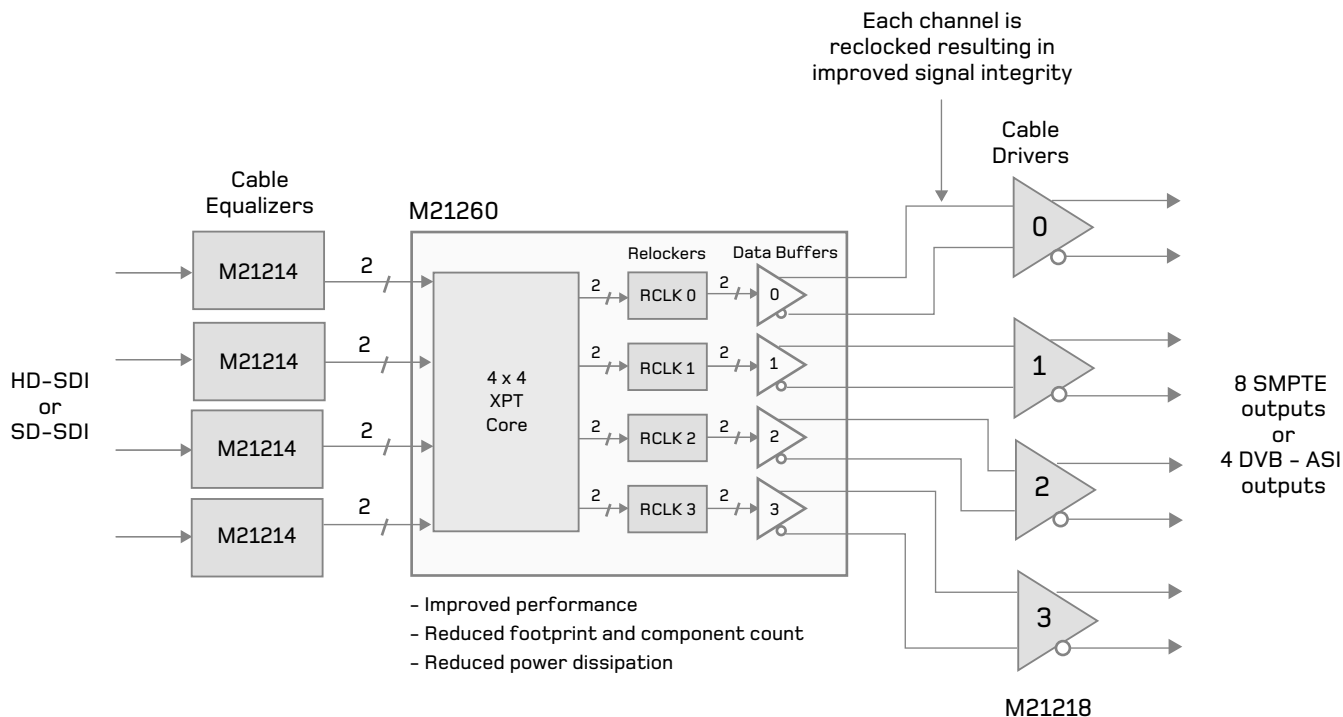
### KEY FEATURES

- Integrated 4x4 crosspoint switch for data rates to 1.6 Gbps with a fully non-blocking architecture and broadcast / multicast functionality
- Fully independent, quad channel multi-rate video reclockers, SMPTE and DVB-ASI compliant
  - Hardwired control mode: 143, 177, 270, 360, 540, 1483.5/1485 Mbps
  - Software control mode: 42 Mbps – 1.6 Gbps
  - Bypass mode: 0 – 1.6 Gbps
- Superior jitter generation (5mUI typical) and improved jitter tolerance in the high frequency band
- Integrated loop filter components and I/O termination resistors for simplified PCB designs and reduced cost
- Flexible I/O interfacing to CML, LVDS, and LVPECL with per channel output amplitude control
- Serial SPI 4 wire interface or hardwired interface control
- BIST features for PCB and system testing with fully independent transmitter and receiver
  - PRBS:  $2^7 - 1$ ,  $2^{15} - 1$ ,  $2^{23} - 1$ ,  $2^{31} - 1$
  - 8b/10b: CJTPAT, CRPAT, countdown
- PCB layout friendly with “pass through” I/O and high speed output polarity inversion



Advanced third generation signal conditioning functionality such as Input Equalization, output pre-emphasis, integrated I/O terminations, and PCB layout friendly features facilitate quick PCB turn times while helping to maintain signal integrity.

A built in frequency synthesizer, allows multi-rate operation from a single reference clock. The device can be controlled through hardwired pins or a SPI compatible 4 wire serial interface. The hardwired mode simplifies the overall design, while allowing control of key features while the SPI interface with an external microcontroller enables complete control of the device functions.



SD/HD 4x4 Serial Routing Switcher

## Product Features

### Applications

- $\mu$ Serial routing switchers
- Programmable n:4 distribution amplifiers
- Programmable patch panels

### Additional Features

- Fully SMPTE 259, SMPTE 292, and SMPTE 344 compliant
- Inexpensive, multi vendor stocked 12MHz reference clock
- Reclocker BYPASS operation
- User selectable independent clock outputs
- JTAG external boundary scan for high speed and digital I/O circuitry
- Temperature monitor
- Loss of lock indication

### Ordering Information

- M21260-12P: 4x4 1.6 Gbps crosspoint switch with quad channel SD/HD reclockers (42 Mbps – 1.6 Gbps)
- M21260G-12P: 4x4 1.6 Gbps crosspoint switch with quad HD/SD reclockers (42 Mbps – 1.6 Gbps) [RoHS compliant package]

Package: 72 terminal, 10x10mm MLF  
72 terminal, 10x10mm MLF  
[RoHS compliant package]

[www.mindspeed.com/salesoffices](http://www.mindspeed.com/salesoffices)

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