

# 144x144 1.6 Gbps Crosspoint Switch for Digital Video Applications

## M21151V

### Highest Performance, Lowest Power Crosspoint Switch Reduces System Cost and Complexity

Built on three generations of industry-leading crosspoint switches, the M21151V is a low-power CMOS, high-speed 144x144 crosspoint switch with robust signal conditioning circuits for driving and receiving high-speed signals through backplanes.

The device supports data rates from 0 to 1.6 Gbps on each channel, allowing any combination of SD (143-540 Mbps) or HD (1.4835-1.485 Gbps) digital video traffic while consuming as low as 12 W of power (typical) with all channels operational. In addition, the PowerScaler™ features offer dynamically scalable switch settings to further reduce power consumption. Unused portions of the core can be automatically (SmartPower™) or manually turned off, without effecting the operation of the remaining channels.

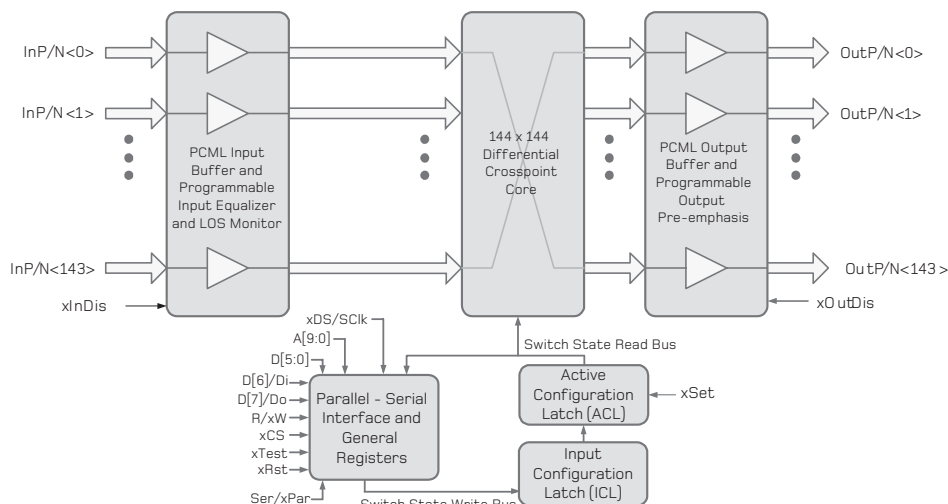
The signal conditioning features of the M21151V include per channel programmable input equalizer (IE) and output pre-emphasis (PE) circuits. The IE removes ISI jitter, which is usually caused by PCB skin effect losses.

### KEY FEATURES

- Independent per channel traffic rates of 0 to 1.6 Gbps
- Supports SD (143-540 Mbps) or HD (1.4835-1.485 Gbps) rates
- Low-power consumption of 12 W
- Programmable input equalizer to reduce deterministic jitter (ISI)
- Input signal activity monitoring
- Programmable output pre-emphasis for driving long board traces and cables
- PowerScaler for further power reduction based on system needs

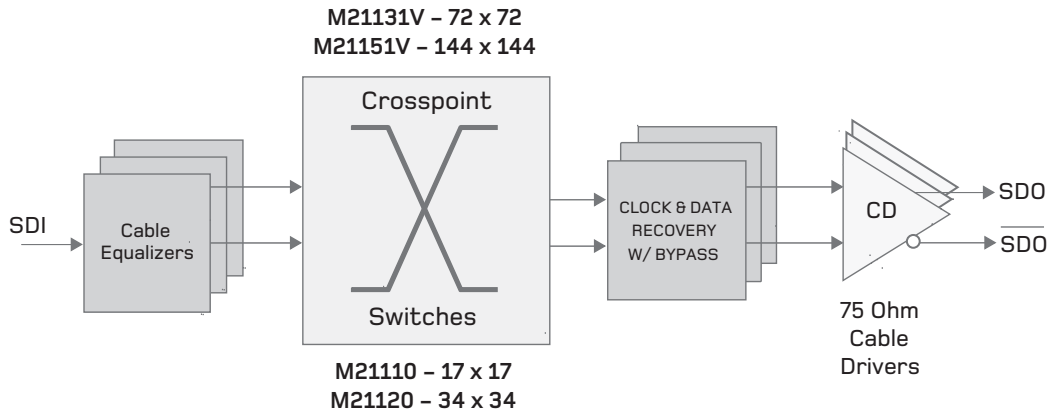
The IE circuit opens the input data eye in applications where long PCB traces and cables are used. There are four settings available for the input equalizer, allowing flexibility in adjusting the equalization level on a per-channel basis.

The PE provides a boost of the high frequency content of the output signal, such that the data eye remains open after passing through a long interconnect of PCB traces and cables. There are two amplitude settings and two duration settings that can be selected on a global basis.

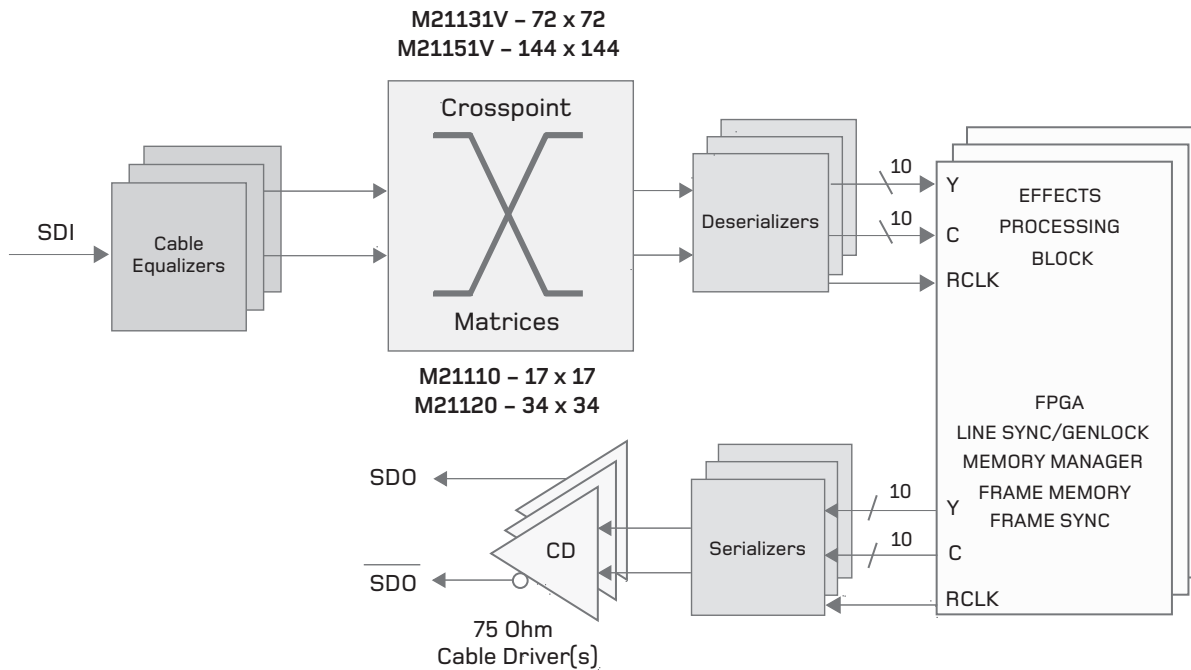


M21151V Block Diagram





## Serial Routing Switchers



## Production Switchers

### Product Features

#### Applications

- Wideband (SD & HD) video systems
- Large N x N cascaded video routers
- Switching routers
- Monitor walls
- Production switchers

#### Ordering Information

- M21151-33P 144 x 144 1.6 Gbps video crosspoint switch
- 1156 terminal, 35 mm CBGA

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