

## M21115/25 3.8 Gbps 20x20 / 40x40 Crosspoint Switch

### Product Overview

#### M21115 3.8 Gbps 20x20 and M21125 3.8 Gbps 40x40 Crosspoint Switch

M21115 (20 x 20) and M21125 (40 x 40) are asynchronous crosspoint switches rated to operate up to 3.8 Gbps per lane. Fully non-blocking switch core allows any input to be routed to any output, or any group of four lanes to be routed to any other group of four lanes with tight skew control which is useful for HDMI, DVI, KVM or DisplayPort applications. Signal conditioning capabilities include input equalization and output de-emphasis, configurable on a per-lane basis and optimized for PCB traces and shielded twisted pair (STP) cables such as those used in HDMI, DVI, KVM or DisplayPort. This device is enhanced to support port selection and switching for HDMI, DVI, KVM or DisplayPort applications supporting configurations from 5 x 1 to 10 x 10 switching/port selections in a common footprint. The low-power design provides a flexible power supply range, and the ability to power-off unused I/O. Additional power supply savings can be realized by utilizing the SmartPower feature, which dynamically powers-down unused portions of the switch core.

Features	Benefits
<ul style="list-style-type: none"> <li>Direct interface connect to HDMI, DVI and Display-Port cables</li> </ul>	Lowers system cost by integration of cable equalizer
<ul style="list-style-type: none"> <li>Common footprint for M21115/25</li> </ul>	Single PCB design supports multiple standards and configurations saving development costs
<ul style="list-style-type: none"> <li>Protocol agnostic up to 3.8Gb/s</li> </ul>	One device supports multiple applications and data rates
<ul style="list-style-type: none"> <li>Programmable per lane input equalization</li> </ul>	Backplane (up to 30 inches) or STP cables (up to 10m)
<ul style="list-style-type: none"> <li>Fully non-blocking switch matrices</li> </ul>	Ultimate flexibility for switching and multicasting signals
<ul style="list-style-type: none"> <li>Programmable output de-emphasis to 6db</li> </ul>	Improves system jitter budget and drive reach
<ul style="list-style-type: none"> <li>Loss of signal (LOS) alarm</li> </ul>	Diagnostics for status
<ul style="list-style-type: none"> <li>Wide 1.27mm ball pitch</li> </ul>	Lower cost PCB design by flexible routing design
<ul style="list-style-type: none"> <li>Low power consumption: 3.0W</li> </ul>	Lower power and thermal management costs
<ul style="list-style-type: none"> <li>2.5V to 3.3V power supply operation</li> </ul>	Flexible power supply range
<ul style="list-style-type: none"> <li>Out of Band (OOB) signaling support</li> </ul>	Allows for seamless integration into PCIe, SATA, and SAS
<ul style="list-style-type: none"> <li>I<sup>2</sup>C or hardware pins control</li> </ul>	Flexible and complete control for configuration
<ul style="list-style-type: none"> <li>JTAG boundary scan</li> </ul>	Improves manufacturing yield for configuration
<ul style="list-style-type: none"> <li>Junction temperature sensor</li> </ul>	Automatically prevents thermal damages to the device
<ul style="list-style-type: none"> <li>Extended temperature operation: -40°C to +85°C</li> </ul>	Provides higher tolerance and additional design margin



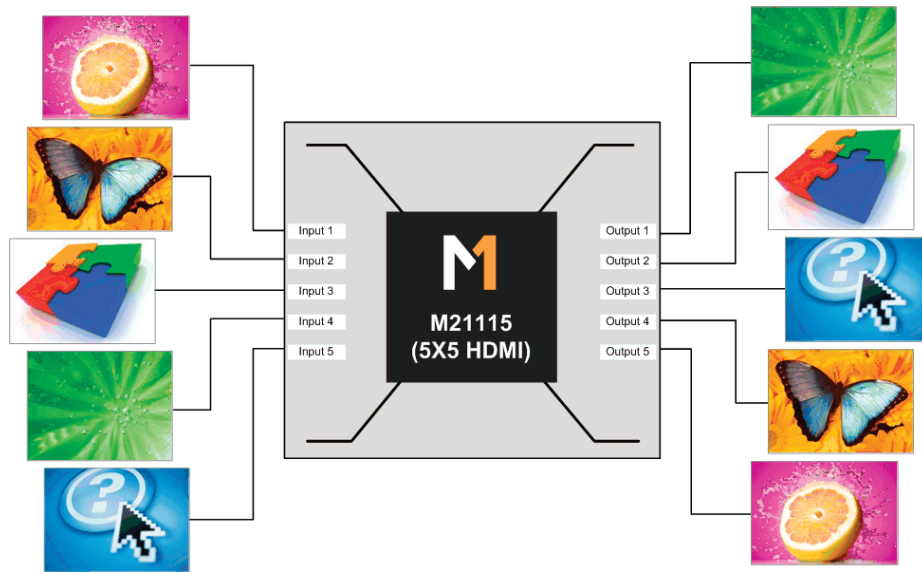


Fig. 1 - M21115 Matrix Application Diagram

## Product Features

### Applications

- HDMI, DVI, KVM and DisplayPort Switchers, Splitters, Port Selectors and Matrix
- HDMI Port Selector for AV Receiver, Projectors and Displays
- Digital Video Routers & Switchers (SDI-3G, HD, SD)
- High Speed Serial Backplane Switching and Signal Conditioning
- Storage Area Network (SAN) Switch Fabrics
- Fiber Optic Network Switching

### Standards Compatibility

- HDMI/DVI, DisplayPort
- PCI Express
- InfiniBand
- Gigabit Ethernet
- Fibre Channel
- SAS and S-ATA
- XAUI
- SONET/SDH
- SMPTE

### Package (RoHS)

- 35x35 mm, 676 ball TEPBGA

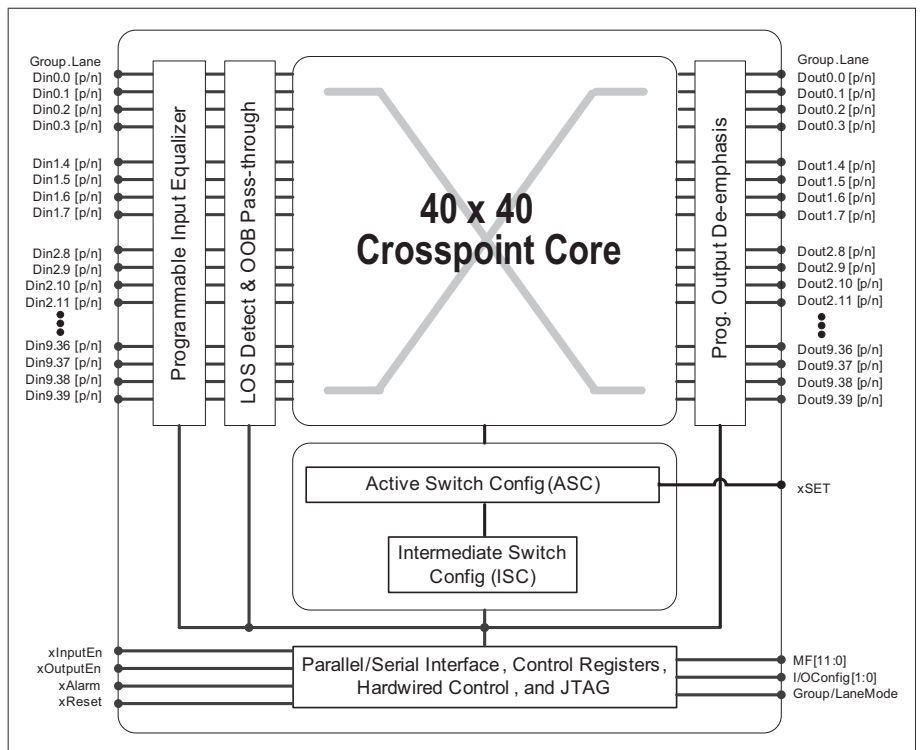


Fig. 2 - M21115/25 Block Diagram

For more product information, please visit [www.mindspeed.com](http://www.mindspeed.com)

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