

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

### Product Overview

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

The M21115/25 are 40/20 input by 40/20 output asynchronous crosspoint switches rated to operate up to 3.8 Gbps per lane. Its 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. The group of quad-lanes enables four lane applications with stringent skew requirements, such as HDMI and DVI. This 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. 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.

Features	Benefits
› DC coupled I/O interfaces for HDMI/DVI TMDS	Lowers system cost by integration of cable equalizer
› Common footprint for M21115 and M21125	Single PCB design supports multiple standards and configurations saving development costs
› Protocol agnostic up to 3.8Gb/s	One device supports multiple applications and data rates
› Programmable per lane input equalization	Backplane (up to 30 inches) or STP cables (up to 10m)
› Fully non-blocking switch matrices	Ultimate flexibility for switching and multicasting signals
› Programmable output de-emphasis to 6db	Improves system jitter budget and drive reach
› Loss of signal (LOS) alarm	Diagnostics for status
› Wide 1.27mm ball pitch	Lower cost PCB design by flexible routing design
› Low power consumption: 3.3W at 2.5V (M21125)	Lower power and thermal management costs
› 2.5V to 3.3V power supply operation	Flexible power supply range
› Out of Band (OOB) signaling support	Allows for seamless integration into PCIe, SATA, and SAS
› 2-wire I <sup>2</sup> C, 4-wire SPI, and parallel interface registers	Flexible and complete control for configuration
› JTAG boundary scan	Improves manufacturing yield for configuration
› Junction temperature sensor	Automatically prevents thermal damages to the device
› Extended temperature operation: -40°C to +85°C	Provides higher tolerance and additional design margin



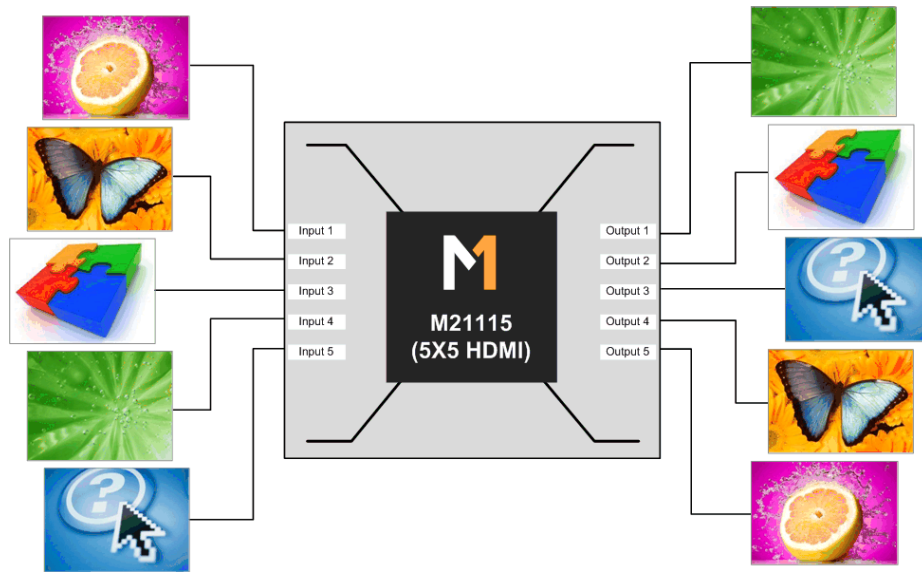


Fig. 1 - M21115 Matrix Application Diagram

## 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

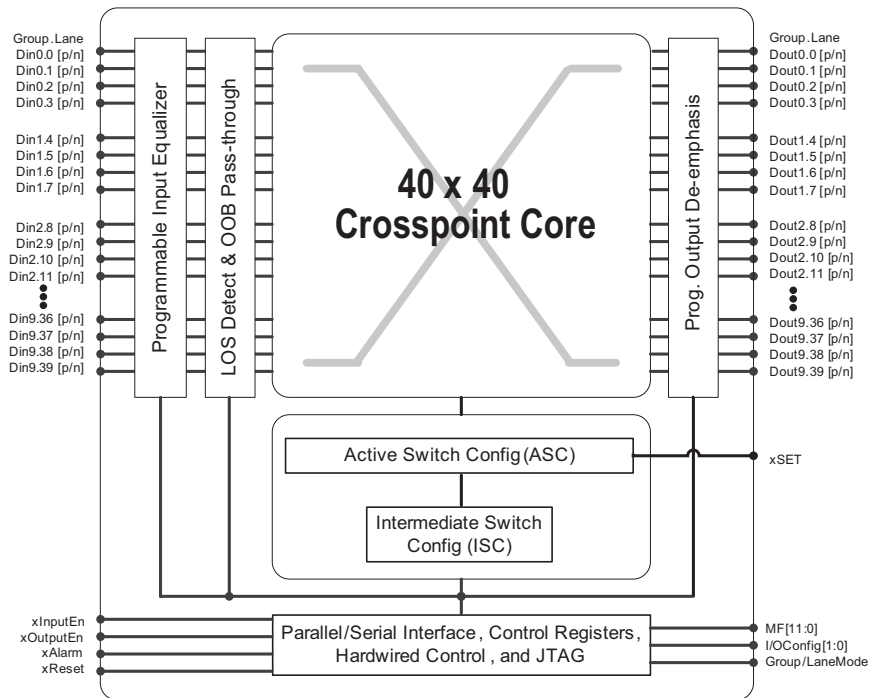


Fig. 2 - M21115/25 Block Diagram

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