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M21145/65 6.5 Gbps 80x80/160x160 Crosspoint Switch

Product Brief

Product Overview

M21145 [6.5 Gbps 80x80] and M21165 [6.5 Gbps 160x160] Crosspoint Switch

The M21145/M21165 are 80x80/160x160 asynchronous fully non-blocking crosspoint switches operating at data rates up to 6.5 Gbps. The M21145/M21165 can be configured either to switch channels as individual lanes (Lane Mode) or in groups of four (Group Mode). The devices include advanced signal conditioning capabilities that enable the transmission of 6.5 Gbps NRZ data over PCB channels that exceed one meter in length. Signal conditioning circuits counter frequency dependent impairments in the channel. Specific device capabilities include individual, per-lane input equalization and output de-emphasis. Configuration of the device is done through a set of register writes using one of the integrated 2-wire serial (I²C compatible) or 4-wire serial digital interfaces.

Features	Benefits
Programmable per lane input equalization up to 23 dB	Allows control in removing deterministic jitter (ISI)
Fully non-blocking array switch matrices	Ultimate flexibility for switching and multicasting signals
Programmable output de-emphasis to 6db	Improves system jitter budget and drive reach
Protocol agnostic	One device supports multiple applications
Support for video pathological patterns	Robust solution for SDI applications
2-wire I²C, 4-wire SPI, and 8-bit data parallel interface registers	Flexible and complete control for configuration
1.2V core power supply operation / 1.2 or 1.8 IO optional	Standard power supply supported
Low power consumption at 11.5W (M21145) and 22.9W (M21165)	Low thermal and power management costs
Individual level loss of signal (LOS) alarm and squelch	Diagnostics for status
JTAG boundary scan	Improves manufacturing yield for configuration
Extended temperature operation: 0°C to 85°C	Provides higher tolerance and additional design margin

Specification	M21145	M21165
Switch Matrix	80x80	160x160
Power at 1.2V (W)	11.5	22.9
Package (mm)	35 mm, 1156 ball FCBGA	45 mm, 1936 ball FCBGA

Fig. 1 – M21145/65 Product Selection Chart

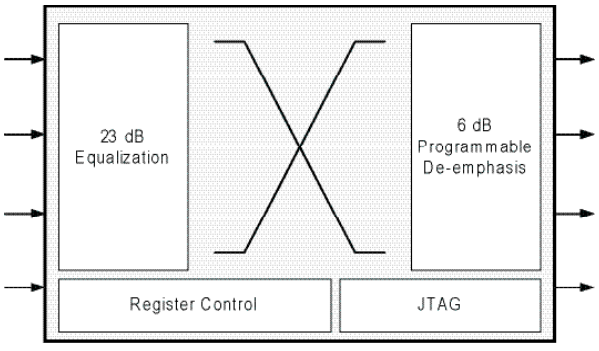


Fig. 2 – M21145/65 Device Architecture

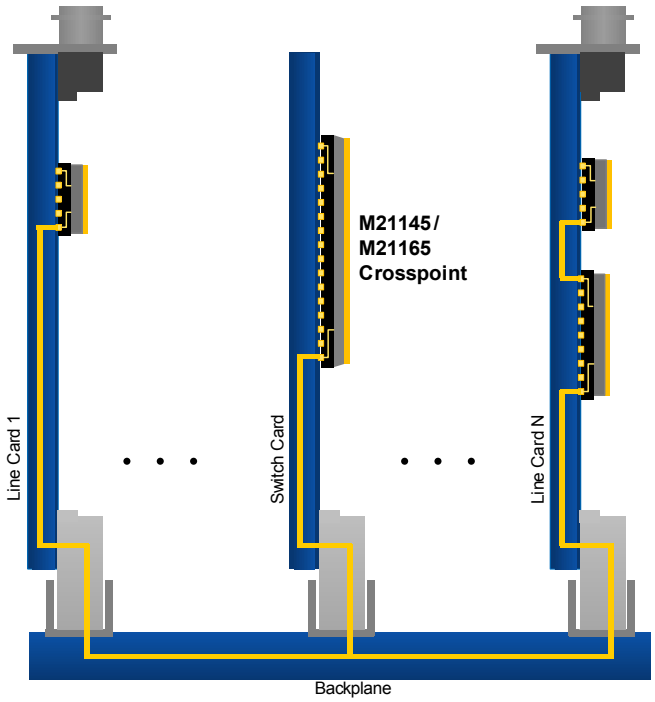


Fig. 3 – Routing Switcher Application Diagram

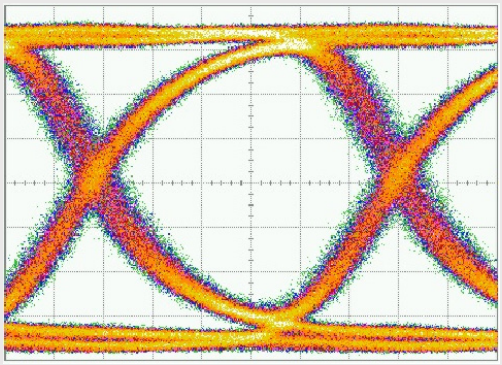


Fig. 4 – 6.5 Gbps Equalized After 40”

Product Features

Applications

- HDMI, DVI, KVM, and Displayport switching equipment
- SMPTE 424M, 292M, 344M, 259M, DVB-ASI (270 Mbps)
- Digital video switchers/routers
- DWDM routers
- Backplane switching and signal conditioning
- SONET/SDH systems and modules
- Fibre channel systems
- Gigabit Ethernet systems
- XAUI systems
- Wireless base-stations

Package (RoHS Compliant)

- M21145: 35 mm, 1156 ball FCBGA
- M21165: 45 mm, 1936 ball FCBGA

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