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M21024

11.88 Gbps 24x24 Asynchronous Crosspoint Switch with Equalizer and De-emphasis

Overview

Documentation

Description

The M21024/M21036/M21048 family of devices is made up of fully non-blocking asynchronous crosspoint switches that operate at all data rates from 100 Mbps to 11.88 Gbps. The three products provide superior signal integrity management capabilities through the switch core and at the IO. Each device receiver is equipped with an analog equalizer that is programmable and designed to equalize over 27 dB of insertion loss at 5.6 GHz. The M21024/M21036/M21048 switch core is equipped with a sophisticated servo that automatically manages the DC offset in each channel in order to minimize jitter caused by duty cycle distortion. The output stages of the device are equipped with individually programmable drivers that operate with up to 10.5 dB of de-emphasis as well as a wide range of output voltage swing levels. Additionally, the products are equipped with features to assist with channel bring-up and performance monitoring. The first of these features is a pattern generator and checker that can be used for pass/fail testing with a variety of test patterns. The second monitoring feature is a jitter measurement tool that enables the system to individually monitor jitter on any channel. Those features can also be used to configure each input equalizer for fully optimized performance. The M21024/M21036/M21048 offers many different control plane interfaces for maximum flexibility. These control interfaces include options for 2-wire and 8-bit parallel bus as well as 4-wire. It is also possible for the device to automatically load a configuration from an external EEPROM.

Features

- 24x24 non-blocking crosspoint switch
- Enables channels up to 40" at 11.3 Gbps data rate
- Data rates from 100 Mbps to 11.3 Gbps
- Integrated Pattern Generator & Checker
- Jitter measurement tool
- Programmable output de-emphasis up to 10.5 dB
- Individual lane LOS (Loss Of Signal) detection and squelch
- Electrical Idle (EI) pass-through for PCIe, SAS, and SATA signaling support)

Ordering Information

Part	Description	Package	Pin Count	Status
M21024-11P	24X24 11.88 GBPS CROSSPOINT SWITCH	FCBGA	396	
M21024EVM	24x24 11.88G crosspoint switch EVM	n/a	n/a	
M21024G-11P	24X24 11.88 GBPS CROSSPOINT SWITCH	FCBGA	396	

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