3.6Gb/s 144x144 Asynchronous Crosspoint Switch

VSC3140

Product Brief

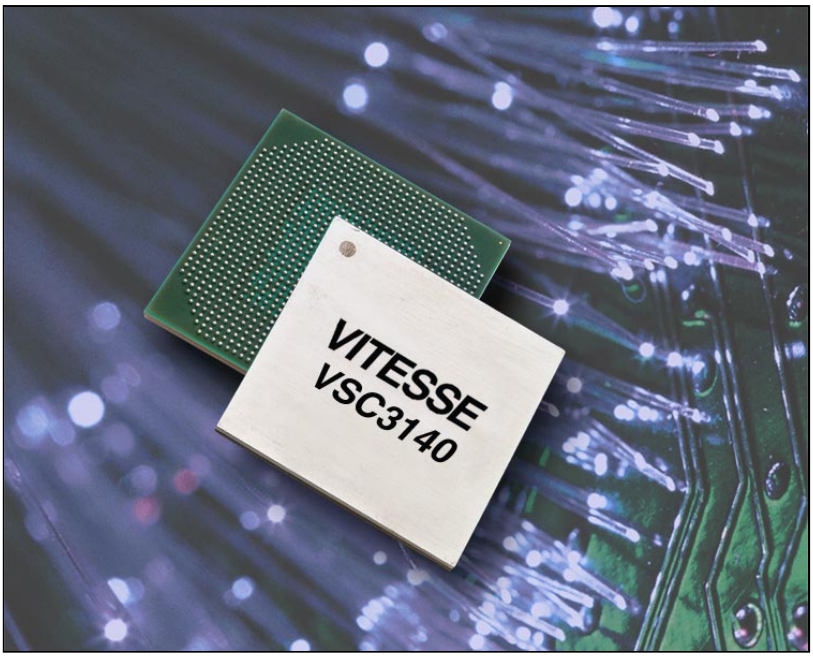
Physical Layer Products

Features:

- Per Channel Programmable Input Equalization
- Per Channel Programmable Output Drive Levels
- On Board PRBS Generator/ Detector
- Parallel and Serial Programming Modes
- Secondary Serial Access Port for Configuration and Monitoring
- Non-blocking Architecture with Broadcast and Multicast Modes
- Soft Power Down for Unused Channels
- Boundary Scan Support for Data I/O
- Integrated Temperature Sensor/Alarm
- On-chip Input and Output Terminations

Benefits:

- 144x144 Inputs and Outputs Allow Creation of 3-stage Clos Switch Fabrics of up to 10368 x 10368 Array Providing up to 37 Terabits of Data Throughput
- Programmable Integrated Signal Equalization (ISE) Function Improves Output Jitter and Multi-pass Performance, Reducing the Need for Inter-stage Retimers in Multi-stage Switch Fabrics



General Description

The VSC3140 is a 144x144 asynchronous crosspoint switch, designed to carry broadband data streams. The fully non-blocking switch core is programmed through a multi-mode port interface that allows random access programming of each input/output port. Each data output can be programmed to connect to one of the 144 inputs. The signal path is unregistered and fully asynchronous, so there are no restrictions on the phase, frequency, or signal pattern on any input. Each high-speed output is a fully differential switched current driver with on-die terminations for maximum signal integrity. A multi-mode, programming interface is provided that allows commands to be sent as serial data or multiplexed parallel data. Unused channels may be powered down to allow efficient use of the switch in applications that require only a subset of the channels. A secondary serial access port allows asynchronous readback and configuration control to take place while the primary programming port is in use.

Applications:

- DWDM Platform
- Core and Edge Router
- Storage Area Network
- Wavelength Routers
- Digital Cross Connect
- Optical Cross Connect

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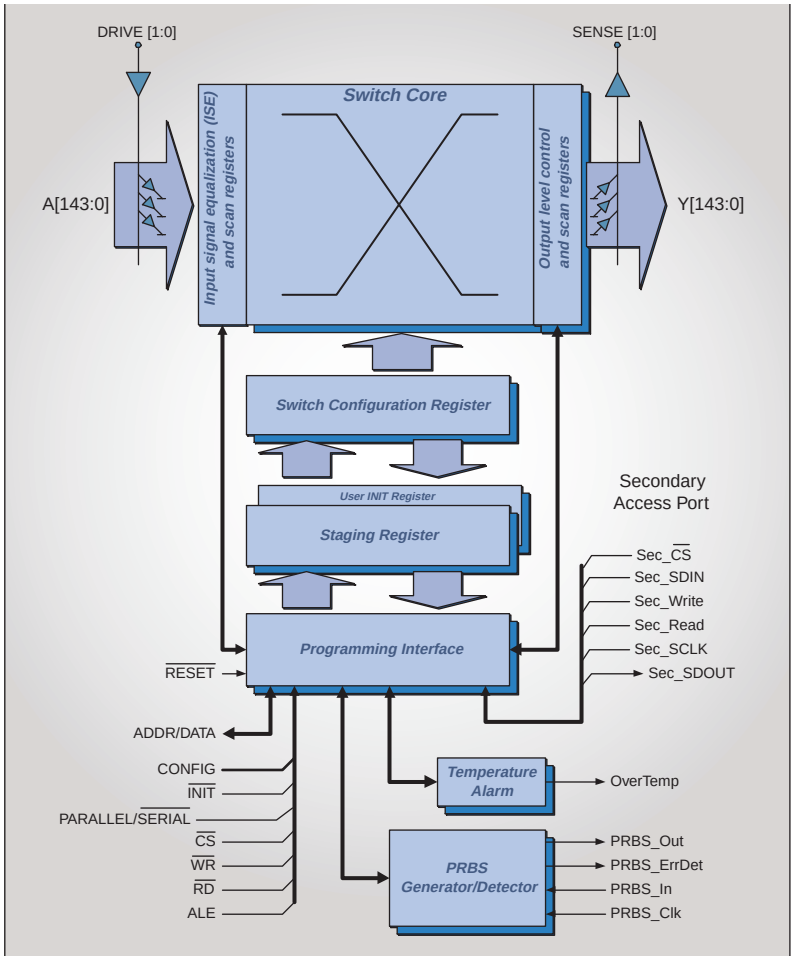
Benefits Continued:

- Programmable ISE and Programmable Output Drive Level on an Individual Channel Basis Allow Users to Optimize the Switch Operation Based on System Requirements
- System Level Features such as Drive/Sense I/O Ports and Boundary Scan Allow in System Diagnostic and Monitoring of each Input and Output for Signal Integrity Through the Entire Switch

Specifications:

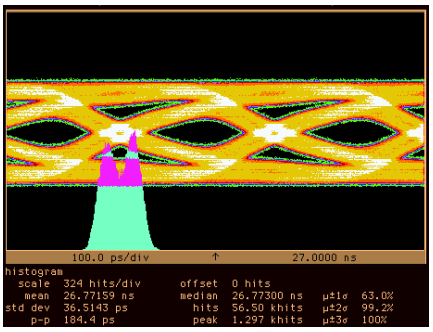
- 3.6Gb/s NRZ Data Bandwidth
- 144 Inputs by 144 Outputs Crosspoint Switch
- Single 2.5V Power Supply
- 2.5/3.3V CMOS/TTL Control I/O
- Differential CML Data Output Driver
- 15/21W Typical Power in Low/High Drive Mode
- 20/25W Max Power in Low/High Drive Mode
- 125MHz Multi-mode Programming Port
- High Performance 45mm, 1.27mm pitch, 1072 BGA Package
- Operating Temperature Range from 0°C to 85°C

VSC3140 Block Diagram

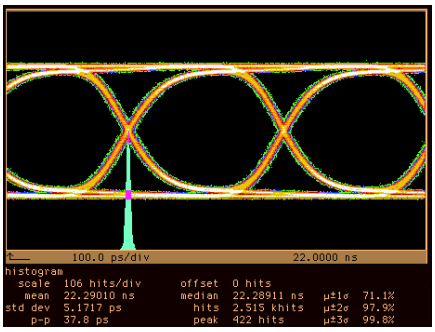


Input Signal Equalization Performance

Input Eye Diagram



Output Eye Diagram



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