DATA INTERCONNECT

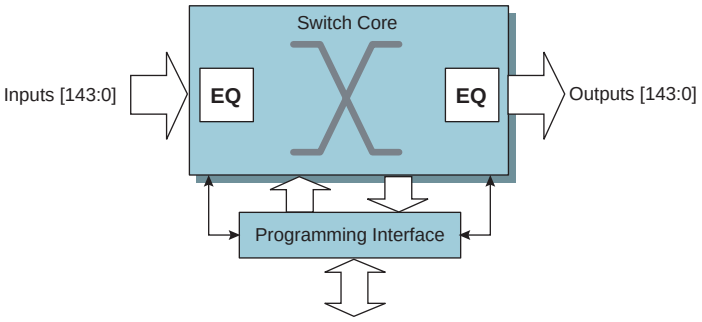
VSC3144

VITESSE®

6.5 Gbps 144 × 144 Asynchronous Crosspoint Switch



BLOCK DIAGRAM:



FEATURES:	BENEFITS:
6.5 Gbps 144 × 144 strictly nonblocking switch matrix with multicast and output striping programming modes	936 Gbps aggregate bandwidth in a single chip for high-density network switching and video systems
Input signal equalization (ISE) with programmable control globally or on a per-channel basis	Addresses system-level and board-level signal integrity (SI) and intersymbol interface (ISI) jitter issues
Adjustable output pre-emphasis EQ	EQ and drive flexibility for driving boards, cables, and circuit traces
Differential current mode logic (CML) data output driver	Convenient I/O flexibility for interfacing with multiple standards
Protocol-independent switching and data transmission	Can be used with latest storage, Ethernet, and networking standards
16 W typical power dissipation	Low per-channel power
45 mm × 45 mm, 1.27 mm pin pitch, 1072-pin BGA package	Layout-friendly package and pinout for easier PCB design
Parallel and serial programming modes for configuration and monitoring	Programming and control convenience
Software control to optimize power dissipation	Control and lower overall power when ports are not in use

APPLICATIONS:

- Core and metro transport
- Enterprise
- High-speed automated test equipment
- Broadcast video systems
- Storage, Ethernet, and networking equipment

VPPD-01551
Revision 1.0

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6.5 Gbps 144 × 144 Asynchronous Crosspoint Switch

GENERAL DESCRIPTION:

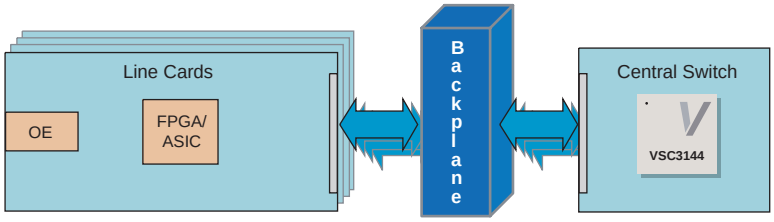


The fully nonblocking switch core of the VSC3144 device is programmed using a multimode port interface that allows random access programming of each I/O port. Each VSC3144 data output can be programmed to connect to any of its inputs. The signal path through the device uses no registers and is fully asynchronous. This means there are no restrictions on the phase, frequency, or signal pattern of any input.

A high degree of signal integrity is maintained throughout the VSC3144 device because each high-speed output is a fully differential, switched-current driver with on-die terminations. Data inputs are terminated on-die using 100 Ω resistors between true and complement inputs, with a common connection to an internal bias source, which facilitates AC coupling to the switch inputs.

Core programming for the VSC3144 device can be sequential on a port-by-port basis, or multiple program assignments can be queued and issued simultaneously using the CONFIG bit. The entire device can be initialized for straight-through, multicast, or other configurations. Unused channels can be powered down to allow efficient use of the switch in applications that require only a subset of the available I/O channels. Power-down is enabled in the software by programming individual unused outputs with a power-down code.

BACKPLANE APPLICATION:



SPECIFICATIONS:

- 6.5 Gbps NRZ per-channel data rate
- 2.5 V power supply (2.5 V or 3.3 V program port power supply)
- 2.5 V or 3.3 V CMOS TTL-compatible I/O
- Differential CML I/O with integrated termination impedance
- 0 °C to 85 °C operating temperature range

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741 Calle Plano
Camarillo, CA 93012, USA
Tel: +1 805.388.3700
Fax: +1 805.987.5896
www.vitesse.com
sales@vitesse.com