Preliminary

Preliminary Product Summary

72 x 72, 2.5Gb/s (STS-48/STS-48c/STM-16) with OC-192 Support SONET/SDH Grooming Switch

GENERAL DESCRIPTION

The VC2002 SONET/SDH Grooming Switch accepts 72 STS-48 input streams and generates 72 STS-48 output streams (or 18 STS-192 streams that have been de-multiplexed 1:4). It allows each STS-1 component of each input stream to be directed to an arbitrary STS-1 slot in an arbitrary output stream. In effect, it is a 3456 x 3456 STS-1 switch. The VC2002 also supports STS-192c mode.

The VC2002 utilizes Velio's high-speed Gigacores (SERializer and DESerializer cores) for its 2.488Gb/s serial I/O signals. The user-selectable features of each GigaCore address Inter-Symbol Interference (ISI), and help ensure signal integrity at multi-gigabit speeds. Most importantly, the integrated 2.488Gb/s Gigacores enable the VC2002 to drive electrical backplanes directly, without the need for external transceivers.

Table 1: VC2002 Features and Benefits

FEATURES	BENEFITS
72x72 STS-48/STS-48c (2.48 Gb/s) or 18x18 STS-192/STS-192c (9.95 Gb/s de-multiplexed 1:4) Cross-Connect	High Bandwidth, Intelligent Switching Capability: 180 Gb/s In, 180 Gb/s Out STS-1 Level Grooming Capability
1.8V Core Voltage Supply	Low Voltage Core reduces power consumption
20W Power Consumption	Reduces overall system power requirements
Cross-Connect Switching at STS-1 Granularity (3456 x 3456)	Strictly non-blocking for unicast traffic Re-arrangeably non-blocking for multicast traffic with fan-out of up to 2 and broadcast
SONET/SDH Input Processing per channel - 2.5 GHz on-chip Clock Recovery/Demultiplexer - Frame detection, byte monitoring	Standard SONET/SDH processing
SONET/SDH Output Processing per channel - 2.5 GHz On-Chip Clock Generation/Multiplexer - Single Byte Insertion within a frame for diagnostics	Standard SONET/SDH processing
CML High-Speed Serial I/O with Programmable Output Voltage Swing	Serial Output Signal can be tailored to specific system conditions on a per-channel basis
Adjustable Pre-Emphasis on Serial Outputs	Reduces Inter-Symbol-Interference, enables serial transmission over longer distances
37.5 mm x 37.5 mm BGA	Thermally enhanced package

APPLICATIONS

- **SONET/SDH Broadband Cross Connect** (STS-48(c)/STS-192(c)/STM-16/STM-48)
- **SONET/SDH Broadband Add/Drop Multiplexer** (STS-48/STS-192/STM-16/STM-64)

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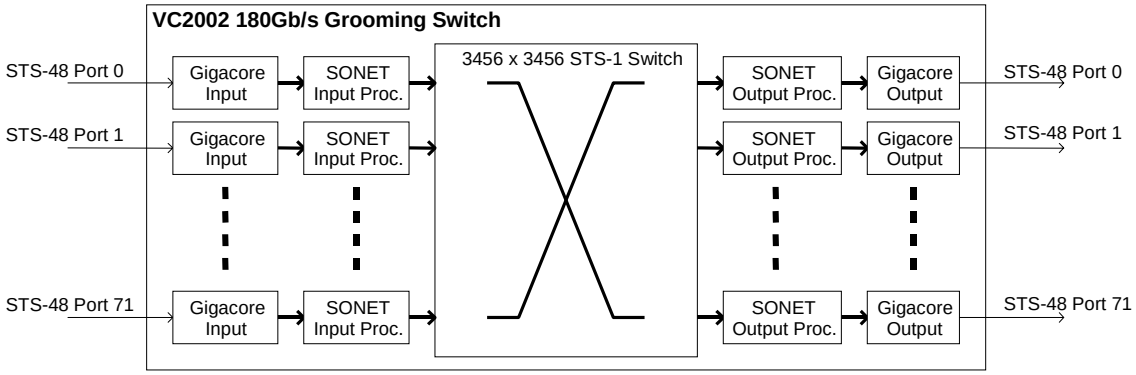

Figure 1: VC2002 Block Diagram

EXAMPLE APPLICATION

Building MultiStage Cross Connects with the VC2002

The VC2002 is non-blocking for unicast, dualcast and broadcast modes and can be configured in multi-stage Clos architectures to enable terabit-class cross connect systems. An example of a multistage Digital Cross Connect system at 256 STS-48 is shown in Figure 2 at right.

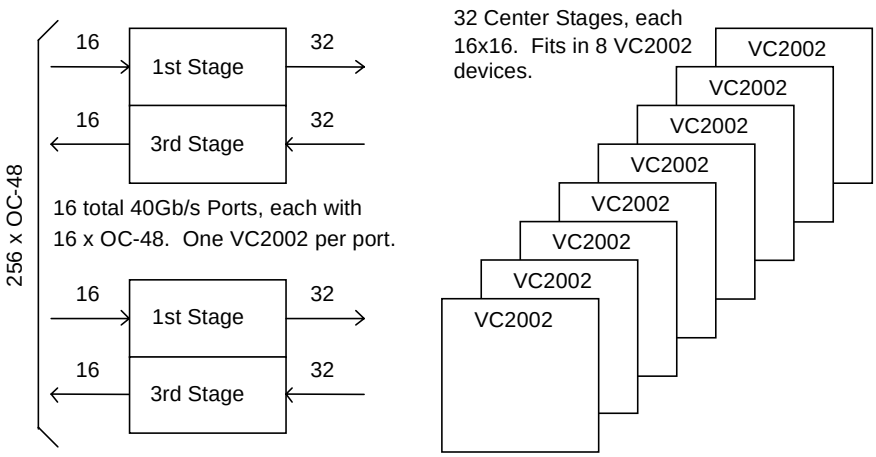

Figure 2: 256 x 256 x OC-48 Clos Network, using VC2002 devices