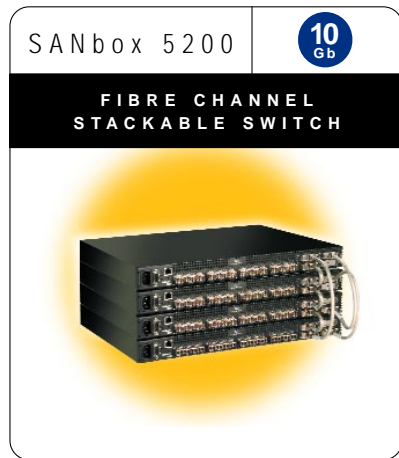




# SANbox<sup>®</sup> 5200

The Industry's First  
Fibre Channel  
Stackable Switch

Stackable  
Switch



The benefits of stackable IP switches are now available for SANs. The SANbox 5200 stackable switch delivers seamless scalability and performance of a chassis switch, in an easy-to-manage, pay-as-you-grow solution. With sixteen 2Gb ports plus a four-pack of high-speed 10Gb ISL ports, and entry as low as 8 ports with 4-port software-keyed increments, and included graphical user interface (GUI) wizards, each 5200 stackable switch provides maximum flexibility for configuring, managing and scaling SANs.



- 8, 12 or 16 auto detecting 2Gb /1Gb device ports with 4-port incremental upgrade with software license available
- (4) 10Gb ports for high-speed stacking links.
- Stacking of up to 4 units for 64 available user ports.
- Non-Disruptive Code Load and Activation (NDCLA)
- Configuration wizard software tool to simplify switch installation and fabric scaling.
- Interoperable with all FC SW-2 compliant Fibre Channel switches
- Full-fabric, public-loop or switch-to-switch connectivity on 2Gb or 1Gb front ports.
- Full-fabric or switch-to-switch connectivity on 10Gb ports
- Auto-sensing, self-configuring ports
- Non-blocking full-bandwidth architecture
- I/O StreamGuard for RSCN suppression
- "No-Wait" routing – guaranteed maximum performance independent of data traffic
- Industry's lowest latency for maximum performance
- SFP (small form pluggable) connectivity – 16 front ports in a 1U full-width rack form-factor
- SANbox Manager™ Open Management System – designed for seamless operation with higher-level third-party management applications
- In-band, out-of-band, Telnet and SNMP management access
- ASIC-embedded memory – faster, more scalable and more reliable than shared memory architecture

**BREAKTHROUGH EASE OF USE.** The first Fibre Channel stackable switches to be configured and zoned with simple wizards. Plus, SANsurfer Management Suite™ makes stack management easy throughout your SAN lifecycle by helping you install, configure, monitor, diagnose and upgrade your QLogic HBAs and switches – all from one application.

**INCREDIBLY LOW COST.** Starting at 8 ports, SANbox 5200 stackable switches offer an entry point affordable to the smallest business. And with an easy-to-use graphical user interface (GUI), you won't have to hire a SAN expert to manage your stack.

**MODULAR SCALABILITY.** Grow by adding ports in 8, 12, and 16-port increments up to 64 ports in a single stack. Of course you can add, change or delete switches without disrupting your storage network.

**PERVASIVE INTEROPERABILITY.** Interoperable with popular servers, storage and networking products from major manufacturers including ADIC, Brocade, Cisco, Computer Associates, Dell, EMC, Emulex, HDS, HP, IBM, LSI, McDATA, Microsoft, Quantum, StorageTek, Sun, VERITAS, and many others.

**BLAZING 10Gb PERFORMANCE.** The first SAN product to support traffic between switches, servers and storage at up to 10Gb per second, six times faster than 2Gb networks being deployed today. A single, 10Gb inter-switch link (ISL) ensures low latency between switches and eliminates the cost and complexity of trunking up to six 2Gb ports.

# SANbox 5200

## TECHNICAL SPECIFICATIONS

## Stackable Switch

10 Gb

### SANbox 5200 Fibre Channel Stackable Switches

- Physical & Signaling Interface Rev. 4.3 (FC-PH)
- Physical & Signaling Interface-2 (FC-PH-2)
- Physical & Signaling Interface-3 (FC-PH-3)
- Fabric Generic Requirements (FC-FG)
- Generic Services (FC-GS)
- Generic Services-2 (FC-GS-2)
- Generic Services-3 (FC-GS-3)
- Switch Fabric (FC-SW-2)
- Arbitrated Loop Rev. 4.6 (FC-AL)
- Arbitrated Loop-2 Rev. 7(FC-AL-2)
- Fibre Loop Attachment (FC-FLA)
- Tape Technical Report (FC-Tape)
- Virtual Interface Architecture Mapping (FC-VI)
- Element MIB Specification
- Fibre Alliance MIB Specification

#### Fibre Channel Classes of Service

- Classes 2, 3 connectionless

#### Modes of Operation

- Fabric
- Public loop

#### Performance Features

##### Fabric Port Speed

- 2 Gb/s, Full-Duplex, auto-negotiating for compatibility with existing 1Gb devices
- 10 Gb/s, Full-Duplex,

##### Fabric Latency

- Less than 0.4  $\mu$ s (best case, no contention)
- Cut-through routing

##### Fabric Point-to-Point Bandwidth

- 412 MB/s Full-Duplex on 2 Gb ports
- 2400+ MB/s Full-Duplex on 10Gb ports

##### Fabric Aggregate Bandwidth

- Single chassis: Up to 144 Gb/s (full-duplex) end-to-end
- Non-blocking architecture

##### Maximum Frame Sizes

- 2148 bytes (2112 byte payload)

##### Per-port Buffering

- ASIC-embedded memory (non-shared)
- Each port has a guaranteed 16-credit zero wait state buffer for full performance up to 10km @ 2Gb and 2.5Km @ 10Gb

#### Scalability

##### Ports Per Chassis

- (8 to 16) 2Gb / 1Gb ports upgradeable in 4-port increments
- (4) 10Gb XPAK MSA-compliant ports

##### Multi Switch Fabrics

- Supports all topologies, including: stack, cascade, cascaded loop, mesh and Multi-stage™ with E\_Port
- Supports multiple links between switches
- In-order delivery of frames in all Multi-switch and multi-link configurations

#### Fabric Port Types

- All ports can assume the following states:
  - F\_port: Fabric
  - FL\_port: Fabric loop (public loop)
  - E\_port: Switch-to-switch
- Ports are auto-discovering, self-configuring

#### Media Type

- Hot-pluggable, industry-standard SFPs (Small Form Pluggable) for 2Gb and 1Gb ports
- Hot-pluggable, industry-standard XPAK cables for 10Gb ports

#### Supported SFP Types

- Shortwave (optical)
- Longwave (optical)

#### Media Transmission Ranges (2Gb Ports)

- Optical
- Shortwave: 500 m (1,640 ft.)
- Longwave: 10 km (6.2 mi.)

#### Cable Types (2Gb Ports)

- 50/62.5 micron multimode fiber optic
- 9 micron single-mode fiber optic

#### Interoperability

- Compatible with FC-SW-2 compliant switches
- Management interoperability with leading SAN management applications

#### Fabric Management

##### Management Processor

- Pentium class Processor

##### Management Methods

- SANbox Manager management tools (standard and private brand versions)
- SNMP, Telnet, GS-3

##### Access Methods

- In-band
- Ethernet 10/100 BaseT with RJ45

##### Diagnostics

- Power-up self-test of all functionality except media modules
- Field-selectable full self-test including media modules

##### Fabric Services

- Simple Name Server
- Fabric Zoning
  - Hardware-based
  - Access Control List (port)
  - Name Server (WWN)
  - Orphan Zoning
  - All zoning assigned on per-node basis, even across Multi-stage fabrics
- Registered State Change Notification (RSCN)
- I/O StreamGuard
- Multi-chassis in-order delivery
- Automatic path selection in Multi-stage configurations

##### User Interface

- LED indicators, command console, and web-based utilities

#### Mechanical

##### Enclosure Types and Options

- Secure stacking with rubber feet or rack mounting brackets (both included)
- Optional rail mounting kit.

##### Dimensions

- Width: 432 mm (17") 19" rack mountable
- Height: 43.2 mm (1.70") (1U)
- Depth: 305 mm (12")

##### Weight

- 4.08 kg (9 lbs)

##### Power Supply/Cooling

- Integral Power Supply with industry-standard IEC connector
- Orderable front-to-back or back-to-front air pattern

#### Environmental

##### Operating

- Temperature: +5C to +40°C (41 to 104°F)
- Humidity: 15% to 80% non-condensing
- Altitude: 0 to +10,000 feet
- Vibration: IEC 68-2 5-500 Hz, random, 0.21 G rms, 10 minutes IEC 68-2 4g, 11ms, 20 repetitions
- Shock: IEC 68-2 30g, 292 ips, 3 repetitions, 3 axis

##### Non-Operating

- Temperature: -40°C to +70°C (-40 to 158 °F)
- Humidity: 25% to 90% non-condensing
- Altitude: 0 to +50,000 feet
- Vibration: IEC 68-2 5 to 500 Hz, random, 2.09 G rms, 10 minutes IEC 68-2 30g, 292 ips, 3 repetitions, 3 axis

#### Electrical

##### Operating Voltage

- 100-240V

##### Power Source Loading

- 140VA

##### Heat Output

- 100W maximum (with full-optics configuration)

#### Regulatory

##### Safety Standards:

- UL 60950 (USA)
- CSA 22.2 No.60950 (Canada)
- EN60950 (EC)
- CB Scheme-IEC 60950

##### Harmonics

- EN 61000-3-2

##### Immunity

- EN 55024:1998

##### Marking

- UL (United States)
- cUL (Canada)
- TÜV
- VCCI
- CE

##### Emissions Standards

- FCC Part 15B Class A (USA)
- VCCI Class A ITE (Japan)
- ICES-03 Issue 3 (Canada)
- EN55022 Level A (EC)

##### Voltage Fluctuations

- EN 61000-3-3

For a list of authorized resellers, visit [www.qlogic.com/buyqlogic/home\\_buy.asp](http://www.qlogic.com/buyqlogic/home_buy.asp)



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