NEXIO Volt™

Compact Transmission Server for Storage Area Networks

The NEXIO Volt™ baseband video server answers the call for improved space savings and lower operating costs while maintaining the highest levels of resilience and reliability. A new addition to the NEXIO® product family, NEXIO Volt offers support for up to four mixed HD/SD or SD-only baseband channels in a 1RU package.

Built on the same platform as the award-winning NEXIO AMP® advanced media platform, NEXIO Volt is designed for use with NEXIO true shared storage, a modular and scalable system that makes it easy to add channels and storage as a broadcaster's requirements change. Multiple NEXIO Volt servers can be attached to a NEXIO shared storage system, enabling systems with hundreds of channels and integration with other NEXIO baseband servers, editors and gateways.

Environmental considerations are an essential part of the NEXIO Volt design. New high-performance, low-power processors reduce power consumption. Available solid-state boot drives offer additional energy efficiency — and extend system duty cycle. A strong industrial design concept enhances structural integrity and reduces weight, while reducing materials and coatings used in manufacturing.

FEATURES

- Up to four HD/SD or SD-only channels in a 1RU platform
- Ingest and playback of HD (1080i, 720p) and SD (525i/625i) content on the same chassis
- Direct access to the NEXIO shared storage
- Fault tolerance through dual hot-swappable power supplies, dual mirrored boot drives and RAIDsoft™ software RAID management system
- Intrinsic Mirroring™ support for complete NEXIO shared storage redundancy
- Agile, integrated software codecs, supporting a wide range of formats
- Software-based up/down/cross conversion with aspect ratio conversion and SMPTE 2016 and ATSC TSG-814 AFD support
- Dolby® Digital and Dolby® E passthrough
- Support for a wide range of automation, archiving and media management applications

PRODUCT DETAILS

Remote monitoring and system management are easily enabled as standard via SNMP, and includes support for NEXIO® Navigator™ remote diagnostics and management. Support for headless operation means a display, keyboard and mouse need not be connected to set up and manage system hardware. Channel control is supported using the industry-standard VDCP protocol and via NEXIO native protocol over Ethernet. The NEXIO Volt server responds in exactly the same way as the proven NEXIO AMP server, resulting in straightforward integration with existing automation systems.

High-Performance Technology

MediaCore™ Engine

MediaCore™ is a high-performance, 64-bit software engine that controls all low-level NEXIO Volt functionality. This multistream module manages real-time transactions and system status updates, as well as RAIDsoft™, the NEXIO software RAID and disk storage management system. MediaCore employs taskspecific, multi-core CPU/FPGA processing to effortlessly handle all baseband video I/O. The result is real-time, high-bit-rate coding and decoding that enables NEXIO Volt to ingest and play out up to four channels simultaneously. The module can be controlled via the NEXIO suite of software applications, and third-party automation and control panels.

RAIDsoft Storage Protection

NEXIO Volt runs the Harris-patented and Emmy® award-winning RAIDsoft software RAID management system, which allows all channels and network ports to simultaneously access content without restriction.

RAIDsoft provides three methods for safeguarding stored media in each volume: RAID 3, for protection against single-drive failures per volume; error correction code (ECC) parity, which guards against two simultaneous drive failures per volume; and Intrinsic Mirroring™, which simultaneously writes all data to two NEXIO shared storage systems to provide complete data protection.

The intelligent RAIDsoft system keeps cached copies of the file allocation table (FAT) in RAM and on disk, adding exceptional system resiliency. This approach also translates to fast searching for content and assured access to metadata, whether requested via VDCP serial or Ethernet control.

Channel Configurations

A range of channel configurations is supported to enable the mix of ingest and playout ports that best match a broadcaster's needs. Software is used to define each port's capabilities, and configuration changes are made with a user-friendly software wizard.

Codec Support

Agile, integrated software codecs allow NEXIO Volt to support a wide range of formats. Available codecs and data rates for different channel counts and SD and HD resolutions are shown below:

Shared Storage Connectivity

NEXIO Volt connects to the NEXIO shared storage via Gigabit Ethernet and enjoys the same level of content sharing as all other NEXIO servers — instant access to all content, all the time, by all users, without restrictions.

Performance Enhancement

Add any of the following optional media applications to boost the performance of your NEXIO Volt server:

NEXIO® Remote™

Take control of server channels using NEXIO Remote, an application that provides control of any six NEXIO server channels on a NEXIO shared storage system over a standard LAN connection. The application also supports NEXIO® ClipSync™ and Delay™.

NEXIO® Playlist™

NEXIO Playlist is an event-sequencing application that can be used for play-to-air operations such as commercial insertion, time-of-day events, moving backgrounds and more. NEXIO Playlist runs on standard PC hardware over a standard LAN connection.

NEXIO® ClipSync™

Use NEXIO ClipSync to play two clips in sync for key-plus-fill and similar applications when the two elements exist as separate clips.

NEXIO® Delay™

Use NEXIO Delay to apply a delay to your air channel for safety in live-to-air transmissions, or for time zone-specific playback delay.

NEXIO Navigator

Identify potential problems before they impact your on-air product with NEXIO Navigator, an SNMP-based application that supports remote monitoring and diagnostics of NEXIO servers and network-attached devices.

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SPECIFICATIONS

Specifications are subject to change without notice.

System Configuration

Mainframe	2 quad-core AMD Opteron™ 64-bit processors
	PCIe platform
	16 GB RAM
	Dual mirrored SATA boot drives
	Optional dual mirrored SSD boot drives
	Two 10/100/1000Base-T Ethernet ports
	VGA monitor interface
	4 USB 2.0 ports (2 front, 2 rear)
	PS/2 keyboard and mouse ports
	Windows® XP Professional x64 Edition

Video Formats

SD	525 @ 29.97 f/s, 625 @ 25 f/s
HD	1080i @ 29.97 f/s and 25 f/s
	720p @ 59.94 f/s and 50 f/s

Channel Configurations

SD	2 bidirectional channels
	2 bidirectional + 2 play-only channels
	No up/down/cross conversion support
HD or Mixed HD/SD	2 bidirectional channels
	1 ingest-only + 2 play-only channels
	3 play-only channels
	2 ingest-only + 2 play-only channels
	1 ingest-only + 3 play-only channels
	4 play-only channels
	Some features may not be supported in all configurations; consult your sales representative for details

Inputs

SD	2 SDI, BNC (SMPTE 259M)
HD or Mixed HD/SD	2 SDI, BNC (SMPTE 292M)

Genlock Reference

SD	Bi-level sync support
HD	Bi-level or tri-level sync support

Outputs

SD	4 SDI, BNC (SMPTE 259M)
	2 SDI, active loop-throughs
HD or Mixed HD/SD	4 (optional) HD-SDI BNC (SMPTE 292M)
	2 HD/SD-SDI active loop-throughs

Aspect Ratio

HD	16:9
SD	16:9, 4:3
Aspect Ratio Conversion	Up/down/cross conversion support with EIA-608<>708 caption conversion
	AFD support insert/override embedded AFD metadata on a per-ID or per-port basis
	SMPTE 2016 and ATSC TSG-814

Storage

Options	8 or 16 drives per chassis up to 192 drives (300 GB or 600 GB) per NEXIO shared storage system
	Up to 384 drives (300 GB or 600 GB) per NEXIO shared storage system using Intrinsic Mirroring
Interface	Dual-port, redundant Ethernet via NEXIO Media
	Host system architecture

Audio

Channels and Formats	8 pairs embedded per video I/O channel (4 pairs if using 24-bit PCM on SD video)
Inputs	BNC (embedded)
Outputs	BNC (embedded)
Processing and Storage	16-, 20- or 24-bit PCM, 48 kHz
Compressed Audio	Dolby® Digital (AC-3) and Dolby® E passthrough

SD Encoding/Decoding

MPEG-2 I-frame	4:2:0 (4 to 15 Mb/s), 4:2:2 (10 to 50 Mb/s)
MPEG-2 long-GOP	4:2:0 (4 to 15 Mb/s), 4:2:2 (10 to 50 Mb/s)
	IMX 30, 40 and 50
	DVCPRO25 (625 only), DVCPRO50
	DVCAM (625 only)

HD Encoding/Decoding

MPEG-2 I-frame	4:2:0 (50, 80 and 100 Mb/s)
	4:2:2 (50, 70, 80, 100, 120 and 150 Mb/s)
MPEG-2 long-GOP	4:2:0 (50, 60, 70 and 80 Mb/s)
	4:2:2 (50, 70 and 80 Mb/s)
	XDCAM HD 35 and 50 Mb/s
	XDCAM EX 35 Mb/sDVCPRO HD 100 Mb/s

RAID Redundancy

Controller	RAIDsoft software RAID management system
	RAID Protection Scheme RAID 3 (single-drive parity, single-drive failure protection)
	ECC (multiple-drive parity, dual-drive failure protection)
	Support for Intrinsic Mirroring (fully redundant NEXIO shared storage systems)

Timecode Support

Input/Output	RS-232, TCP/IP, Harris clock interface
	Read, generate and write VITC, including discontinuities

Remote Serial Interface

Input/Output	4 RS-422 ports, RJ12 connector

Control

Input/Output	RS-422
	TCP/IP socket or UDP over Ethernet
Protocols	NEXIO native protocol, VDCP, Sony® 9-pin

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Physical

Dimensions (H x W x D) . . . . . 1.75 x 19 x 26.25 in (4.4 x 48.3 x 66.7 cm)
Weight . . . . . 27 lbs (12.3 kg)

Power

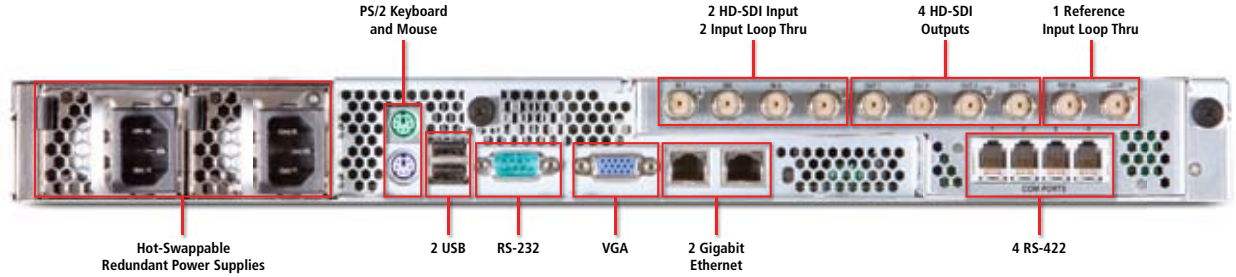
Power Supply. . . . . Dual hot-swappable, dual load-sharing
Voltage 115 to 240 VAC
Current 8 to 4 A
Frequency 60 to 50 Hz
Total DC Output . . . . . 650 W
Idle Consumption. . . . . 144 W @ 240 V, 156 W @ 120 V
Peak Consumption. . . . . 264 W @ 240 V, 296 W @ 120 V

Environmental

Operating Temperature. . . . . 50° to 104° F (10° to 40° C)
Non-operating Temperature . . . . . -40° to 140° F (-40° to 60° C)
Operating Relative Humidity . . . . . 20% to 85% from 23° to 104° F (-5° to 40° C)
Non-operating Relative Humidity . . 10% to 80% from -22° to 140° F (-30° to 60° C)
Operating Altitude . . . . . 10,000 ft (3,048 m) @ 77° F (25° C)

IMAGES/DIAGRAMS

NEXIO Volt Rear Diagram



ORDERING INFORMATION

NXVOLT1401HDX. . . . . NEXIO Volt 1RU HD/SD shared storage server, 3-channel HD/SD or 4-channel SD-only
NXVOLT1401HDX 2S . . . . . NEXIO Volt 1RU HD/SD shared storage server, 2-channel SD-only
NXVOLT1401HDX4S. . . . . NEXIO Volt 1RU HD/SD shared storage server, 4-channel SD-only
NXVOLT1401HDX2H . . . . . NEXIO Volt 1RU HD/SD shared storage server, 2-channel HD/SD or 4-channel SD-only
NXVOLT1401HDX3H . . . . . NEXIO Volt 1RU HD/SD shared storage server, 3-channel HD/SD or 4-channel SD-only
NXVOLT1401HDX4H . . . . . NEXIO Volt 1RU HD/SD shared storage server, 4-channel HD/SD or 4-channel SD-only
NXAUPHD1 . . . . . Software only – add 1 HD channel, for NXVOLT1401HDX, NXVOLT1401HDX2H and NXVOLT1401HDX3H
NXAUPSD2 . . . . . Software only – add 2 SD channels, for NXVOLT1401HDX2S
NXVOLTSSDB2. . . . . 2 mirrored SSD boot drives for NEXIO Volt shared storage server
NXVOLTSPSU. . . . . Spare power supply module for NEXIO Volt shared storage server
NXVOLTHDXSLCD . . . . . Replacement front panel including LCD panel for NEXIO Volt shared storage server
NXVOLT1401SIO . . . . . Spare baseband video I/O card assembly for NEXIO Volt shared storage server
NXVOLT-HDX-BASIC. . . . . 1-year Basic ServicePAK for NEXIO Volt
NXVOLT-HDX-GOLD . . . . . 1-year Gold ServicePAK for NEXIO Volt