

NEXIO Volt[™]

Baseband Video Server



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 SD/HD 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 the NEXIO true shared storage SAN, 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 SAN, 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 manufacture.

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 same way as the proven NEXIO AMP server, resulting in straightforward integration with existing automation systems.

FEATURES

- Up to 4 HD/SD or SD-only channels in a 1RU platform
- Ingest and playback of SD (525i/625i) and HD (1080i, 720p) content on the same chassis
- Direct access to the NEXIO SAN
- Fault tolerance through dual hot-swappable power supplies, dual mirrored boot drives and RAIDsoft software RAID management system
- Intrinsic Mirroring support for complete SAN 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

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 task-specific, multicore 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 SANs 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.

	SD Channels Enabled	HD Channels Enabled
2 Channels	2 bidirectional	2 bidirectional
3 Channels	Not available	1 record + 2 play 0 record + 3 play
4 Channels*	2 bidirectional + 2 play	2 record + 2 play 1 record + 3 play 0 record + 4 play

* Optional 4th HD channel enabled by software license key.

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:

	2 Channels	3 Channels	4 Channels
HD Codecs	MPEG-2 up to 150 Mb/s	MPEG-2 up to 100 Mb/s	MPEG-2 up to 50 Mb/s
	XDCAM HD 35 Mb/s		
	XDCAM HD422 50 Mb/s		
	XDCAM EX 35 Mb/s		
SD Codecs	DVCPRO HD		
	MPEG-2 up to 50 Mb/s		
	DVCPRO25		
	DVCPRO50		
	XDCAM (IMX 30/40/50)		

SAN Connectivity

NEXIO Volt connects to the NEXIO SAN 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 SAN 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™

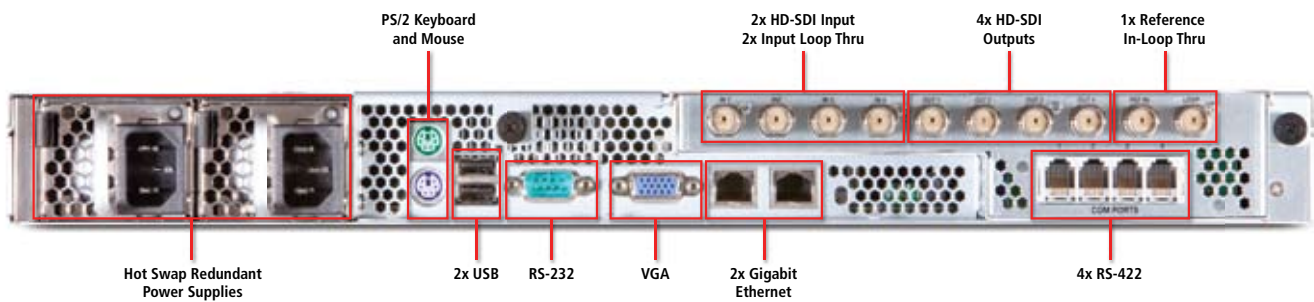
Use NEXIO Delay™ to apply a delay to your air channel for safety in live-to-air transmissions, or for time zone-specific playback delay.

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.



NEXIO Volt Front View



NEXIO Volt Rear View

Specifications

Specifications are subject to change without notice.

System Configuration

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

Standard Channel Configurations

SD	Two bidirectional + two play-only channels No up/down/cross conversion support
HD or Mixed HD/SD	Two bidirectional channels One ingest-only + two play-only channels Three play-only channels Up/down/cross conversion support

Optional Channel Configurations

HD or Mixed HD/SD	Two ingest-only + two play-only channels One ingest-only + three play-only channels Four play-only channels Some features may not be supported in optional configurations; consult your sales representative for details
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Inputs

SD	Two SDI BNC (SMPTE 259M)
HD or Mixed HD/SD	One/two (optional) SDI BNC (SMPTE 292M)

Genlock Reference

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

Outputs

SD	Four SDI BNC (SMPTE 259M) Two SDI active loop-throughs
HD or Mixed HD/SD	Three/four (optional) HD-SDI BNC (SMPTE 292M) Two SD/HD-SDI active loop-through

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	Eight or 16 drives per chassis up to 192 drives (146 GB, 300 GB or 450 GB) per SAN Up to 384 drives (146 GB, 300 GB or 450 GB) per SAN using Intrinsic Mirroring
Interface	Dual-port, redundant Ethernet via NEXIO Media Host system architecture

Audio

Channels and Formats	Eight pairs embedded per video I/O channel (four 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 (4-15 Mb/s), 4:2:2 (10-50 Mb/s)
MPEG-2 long-GOP	4:2:0 (4-15 Mb/s), 4:2:2 (10-50 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/s
DVCPRO 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 SANs)

Timecode Support

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

Input/Output	Four RS-422 ports, RJ-12 connector
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Control

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

Physical Characteristics

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 V AC
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

For more information, please visit www.broadcast.harris.com/nexio.

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