

## Nexio Volt™

Compact Integrated and Shared Storage Transmission Server

The Nexio Volt™ integrated media server addresses the need for a small form-factor, high-performance baseband video server. It delivers up to 4 bidirectional SD/HD channels in a 1RU package with lower operating costs and high levels of resilience and reliability.

The Nexio Volt server is designed for use in various digital media applications. 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.

Nexio Volt is ready to grow with your needs, with features including on-board Gigabit Ethernet, optional fault-tolerant Fibre Channel interconnects to access storage and support for AVC-Intra playout with the optional advanced codec processor module. Whether used with integrated storage or shared storage, the Nexio Volt platform works seamlessly with the award-winning Nexio suite of media applications for ingest and playout of high-quality channels in your environment.

### Product Features

- Up to 4 SD/HD channels with 4-input/4-output SDI/HD-SDI interface card
- 3 Gb/s 1080p support over a single link (SMPTE 424M)
- Fault-tolerant and redundant system for critical functions: power, Ethernet, storage and more
- 4 input and 4 output SDI interface card supporting both SD and HD formats
- Variety of software licensed configurations from 2 to 8 SD channels or 1 to 4 SD/HD channels
- Fault-tolerant and redundant system for critical functions: power, Ethernet, storage and more
- Ingest and playback of SD (525i/625i) and HD (1080i, 1080p, 720p) content on the same chassis
- Up/down/cross conversion with aspect ratio conversion (SMPTE 2016 and ATSC TSG-814 AFD support)
- HD-BNC to save 50% space as compared to traditional connectors
- 3 Gb/s 1080p support over a single link (SMPTE 424M)
- 8TB internal storage option available for standalone operation
- RAID3 or RAID6 internal storage protection with RAIDsoft™ management software
- Direct access to Nexio shared storage via dual redundant Gigabit Ethernet ports and when using the Nexio Media Host system architecture
- Direct fibre channel access to Nexio shared storage when equipped with the optional dual redundant Fibre Channel ports
- Supports patented Intrinsic Mirroring for complete Nexio shared storage redundancy
- Agile, integrated software codecs, supporting a wide range of standard formats
- Dolby Digital® and Dolby E® pass-through
- Optional baseband ingest and playout support for Avid Technologies native editing codec, DNxHD
- Optional baseband playout support for AVC Intra codecs (record is standard)



- Optional baseband playout support for the popular H264 codec
- Optional and simultaneous creation of low-res proxy when recording HD/SD video, up to 4 HD input channels
- Support for a wide range of automation, archiving and media management applications
- Fault tolerance through dual hot-swappable power supplies and optional mirrored SSD boot drives

## Product Details

### MediaCore™ Engine

MediaCore™ is a high-performance, 64-bit software engine that controls all low-level Nexio Volt functionality. This multi-stream 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, 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 Imagine Communications-patented and Emmy® Award-winning RAIDsoft software RAID management system, which allows all channels and network ports to simultaneously access content without restriction. Nexio Volt supports RAIDsoft RAID-3, RAID-6, ECC and patented Intrinsic Mirroring schemes for protection against drive failures. The intelligent RAIDsoft system keeps a cached copy of the frame allocation table (FAT) in RAM and redundant copies on disk, providing 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.

### Remote Management

Remote monitoring and system management are easily enabled as standard via SNMP, and support for Magellan NMS remote diagnostics and management is included. Since Nexio Volt offers support for headless operation, a display, keyboard and mouse need not be connected to set up and manage system hardware. Nexio Volt supports management using IPMI for remote software KVM access and control. It also supports the Magellan Log Server for application logging and diagnosis.

Channel control is supported via 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.

### Channel Configurations

Nexio Volt supports 1-, 2-, 3-, and 4- channel operating modes. The available modes will depend on the licensing applied to the server via the Nexio Software License Key (SLK). The following table lists all the standard modes:

	SD Channels Enabled	HD Channels Enabled
NXVOLTHD1	2 Bidirectional (2B+0P)	1 Bidirectional (1B+0P)
NXVOLTHD2	4 Bidirectional (4B+0P)	2 Bidirectional (2B+0P)
NXVOLTHD3	4 Bidirectional (4B+0P) 2 Record + 4 Play (2R+4P)	3 Bidirectional (3B+0P)
NXVOLTHD4	4 Bidirectional (4B+0P) 4 Record + 4 Play (4R+4P)	4 Bidirectional (4B+0P) 0 Record + 4 Play (0R+4P)

**Codec Support**

Nexio Volt supports the same codecs as Nexio AMP. Available codecs and data rates for the different channel counts are shown in the table below for SD and HD resolutions. Some channel configurations are restricted by codec or Ethernet shared storage. Contact your salesperson for details.

	2 Channels	3 Channels	4 Channels
HD Codec	MPEG-2 up to 300 Mb/s	MPEG-2 up to 150 Mb/s	MPEG-2 up to 150 Mb/s
	XDCAM HD 35 Mb/s	XDCAM HD 35 Mb/s	XDCAM HD 35 Mb/s
	XDCAM HD422 50 Mb/s	XDCAM HD422 50 Mb/s	XDCAM HD422 50 Mb/s
	XDCAM EX 35 Mb/s	XDCAM EX 35 Mb/s	XDCAM EX 35 Mb/s
	VCPRO HD DNxHD (optional) AVC-Intra (optional) H.264 (optional – play only)	DVCPRO HD DNxHD (optional) AVC-Intra (optional) H.264 (optional – play only)	DVCPRO HD DNxHD (optional) AVC-Intra (optional) H.264 (optional – play only)
SD Codec	MPEG-2 up to 50 Mb/s	MPEG-2 up to 50 Mb/s	MPEG-2 up to 50 Mb/s
	DVCPRO25	SDVCPRO25	DVCPRO25
	DVCPRO50	DVCPRO50	DVCPRO50
	XDCAM (IMX 30/40/50) H.264 (optional – play only)	XDCAM (IMX 30/40/50) H.264 (optional – play only)	XDCAM (IMX 30/40/50) H.264 (optional – play only)

Nexio Volt enhances the ingest density for production applications with support for 3 Gb/s 1080p support.

1080p Support	Channels	Codec and Bitrates Supported
NXVOLTHD1	1 HD/SDI	MPEG2 I-frame 50-150
NXVOLTHD2	2 HD/SDI	Mb/s
NXVOLTHD3	2 HD/SDI	MPEG2 Long-GOP 25-100
NXVOLTHD4	2 HD/SDI	Mb/s

**Shared Storage Connectivity**

Nexio Volt connects as standard to the Nexio shared storage via redundant 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. The optional Fibre Channel (FC) interface enables direct access to Nexio shared storage.

**SUITE OF MEDIA APPLICATIONS**

Boost the performance of the Nexio Volt server with optional media applications:

**Nexio Remote**

Nexio Remote is an application that provides control of any eight Nexio server channels in a Nexio system using a standard PC over a standard LAN connection.

**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**

Nexio ClipSync is an optional application that allows Nexio Volt to play two clips in sync for key-plus-fill and similar applications when the two elements exist as separate clips.

**Nexio Delay**

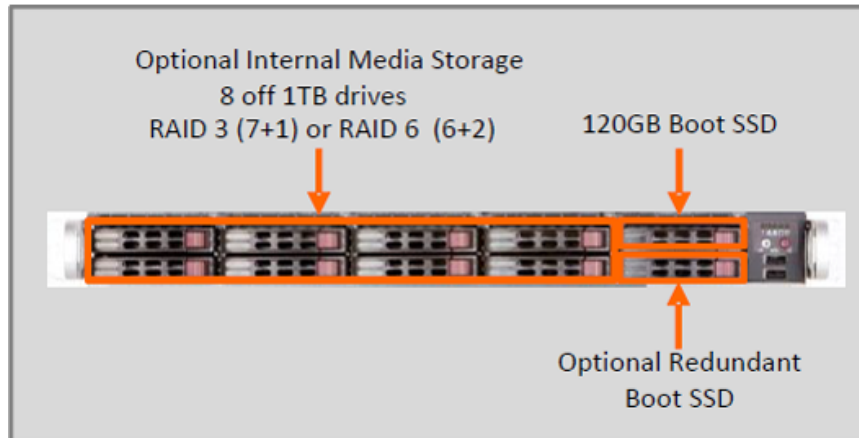
Nexio Delay is an optional application that applies a delay to an air channel for safety in live-to-air transmissions, or for time zone-specific playback delay.

**Nexio AMP Track Router**

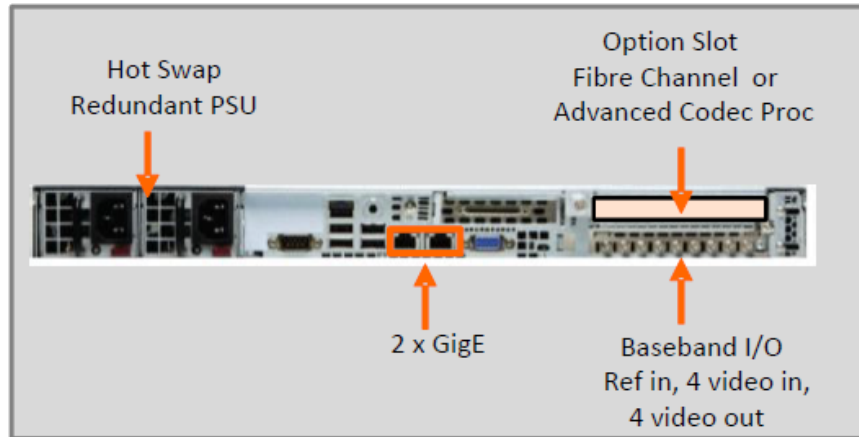
Nexio AMP Track Router is a user interface for Nexio Remote that can be used to control audio track tagging, addition, deletion, shuffling and playback routing. Nexio AMP Track Router also adds the ability to import, export and manage closed caption files.

## Images/Diagrams

### Front View (without bezel)



### Rear View



## Specifications

Specifications and designs are subject to change without notice

Mainframe	
System Components	2 Intel XEON 64-bit processors PCIe platform 32 GB RAM Single SSD boot drive (Standard) Mirrored SSD system boot drive (Option) 2 Gigabit Ethernet ports 1 IPMI port (Ethernet) for remote management VGA monitor interface 4 USB 2.0 ports (4 rear) LEDs: Power status, drive activity, network activity Windows® 7 x64 Ultimate Edition
Video Formats	
SD	525i 29.97 fps, 625i 25 fps
HD 1.5 Gb/s	1080i, 25, 29.97 fps 1080p, 25, 29.97 fps 720p 50, 59.94 fps
HD 3.0 Gb/s	1080p 50, 59.94 fps
Inputs and Outputs	
Mixed HD/SD	4 HD/SDI BNC (SMPTE 259M, 292M) 4 HD/SDI active loop-through
Genlock Reference	
SD	Bi-level sync support
HD	Bi-level or 1080 tri-level sync support
Aspect Ratio	
HD (SD)	16:9 (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	
Optional Internal Storage	Eight 1 TB internal drives for media storage
NEXIO Farad Storage	Scalable shared storage up to 512 TB+, designed to scale and perform to various bandwidth needs
Interface (Standard)	Dual port, redundant Gigabit Ethernet via Nexio Media Host system architecture
Optional Fibre Channel	Dual port 8 Gb/s FC interface to Nexio shared storage
Audio	
Channels and Formats	8 pairs embedded per video I/O channel
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 MPEG1/Layer-II playback up to 2 channels per track

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)
H.264 (optional)	Decode Only (1-15 Mb/s+)
HD Encoding/Decoding	
MPEG-2 I-frame	4:2:0 (50 to 100 Mb/s) 4:2:2 (50 to 150 Mb/s*) * 150 Mb/s Not available in 4 channel modes
MPEG-2 long-GOP	4:2:0 (18 to 80 Mb/s) 4:2:2 (25 to 100 Mb/s)
XDCAM HD	35 and 50 Mb/s
XDCAM EX	35 Mb/s
DVCPRO HD	100 Mb/s
AVC-Intra (optional)	50 and 100 Mb/s
DNxHD (optional)	120 to 220 Mb/s*
H.264 (optional)	Decode Only (1 to 40 Mb/s+)
Raid Redundancy	
Controller	RAIDsoft software RAID management system
Internal RAID Protection	RAID-3 (single-drive parity, single-drive failure protection) RAID-6 (dual-drive parity, dual-drive failure protection)
Nexio Farad	RAID-60 RAID-601
Timecode Support	
Input/Output	RS-232, TCP/IP, Imagine Communications clock interface Read, generate and write VITC, including discontinuities
Remote Serial Interface and Control	
Serial Interface	8 RS-422 ports via breakout cable and RJ-12 connector
Input/Output	RS-422 TCP or UDP over Ethernet
Protocols	Nexio native protocol, VDCP, Sony® 9-pin
Physical Characteristics	
Dimensions (H x W x D)	1.7 x 17.2 x 23.5 in. (4.3 x 43.7 x 59.7 cm) – 1RU
Weight	31 lbs (14.1 kg)
Power	
Power Supply	Redundant, dual hot-swappable, dual load-sharing
Voltage	100 to 240 V AC
Current	8 to 4 Amperes
Frequency	60 to 50 Hz
Total DC Output	700 W
Idle Consumption	140 W @ 240 V, 150 W @ 120 V
Peak Consumption	260 W @ 240 V, 290 W @ 120 V

Environmental Characteristics	
Operating Temperature	50° to 95° F (10° to 35° C)
Non-operating Temperature	-40° to 158° F (-40° to +70° C)
Operating Relative Humidity	8% to 90% (non-condensing)
Non-operating Relative Humidity	5% to 95% (non-condensing)
Operating Altitude	10,000 ft (3,048 m) @ 77° F (25° C)

## Ordering Information

NXVOLTHD1	Nexio Volt Gen-2 - 1RU video server. 1 SD/HD or 2 SD-only channels, SDI I/O, redundant Ethernet for connection to Media Host storage architecture, redundant power supplies and 1 SSD boot drive. Upgradeable to FC SAN connection, or Internal Storage operation
NXVOLTHD2	Nexio Volt Gen-2 - 1RU video server. 2 SD/HD or 4 SD-only channels, SDI I/O, redundant Ethernet for connection to Media Host storage architecture, redundant power supplies and 1 SSD boot drive. Upgradeable to FC SAN connection, or Internal Storage operation
NXVOLTHD3	Nexio Volt Gen-2 - 1RU video server. 3 SD/HD channels, SDI I/O, redundant Ethernet for connection to Media Host storage architecture, redundant power supplies and 1 SSD boot drive. Upgradeable to FC SAN connection, or Internal Storage operation
NXVOLTHD4	Nexio Volt Gen-2 - 1RU video server. 4 SD/HD channels, SDI I/O, redundant Ethernet for connection to Media Host storage architecture, redundant power supplies and 1 SSD boot drive. Upgradeable to FC SAN connection, or Internal Storage operation
NXVOLTHD8TB	Nexio Volt Gen-2 - Add 8x 1TB 2.5 in. drives to NXVOLTHD1, NXVOLTHD2, NXVOLTHD3 or NXVOLTHD4 for Internal Storage Server configuration. Includes one software license key for 4 Channel Nexio Playlist (NXA-PLAYLIST04)
NXVOLTHDFC	Nexio Volt Gen-2 - Add Fibre Channel card to attach NXVOLTHD1, NXVOLTHD2, NXVOLTHD3 or NXVOLTHD4 to Nexio SAN without Media Host (MIOH) Servers
NXVOLTHDUP1	Nexio Volt Gen-2 - Add one HD channel via software upgrade. Applicable to the following systems: NXVOLTHD1, NXVOLTHD2 and NXVOLTHD3 <b>Note:</b> The NXAUPHD1 is an equivalent upgrade option
NXVOLTHDCPMA410	Codec acceleration board upgrade kit for Nexio Volt Gen-2 media servers. Enables advanced codec operation for AVC-Intra (AVC-I) playback and works only with MA410 Server Express I/O module <b>Note:</b> The NXCP-MA410 is an equivalent upgrade option
NXVOLTHD-HDBNC	Nexio Volt Gen-2 – HD-BNC male to BNC female 12 in. cable extension; Belden 1855A
NXVOLTHDUSB	Nexio Volt Gen-2 – Recovery USB stick with preloaded Volt image
NXVOLTHDCPU	Nexio Volt Gen-2 – Spare CPU module
NXVOLTHDSIO	Nexio Volt Gen-2 – Spare MA410 Server Express I/O module
NXVOLTHDSSD-SYSD	Nexio Volt Gen-2 – Single system solid state (SSD) boot drive
NXVOLTHD1TB	Nexio Volt Gen-2 – Spare 1TB 2.5 in. media drive and sled
NXVOLTHDSPS	Nexio Volt Gen-2 – Spare power supply module
NXA-LRE-2	Nexio PRX Encoder real time in server low res proxy creation for up to 2 channels
NXA-LRE-4	Nexio PRX Encoder real time in server low res proxy creation for up to 4 channels