Imagine COMMUNICATIONS™

Hardware Installation and User Guide

Nexio AMP® Compact Shared Storage Server (NXVOLT1401HDX)

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- Support Contacts: http://www.imaginecommunications.com/services/technical-support/
- eCustomer Portal: http://support.imaginecommunications.com

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List of Procedures

About This Guide

About This Guide provides an overview of this guide, describes guide conventions, and tells you where to look for specific information. This section also gives you important information on unpacking and shipping your Harris product.

This guide introduces and describes procedures for installing and using NEXIO Volt.

If the information in the release notes shipped with your product differs from the information in this guide, follow the instructions in the release notes.

Intended Audience

This guide is intended for users installing and operating NEXIO Volt.

Finding Specific Information in This Guide

This table shows the location of specific information in this guide.

If you are looking for	Go to
Overview information about NEXIO Volt	**Chapter 1, *Introduction*** on page 9
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Writing Conventions

This guide uses the following writing conventions.

Convention	Definition
Bold	Indicates dialog box, property sheet, field, button, check box, list box, combo box, menu, submenu, window, list and selection names.
Italics	Indicates e-mail addresses, names of books and publications, and first instances of new terms and specialized words that need emphasis.
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, DELETE.
`Code`	Indicates variables or command-line entries, such as a DOS entry or something you type into a field.
>	Indicates the direction of navigation through a hierarchy of menus and windows.
hyperlink	Indicates a jump to another location within the electronic document or elsewhere.
Internet address	Indicates a jump to a Web site or URL.
 *Note text*	Indicates important information that helps to avoid and troubleshoot problems.
 Caution text	Indicates important information that if not followed could cause system problems.
 **Warning text**	Indicates information that if not followed could prevent system operation or cause it damage.

Related Documentation

- NEXIO Volt Installation Quick Start
- NEXIO Software Installation Guide
- NEXIO Low Level Module User Guide
- NEXIO Safety & Compliance Information
- NEXIO NXOS User Guide
- NEXIO NX1000MIOH User Guide
- NEXIO NX1010MIOH User Guide
- NXUSBTC User Guide
- Software License Key Registration Card

Obtaining Documentation

Manuals, User Guides and other documents can be viewed or downloaded from the Harris website at http://ecustomer.broadcast.harris.com.

1 In the **Customer Login** area, enter your **User ID** and **Password**, and click **OK**.

OR

Click **New User** to register with Harris.

The **Welcome** page appears.

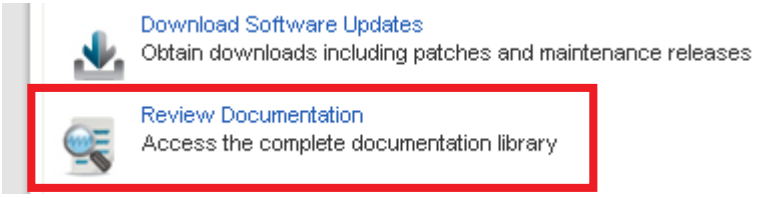

Figure 1-1 Link to Support Documentation

2 Click **Review Documentation**.

3 Under the **Table of Contents**, click **Servers**, click **Transmission Servers**, and then click **NEXIO Volt (NX1401).**

4 Click on the title of the document, and click **Open** to view it.

OR

Click **Save** to download the document.

Purchasing Documents

Additionally, you can purchase product documentation on our Harris E-commerce site, or contact your Harris Customer Service Representative to request a document.

Unpacking/ Shipping Information

Unpacking a Harris Product

All Harris NEXIO products have been carefully inspected, tested and calibrated before shipment to ensure stable and trouble-free service.

1. Check the equipment for any visible damage that may have occurred during transit.
2. Confirm that you have received all items listed on the packing list.
3. Contact your Harris NEXIO dealer if any item on the packing list is missing.
4. Contact the carrier if any item is damaged.
5. Remove all packaging material from the product and its associated components before you install the unit.

Returning a Harris Product

In the unlikely event that a Harris product fails to operate properly, contact the Harris NEXIO Customer Service Department to obtain a Return Authorization (RA) number, then send the unit back for servicing. Include the RA number on the outside of the return box.

Keep at least one set of original packaging in the event that a product needs to be returned for service. If the original package is not available, you can purchase replacement packaging from Harris Corporation. Otherwise, you can supply your own packaging as long as it meets the following criteria:

- The packaging must be able to withstand the product's weight.
- The product must be held rigid within the package.
- There must be at least 2 in. (5 cm) of space between the product and the container.
- The corners of the product must be protected.

If the product is still within the warranty period, Harris Corporation will return it to you by prepaid ground shipping after servicing.

Technical Support

Technical support is available 24 hours a day, 7 days a week. You can contact technical support by phone or e-mail.

Harris Broadcast Communications Division (BCD) Support:

- **Call**: 1-416-445-4032
- **Toll Free:** +1-888-534-8246
- **Email:** BCDService@harris.com
- **Website**: http://support.broadcast.harris.com.

Video Server Division

- **Email:** BCDService@harris.com
- **Website**: http://www.broadcast.harris.com/productsandsolutions/Servers/

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- **Email:**
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  - **RMA's:** RMArequest.europe@harris.com
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- **After-Hour Hotline:** 1-888-534-8246
- **Fax:** +852-2776-0227
- **Email:** BCDService@harris.com

1 Introduction

This chapter describes the NEXIO Volt baseband video server. NEXIO Volt provides support for up to four mixed SD/HD or SD-only baseband channels in a 1RU chassis.

NEXIO Volt is designed for use with the NEXIO true shared storage SAN. It is a modular and scalable server that makes it easy to add channels and storage as broadcasting requirements change. Multiple NEXIO Volt servers can be attached to a SAN, which enables you to develop systems with hundreds of channels and integrate them with other NEXIO baseband servers, editors, and gateways.

This chapter contains the following topics:

Overview

NEXIO Volt is available in a variety of configurations. The available NEXIO Volt Configurations are shown in **Table 1-1**. The Software LIcense Key (SLK) provided with your server determines which configuration you have purchased. If you want to upgrade to a different configuration, contact Harris BCD Support for an additional license. For details on licensing your software, see ***Registering Your Software*** on page 44.

Table 1-1 NEXIO Volt Models

Model	Configuration
NXVOLT1401HDX2S	■ 2 channels of SD only ❑ 2 bi-directional channels
NXVOLT1401HDX4S	■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels
NXVOLT1401HDX2H	■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels

Table 1-1 NEXIO Volt Models

NXVOLT1401HDX3H	■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 3 channels of mixed SD and HD, or HD only ❑ 1 record + 2 play out channels0 record + 3 play out channels ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels
NXVOLT1401HDX4H	■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of mixed SD and HD, or HD only: ❑ 2 record channels + 2 play out channels ❑ 1 record channel + 3 play out channels ❑ 0 record channels + 4 play out channels ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels

SD-only channel configurations do not support up/down/cross conversion.

SAN Overview

NEXIO Volt runs the Harris patented, award-winning RAIDsoft™ software RAID controller that allows all channels and network ports to simultaneously access content without restriction. RAIDsoft™ uses the following methods to protect stored data in each volume:

- RAID 3 to protect against a single drive failure in a volume
- Error Correction Code (ECC) Parity to protect against two simultaneous drive failures in a volume
- Intrinsic Mirroring™ to simultaneously write all data to two SANs, which provides complete data protection

Software

NEXIO Volt runs on Windows XP Professional x64 Edition.

The latest operating system service packs should be applied. Contact contact Harris BCD Support for more information. See ***Technical Support*** *on page 6* *for contact information.*

NEXIO Volt uses the latest NEXIO AMP Software Release including:

- NEXIO Low Level Module (LLM)
- NEXIO Config
- NEXIO Monitor

Optional Supported Software Applications

The following table lists the optional software applications for NEXIO Volt. The optional software applications are activated using a Software License Key (SLK).

Table 1-2 Optional Software Applications

Application	Description
NEXIO Navigator (standard)	Monitors and provides system-wide diagnostics for NEXIO servers and associated system components.
NEXIO PlayList	Event sequencing application that runs on a remote PC connected to the NEXIO LAN for media playback.
NEXIO Delay	Create a delay for play-to-air. You can set various parameters and step in and out of delay as needed.
NEXIO Remote	Remotely administer and control NEXIO servers from any PC on the same LAN as your NEXIO server.
NEXIO ClipSync	Play back two separate clips together at the same time frame accurately.

Key Features

The following list outlines some of the key features of NEXIO Volt:

- 1RU form factor
- Dual mirrored SATA boot drives
- Dual hot-swappable power supplies
- USB ports on the front and rear of the chassis
- Redundant connection to NEXIO SAN via two Gigabit Ethernet ports
- Supports up to 96 TB of usable storage with RAIDsoft™ storage protection
  - 48 TB = 2 logical disks consisting of forty-eight 600 GB drives each
  - 96 TB = 4 logical disks consisting of forty-eight 600 GB drives each via Media Host architecture
- Software-based codecs for coding and decoding SD and HD media
- Supports up to 4 SD channels or up to 4 SD/HD channels
- Supports SD (525i, 625i) and HD (1080i, 720p) content on the same chassis
- Supports SDI (SMPTE-259M) interface
- Record and playback SD:
  - MPEG-2 l-frame and MPEG-2 Long GOP 4:2:0 profile up to 15 Mbps, and 4:2:2 profile up to 50 Mbps
  - IMX 30, IMX 40, and IMX 50
  - DVCPRO25 and DVCPRO50
  - DVCAM at 25 Mbps (625 only)
  - H.264 playback only (optional - requires software licensing)
- Supports HD-SDI (SMPTE-292M) and AES/EBU interfaces
- Record and playback HD:
  - MPEG-2 MP@HL l-frame 4:2:0 profile up to 100 Mbps, and 4:2:2 profile up to 150 Mbps
  - MPEG-2 MP@HL Long GOP 4:2:0 profile and 4:2:2 profile up to 80 Mbps
  - XDCAM HD at 35 Mbps (not available in 720p)
  - DVCPRO HD at 100 Mbps
  - XDCAM EX at 35 Mbps
  - XDCAM HD422 at 50 Mbps
  - H.264 playback only (optional - requires software licensing)

  - DNxHD (optional - requires software licensing)
- SD scales to 450+ channels — up to 150+ input channels and 300+ outputs with shared access to content
- HD scales to 210+ channels — up to 70+ inputs and 140+ outputs, or 210+ outputs with shared access to content
- Integrated up/down/cross conversion support using software based real time processing
- Automatic Aspect Ratio Conversion (ARC) using AFD
- Read, generate, and write continuous and discontinuous VITC
- EIA-608 <> EIA-708 and WST <> OP-47 closed caption support using software based real time processing
- Supports redundant Ethernet, which automatically switches operation from one Ethernet network to the other, if one Ethernet network fails
- Dolby® Digital and Dolby E audio pass-through; record and play
- Works with a wide range of 3rd party automation, archiving, and media management applications
- Supports optional software applications described in **Table 1-2**

Specifications

This section describes the hardware and software specifications for NEXIO Volt.

System Configuration

The following list describes the general specifications for NEXIO Volt:

- Two AMD Opteron 64-bit processors
- PCI Express platform
- 16 GB RAM
- Dual RAID 1 protected SATA boot drives
- Two 10/100/1000Base-T Ethernet adapters
- VGA monitor interface
- PS/2 keyboard and mouse
- Two USB 2.0 ports on front panel
- Two USB 2.0 ports on back panel
- Windows XP Professional x64 Edition

Video

The following table describes NEXIO Volt video specifications.

All SD and HD Input/Output Configurations require that you register your software using a Software License Key (SLK). To register your software, see the provided Software License Key Registration Card.

Table 1-3 NEXIO Volt Video Specifications

Channels	SD = SDI (SMPTE-259M) HD = HD-SDI (SMPTE-292M)
SD Formats	525 @ 29.97fps 625 @ 25fps
HD Formats	1080i @ 29.97fps 1080i @ 25fps 720p @ 59.94fps 720p @ 50fps
SD Input/Output Configurations	**NXVOLT1401HDX2S** ■ 2 channels of SD only ❑ 2 bi-directional channels **NXVOLT1401HDX4S** ■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels

Table 1-3 NEXIO Volt Video Specifications

HD Input/Output Configurations	**NXVOLT1401HDX2H** ■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels **NXVOLT1401HDX3H** ■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 3 channels of mixed SD and HD, or HD only ❑ 1 record + 2 play out channels0 record + 3 play out channels ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels **NXVOLT1401HDX4H** ■ 2 channels of SD only ❑ 2 bi-directional channels ■ 2 channels of mixed SD and HD, or HD only ❑ 2 bi-directional channels ❑ 1 bi-directional + 1 play out channel ■ 4 channels of mixed SD and HD, or HD only: ❑ 2 record channels + 2 play out channels ❑ 1 record channel + 3 play out channels ❑ 0 record channels + 4 play out channels ■ 4 channels of SD only ❑ 2 bi-directional channels + 2 play out channels

Table 1-3 NEXIO Volt Video Specifications

SD Aspect Ratio	4:3 16:9
HD Aspect Ratio	16:9
Aspect Ratio Conversion	Up/down/cross conversion support EIA-608 <> 708 & WST <> OP-47 caption conversion AFD aspect ratio conversion Port based aspect ratio conversion User-based aspect ratio conversion

Audio

The following table describes NEXIO Volt audio specifications.

Table 1-4 Audio Specifications

Channels & Formats	8 pairs embedded per input channel 8 pairs embedded per output channel
Processing & Storage	16, 20, or 24-bit, PCM, 48kHz
Compressed Audio	Dolby Digital (AC-3) and Dolby E pass-through

Video Compression

The following tables describe the Product Code video compression specifications.

All playout channels support up/down/cross conversion when used in 2, 3, or 4 channel SD/HD mode. Up/down/cross conversion is not supported in 2 or 4 channel SD only mode.

All channel configurations require registration using a Software License Key (SLK).

The SD video compression coding and decoding for the following configurations are shown in **Table 1-5**.

- 4 Channel (2 bi-directional +2 play only)
- 6 Channel (2 ingest + 4 play only)

Table 1-5 Standard Definition Video Compression Specifications

	Compression	**Profile**	**Resolution and Frame Rate**
SD Coding and Decoding	MPEG-2 I-frame — 4 to 15 Mbps	4:2:0	525 @ 29.97fps 625 @ 25fps
	MPEG-2 I-frame — 10 to 50 Mbps	4:2:2	525 @ 29.97fps 625 @ 25fps
	MPEG-2 Long GOP — 4 to 15 Mbps	4:2:0	525 @ 29.97fps 625 @ 25fps
	MPEG-2 Long GOP — 10 to 50 Mbps	4:2:2	525 @ 29.97fps 625 @ 25fps
	IMX — 30, 40, and 50 Mbps		525 @ 29.97fps 625 @ 25fps
	DVCPRO — 25 and 50 Mbps		525 @ 29.97fps 625 @ 25fps
	DVCAM* — 25 Mbps		625 @ 25fps

**DVCPRO25 is the same as DVCAM in 525 @ 29.97fps.*

The HD video compression specifications for the following configurations are shown in **Table 1-6**.

- 2 Channel (1 bi-directional + 1 play only)
- 2 Channel (2 bi-directional + 0 play only)
- 2 Channel (2 ingest + 0 play only)

Table 1-6 2 Channel Mode — High Definition Video Compression Specifications

	Compression	Profile	Resolution and Frame Rate
HD Coding and Decoding	MPEG-2 I-frame — 50, 80, and 100 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 I-frame — 50, 70, 80, 100, 120, and 150 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 18, 25, 35, 50, 60, 70, and 80 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 25, 35, 50, 70, and 80 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	DVCPRO HD — 100 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	XDCAM HD — 35 Mbps (not available in 720p)		1080i @ 29.97fps 1080i @ 25fps
	XDCAM HD422 — 50 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps

Table 1-6 2 Channel Mode — High Definition Video Compression Specifications

	XDCAM EX — 35 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	H.264 (decode only)		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	DNxHD		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	AVC-Intra (encode only)		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps

The HD video compression specifications for the following configurations are shown in **Table 1-7**.

- 3 Channel (0 ingest + 3 play only)
- 3 Channel (1 ingest + 2 play only)

Table 1-7 3 Channel Mode — High Definition Video Compression Specifications

	Compression	Profile	Resolution and Frame Rate
HD Coding and Decoding	MPEG-2 I-frame — 50, 80, and 100 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 I-frame — 50, 70, 80, and 100 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 18, 25, 35, 50, 60, 70, and 80 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 25, 35, 50, 70, and 80 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	XDCAM HD — 35 Mbps (not available in 720p)		1080i @ 29.97fps 1080i @ 25fps
	XDCAM HD422 — 50 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps

Table 1-7 3 Channel Mode — High Definition Video Compression Specifications

	XDCAM EX — 35 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	H.264 (decode only)		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	AVC-Intra (encode only)		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps

The HD video compression specifications for the following configurations are shown in **Table 1-8**.

- 4 Channel (0 ingest + 4 play only)
- 4 Channel (1 ingest + 3 play only)
- 4 Channel (2 ingest + 2 play only)

Table 1-8 4 Channel Mode — High Definition Video Compression Specifications

	Compression	Profile	Resolution and Frame Rate
HD Coding and Decoding	MPEG-2 I-frame — 50 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 I-frame — 50 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 18, 25, 35, 50, 60, 70, and 80 Mbps	4:2:0	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	MPEG-2 Long GOP — 25, 35, 50, 70, and 80 Mbps	4:2:2	1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	XDCAM HD — 35 Mbps (not available in 720p)		1080i @ 29.97fps 1080i @ 25fps

Table 1-8 4 Channel Mode — High Definition Video Compression Specifications

	XDCAM HD422 — 50 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	XDCAM EX — 35 Mbps		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps
	H.264 (decode only)		1080i @ 29.97fps 720p @ 59.94fps 1080i @ 25fps 720p @ 50fps

Storage

The following table shows the available connections to storage for NEXIO Volt. NEXIO Volt can be connected to storage via NX1000MIOH or NX1010MIOH Media Host server(s). Harris recommends N+1 Media Hosts to ensure no single point of failure. The following table shows which Media Host is appropriate for the different sizes and types of storage systems.

Table 1-9 Storage Connection Options

	Maximum Number of Drives	**via NX1000MIOH**	**via NX1010MIOH**
ECC	up to 96 drives	✓	✓
	up to 192 drives with Intrinsic Mirroring	✓	✓
	up to 192 drives with no Intrinsic Mirroring	✘	✓
	up to 384 drives with Intrinsic Mirroring	✘	✓
RAID-3	up to 64 drives with no Intrinsic Mirroring	✓	✓
	up to 128 drives with Intrinsic Mirroring	✓	✓

For details on Media Host Failover topology and configuration, see the NEXIO NX1000MIOH User Guide or the NEXIO NX1010MIOH User Guide.

RAID Redundancy

The following table describes NEXIO Volt RAID redundancy specifications.

Table 1-10 RAID Redundancy Specifications

Controller	RAIDsoft™ software RAID management system
RAID Protection Schemes Per Volume	RAID-3 (single drive parity; single drive failure protection) -OR- ECC (multiple drive parity; dual drive failure protection)
Intrinsic Mirroring Protection Scheme (if configured in your system)	Choice of RAID-3 or ECC storage protection plus fully mirrored storage area networks*

**Requires 2 SANs with identical configuration and capacity.*

Timecode Connection Options

The following list describes the timecode input connection options for NEXIO Volt.

- RS-232
- TCP/IP
- Leitch clock interface
- D-VITC reader, writer, and generator

Remote Serial Interface

The following list describes the remote serial interface specifications for NEXIO Volt for automation control:

- RS-422 ports for control of up to four channels
- RJ-12 connector
- Harris ADC VDCP pinout (see ***NEXIO Volt RS-422 Pinouts*** on page 101)

Controls

The following table describes NEXIO Volt control specifications.

Table 1-11 Control Specifications

Input/Output	■ Ethernet, TCP/IP via socket or UDP ■ RS-422
Protocols	■ NEXIO Native Protocol ■ VDCP ■ Sony 9-Pin

Physical Specifications

The following table describes NEXIO Volt size specifications.

Table 1-12 Size Specifications

Height	1.75 in. (4.5 cm); 1RU
Width	19 in. (48.3 cm)
Depth	26.25 in. (66.7 cm)
Weight	27 lbs. (12.3 kg)

Power Supply

- Redundant dual hot-swappable, dual load-sharing

Supported Television Formats

NEXIO Volt supports the following television standard formats:

- 525 @ 29.97fps
- 625 @ 25fps
- 1080i @ 29.97fps
- 720p @ 59.94fps
- 1080i @ 25fps
- 720p @ 50fps

2 Installation

This chapter describes how to install and connect the NEXIO Volt.

This chapter contains the following topics:

Rack Mounting NEXIO Volt

NEXIO Volt comes with the following rack mounting hardware:

- Rack slides
- Rack extension brackets

The following are installation requirements/recommendations:

- **Equipment** — Mount the frame on an appropriate rack using the provided rack mounting and support equipment.
- **Power source** — Connect the power inlet to an adequate power source. Using a UPS is strongly recommended. Connect each of the two redundant power supply connections to a separate electrical circuit for added protection.
- **Adequate airflow** — The frames require adequate airflow around the chassis to provide sufficient cooling. All components draw air in through the front and exhaust via the rear of the frame. The surfaces must be clear of obstructions to provide proper air circulation and cooling.

- **External device connections** — Video monitors and all connections to external devices should be available and in working order.
- **Cable clearance —** Provide at least 2 inches of clearance in the rear of the rack for cabling.

Insure that the rack is anchored to the floor so that it cannot tip over when NEXIO Volt is extended out of the rack.

*Refer to the **NEXIO Safety and Compliance Information** booklet for detailed safety and compliance information.*

To rack mount NEXIO Volt

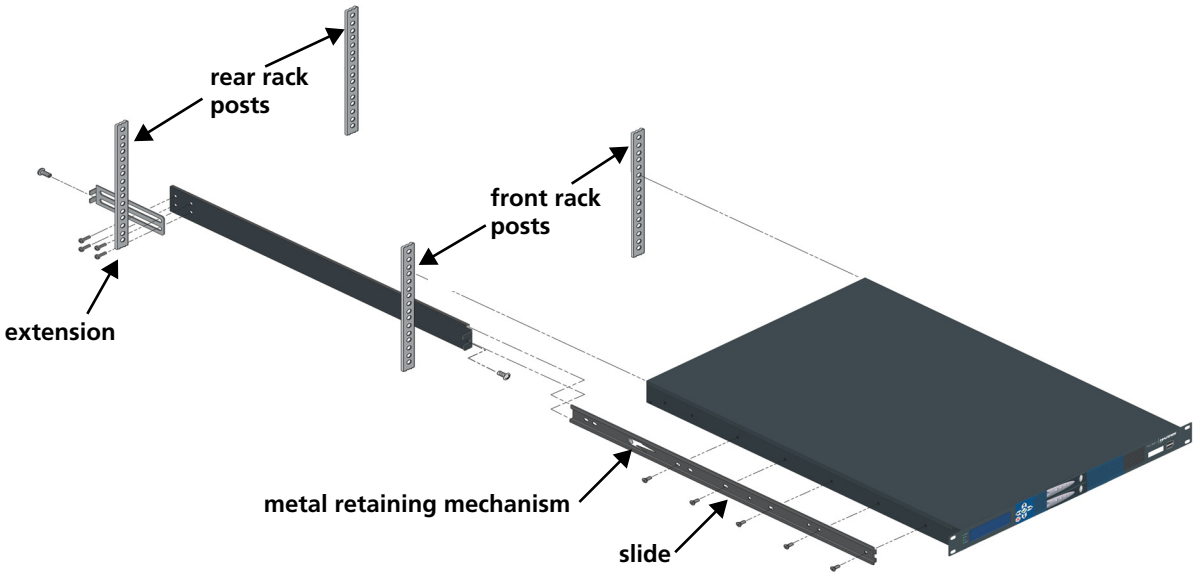

Figure 2-1 Rack Mounting

1. Attach a slide to each side of the NEXIO Volt using (5) M10 screws. Make sure the plastic retaining mechanism is located at the back of the NEXIO Volt.
2. Attach the extensions to the rear rack posts to match the depth of the racks.
3. Attach the rail to the rack posts.
4. Slide the NEXIO Volt into the rail.

5 Attach the cables to the back panel of the NEXIO Volt as shown below.
6 Turn on the NEXIO Volt.

To remove the NEXIO Volt from the rack

1 Stand in front of the NEXIO Volt and pull it out as far as it will go.
2 On the left slide, press down on the plastic retaining mechanism.
3 On the right slide, pull up on the plastic retaining mechanism.

For more information on rack mounting, see the NEXIO Volt Installation Quick Start Guide.

Connecting NEXIO Volt

This section contains the following topics:

Rear Panel Port Connectors

The Product Code rear panel is shown in **Figure 2-2**.

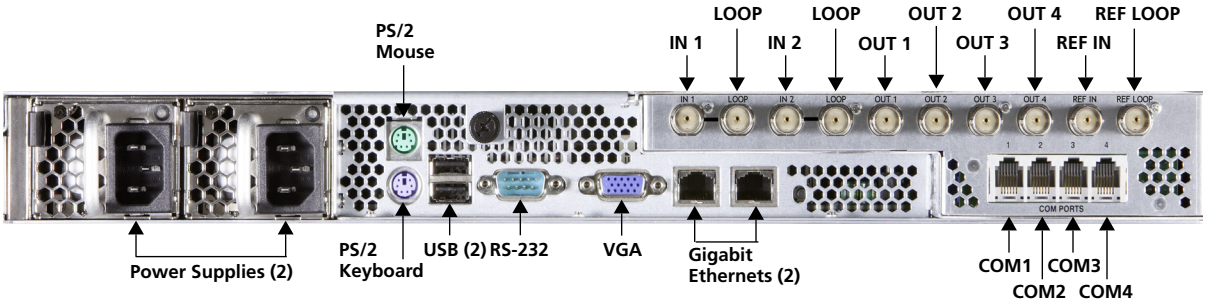

Figure 2-2 NEXIO Volt Rear Panel

The function of each connector is shown in **Table 2-1**.

Table 2-1 Product Code Rear Panel Port Connectors

	Port	Description
POWER	**Power Supply 1**	Hot swap, redundant power supply.
	Power Supply 2	Hot swap, redundant power supply.
INPUT DEVICES	**PS/2 Mouse**	PS/2 connector for mouse.
	PS/2 Keyboard	PS/2 connector for keyboard.
USB	**USB 1**	USB 2.0 port connector.
	USB 2	USB 2.0 port connector.
RS-232	**RS-232**	9-pin D-sub connector for RS-232 serial port connection.
VGA	**VGA**	VGA primary monitor connection.
HD/SD SDI VIDEO	**IN 1**	BNC connector for SDI and HD-SDI video input.
	LOOP	BNC connector for SDI and HD-SDI video IN 1 loop-through.
	IN 2	BNC connector for SDI and HD-SDI video input.
	LOOP	BNC connector for SDI and HD-SDI video IN 2 loop-through.
	OUT 1	BNC connector for SDI and HD-SDI video output.
	OUT 2	BNC connector for SDI and HD-SDI video output.
	OUT 3	BNC connector for SDI and HD-SDI video output.
	OUT 4	BNC connector for SDI and HD-SDI video output.
REFERENCE	**REF IN**	BNC connector for analog bi-level or tri-level reference input.
	REF LOOP	BNC connector for analog reference passive loop-through. Loop output = REF IN input. If the loop-through is not used, connect a 75Ω terminator to this jack.
GIGABIT ETHERNET	**ETHERNET 1**	RJ-45, 10/100/1000 Mbps Ethernet connection.
	ETHERNET 2	RJ-45, 10/100/1000 Mbps Ethernet connection.

Table 2-1 Product Code Rear Panel Port Connectors

COM	**COM PORT 1**	RJ-12, RS-422 port for serial control.
	COM PORT 2	RJ-12, RS-422 port for serial control.
	COM PORT 3	RJ-12, RS-422 port for serial control.
	COM PORT 4	RJ-12, RS-422 port for serial control.

Rear Panel Port Descriptions

The following sections describe the Product Code rear panel port connections.

Power Supplies

NEXIO Volt has two redundant hot swappable power supplies located on the back panel. Under normal operation both power supplies work in tandem spreading the load between them. In the event of a failure, the functional power supply provides all power needed by NEXIO Volt.

To identify and remove the failed power supply

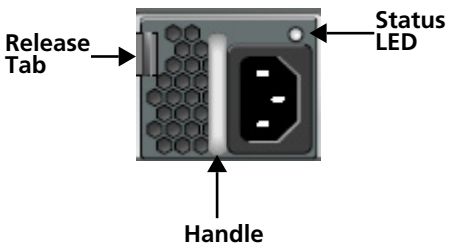

Figure 2-3 Power Supply Module

1. Look at the status LED on the front of each power supply. The LED on the failed power supply will not be illuminated.
2. To remove a power supply, push the release tab to the left.
3. Hold the release tab to the left, grasp the power supply handle, and pull the power supply out of the frame.

To insert a new power supply

1. Slide the replacement power supply into the empty slot.
2. Press firmly so that it clicks in place. If the power supply cord is in place, the module's status LED will illuminate.

Input Devices

The Product Code has two PS/2 connectors. The top PS/2 connector is for the mouse, and the bottom PS/2 connector is for the keyboard.

USB

NEXIO Volt has two USB 2.0 ports on the back panel, and two on the front panel (see **Figure 2-4**). The available USB ports can be used to connect devices to NEXIO Volt.

The following USB devices can be used as sources and destinations when upgrading software and firmware, and collecting Log files:

- USB CD-ROM/R/RW drives (source only)
- USB DVD-ROM/RW/RAM drives (source only)
- USB hard drives
- USB stick

RS-232

NEXIO Volt has one serial port designated for RS-232 communication. This port can be used with a supported Time Code Corrector module to lock the Product Code to your house time reference. For more information, see the *NXUSBTC User Guide* and your Adrienne AEC Box (NXUSBTC) documentation.

VGA

The Product Code has one VGA port. This port is used to connect the primary monitor.

HD/SD SDI Video Ports

The HD/SD SDI video ports use BNC connectors with 8 pairs (16 channels) of embedded audio input and output.

Ports can be configured for SMPTE-259M SD or SMPTE-292M HD outputs.

IN 1, LOOP, IN 2, LOOP — Support SDI and HD-SDI input.

OUT 1, OUT 2, OUT 3, OUT 4 — Support SDI and HD-SDI output.

When recording from a satellite feed, apply frame synchronization hardware between the receiver and the video input channel. The synchronization hardware and the NEXIO Volt must be connected to the house reference.

Do not use wire or plastic ties on cables as this can impede cable performance. Use soft cable ties such as Velcro-based ties for wrapping cables.

The BNC connectors use coaxial cable to connect devices together. Use high-quality cable suitable for HD-SDI with the Product Code frame, for example, the Belden 1694A cable. Cable used for analog, SDI, and ASI devices may not be of high enough quality.

Reference

NEXIO Volt has two reference ports. These reference ports are labeled:

- REF IN
- REF LOOP

The reference ports use BNC connectors for analog bi-level or tri-level sync reference connection. A valid reference signal must be applied to the REF IN port when the system is configured for external sync.

Looping is not recommended. If you do loop, use caution when looping reference throughout the system. If one external cable fails or you replace a failed server, you will compromise the reference signal to other servers in the looped chain. Always terminate unused loop outputs with a 75Ω terminator (provided in the accessories bag).

Each frame should have its own reference from the source device to ensure correct timing.

Referencing NEXIO Volt to the House Time Clock (Optional)

Refer to the *NXUSBTC User Guide* for more information on referencing Product Code to your house time clock.

Gigabit Ethernet

NEXIO Volt is equipped with two Gigabit Ethernet ports. Each port is 10/100/1000 Mbps capable with full autonegotiation. The ports may be flexibly used for NEXIO Media Host LAN, and Protocol (control). Full duplex operation is always needed for networks and is required for the NEXIO LAN. Category 6 cables must be used.

Teaming of Ethernet ports is not supported for NEXIO Volt in any configuration.

Ethernet Configuration

NEXIO Volt uses Gigabit Ethernet to connect to Media Host. Redundant Ethernet requires two physical Ethernet switch infrastructures, one supporting the Ethernet 1 connections and the other supporting the Ethernet 2 connections. If one Ethernet port or infrastructure fails, operation continues using the redundant port.

The two physical infrastructures must be supported by separate switches; or switch infrastructures. The two physical infrastructures must be of the same caliber hardware. For example, do not use switches from different vendors.

Warning: The redundant LAN feature is not designed to handle situations where different networks are missing. For example, if Ethernet 1 cable is pulled from node 1, pulling an Ethernet 2 cable from any other node will cause Ethernet data flow to the NEXIO LAN to stop. In other words, any one network can totally fail, but one network must remain intact.

The following Ethernet switches can be used for Ethernet connectivity:

- NXES40024
- NXES40048
- NXES45024
- NXES45048
- NXESD1224X2
- NXESB624
- NXESB648

Redundant Ethernet protects NEXIO LAN traffic (internode communications) only. It does not protect FTP, Protocol, or Proxy communications.

Ethernet 1 Port Configuration (redundant)

The following shows the default configuration from the factory:

- Configured as a primary LAN communications port for NEXIO network traffic
- Supports Ethernet based automation control

To use direct connection (redundant Ethernet Port 1)

1. In **NEXIO Config**, click the **IP Config** tab (see page 87).
2. In the **Role** list, select **NXLAN 1** for Ethernet 1.

To use Media Host architecture (redundant Ethernet Port 1)

1. In **NEXIO Config**, click the **IP Config** tab (see page 87).
2. In the **Role** list, select **Not Assigned** for all Ethernet connections.
3. In the **Hi-Res Net Server (MIOH)** area, enter the IP address for Host 1 and Host 2.

Ethernet 2 Port Configuration (redundant)

The following shows the default configuration from the factory:

- Configured as a redundant LAN communications port for NEXIO network traffic
- Supports Ethernet based automation control

To use direct connection (redundant Ethernet Port 2)

1. In **NEXIO Config**, click the **IP Config** tab (see page 87).
2. In the **Role** list, select **NXLAN 2** for Ethernet 2.

To use Media Host architecture (redundant Ethernet Port 2)

1. In **NEXIO Config**, click the **IP Config** tab (see page 87).
2. In the **Role** list, select **Not Assigned** for Ethernet 2.
3. In the **Hi-Res Net Server (MIOH)** area, enter the IP address for Host 1 and Host 2.

FTP Support

FTP support for NEXIO Volt servers used in a shared storage system is provided by NEXIO Media Gateway products. The NEXIO Volt Shared Storage Server has no FTP support of its own.

COM Ports

There are four ports designated for RS-422 communications.

COM Port 1, COM Port 2, COM Port 3, COM Port 4 — Used for RS-422 communications control.

COM ports 1 - 4 can be configured to control various channels (see **Table 2-2**). Each COM port can control only one channel. The COM ports are codec based, therefore codec 0 = channel 1, etc. For more information on configuring COM ports, see ***NEXIO Volt RS-422 Pinouts*** on page 101.

Table 2-2 Default COM Port Channel Configurations

Mode	COM Port	Codecs
2 channel mode	COM Port 1 and 2	Codec 0 and 1 (channel 1 and 2)
3 channel mode	COM Port 1, 2, and 3	Codec 0, 1, and 2 (channel 1, 2, and 3)
4 channel mode	COM Port 1, 2, 3, and 4	Codec 0, 1, 2, and 3 (channel 1, 2, 3, and 4)

Front Panel Descriptions

The front panel of NEXIO Volt is shown in **Figure 2-4**. The front panel includes the following:

- LED Indicators
- LCD
- LCD Keypad
- Drive Release Levers
- Drive Release Buttons

- USB Ports

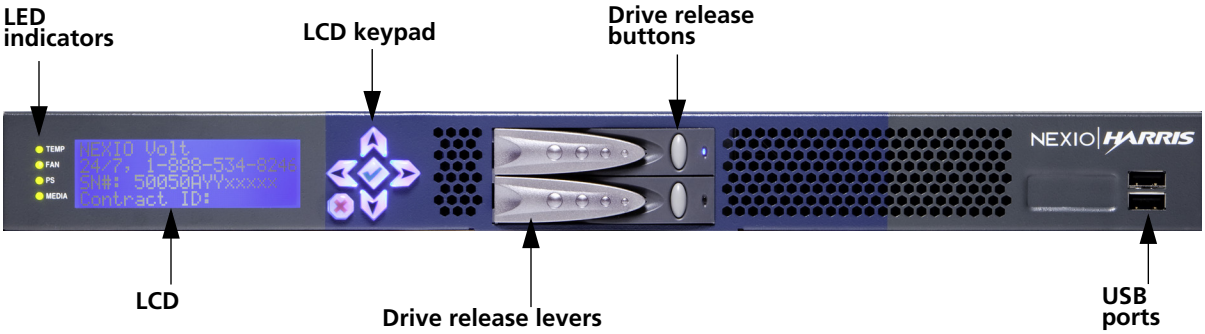

Figure 2-4 NEXIO Volt Front Panel

LED Indicators

The LED indicators are on the front of Product Code. The LED Indicators are used to monitor NEXIO Volt. For more information on monitoring NEXIO Volt, see ***LED Indicators*** on page 91.

LCD and LCD Keypad

The LCD and LCD keypad work together to provide a user interface that enables you to control alarms and applications, view status, and configure templates and node settings. For more information on the LCD user interface, see ***LCD User Interface*** on page 96.

The LCD keypad is also used to power on and off the NEXIO Volt, and reset the system as described in the following sections.

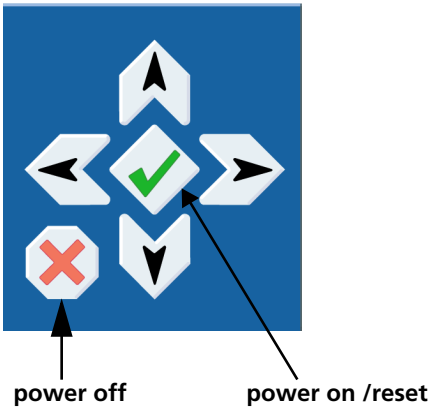

Figure 2-5 LCD Keypad

Power On/Reset Button

The power on/reset button enables you to turn on the NEXIO Volt, and reset the system as described below:

- **Turn On** — press and hold the button for 5 seconds to power on the system.
- **System Reset** — when powered on; press and hold the button for 3 seconds to reset the system.

The power on/reset button is also used to enter information via the LCD user interface (see ***LCD User Interface*** *on page 96).*

Power Off Button

The power off button enables you to shut down the system as described below:

- **Power Off** — press and hold the power off button for 5 seconds to shut down the system.

The power off button is also used to go to the home page on the LCD user interface (see ***LCD User Interface*** *on page 96).*

Arrow Buttons

The arrow buttons control the LCD User Interface. For more information, see ***LCD User Interface*** on page 96.

Drives and Drive Release Buttons

NEXIO Volt has two SATA boot drives. For information on replacing a drive, see ***Replacing the Boot Drive*** on page 103.

Front Panel USB Ports

The front of NEXIO Volt has two USB 2.0 ports. For more information, see ***USB*** on page 34.

3 Getting Started

This chapter describes how to start and begin using the NEXIO.

This chapter contains the following topics:

Starting NEXIO Volt

This section describes how to start NEXIO Volt and verify your connections. After you have started NEXIO Volt, you should start NEXIO Config to verify your hardware and software configuration, and assign your video and audio I/O settings. For detail on starting and using NEXIO Config, go to **Using NEXIO Config** on page 57.

To start NEXIO Volt

- Press the power button on the front panel. Under normal operation, NEXIO software starts when you start the system. The following application shortcuts appear on your desktop:
  - NEXIO Startup
  - LLM
  - NEXIO Config

Table 3-1 Desktop Shortcuts

Shortcut	Description
	Starts the NEXIO Low Level Module (LLM) and NEXIO Monitor. Use this shortcut as the default method for starting these applications. For more information on the LLM, see the *NEXIO Low Level Module User Guide.* For more information on NEXIO Monitor, see ***NEXIO Monitor*** on page 92.
	Starts only the NEXIO Low Level Module (LLM). The LLM application is the core software component for communication and video/audio I/O in your NEXIO system. For more information on the LLM, see the *NEXIO Low Level Module User Guide.*
	Starts NEXIO Config. NEXIO Config lets you view the current hardware and software information. You also use NEXIO Config to configure your NEXIO Volt. In addition, you can specify audio and video settings, and change LLM and MPEG settings (only if directed to do so by Harris Customer Support). For details on using NEXIO Config, see **Chapter 4, *Using NEXIO Config*** on page 57.

Registering Your Software

Your software must be registered. Typically this gets done during the commissioning process. If your software does not get registered during the commissioning process, you can register your software. To register your software you will need to send Harris BCD Support the deployment file (.dc file) for the software. The .dc file is a unique encrypted file for each server. Therefore you must make sure that you name each server with a unique name for easy identification (see **Figure 3-4**).

The following procedure describes how to create the deployment (.dc) file that you need to send to Harris BCD Support.

*If you have any questions about registering your software, contact BCD Technical Support (see **Technical Support** on page 6).*

To create the deployment (.dc) file

1 Navigate to the **C:\Program Files (x86)\Harris\SLK** folder.

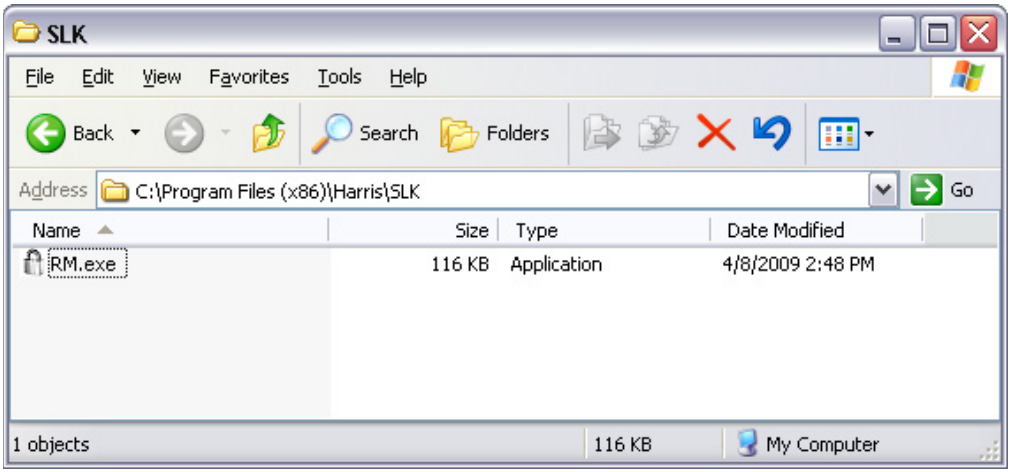

Figure 3-1 SLK Window

2 Double-click the **RM.exe**.

Tip: You can also click **Start** > **Programs** > **Harris** > **Software License Key** > **Registration Manager** to open the Registration Manager.

If you are using NEXIO Software Release 5.7.1 or earlier, the Registration Manager is located at C:\VR\SLK.

The **Software License Key - Registration Manager** appears.

Figure 3-2 Software License Key - Registration Manager

Tip: You can click an application and then click **Features configuration** to view a list of the features that are enabled.

3 Click **Register**.

The **Save As** dialog box appears.

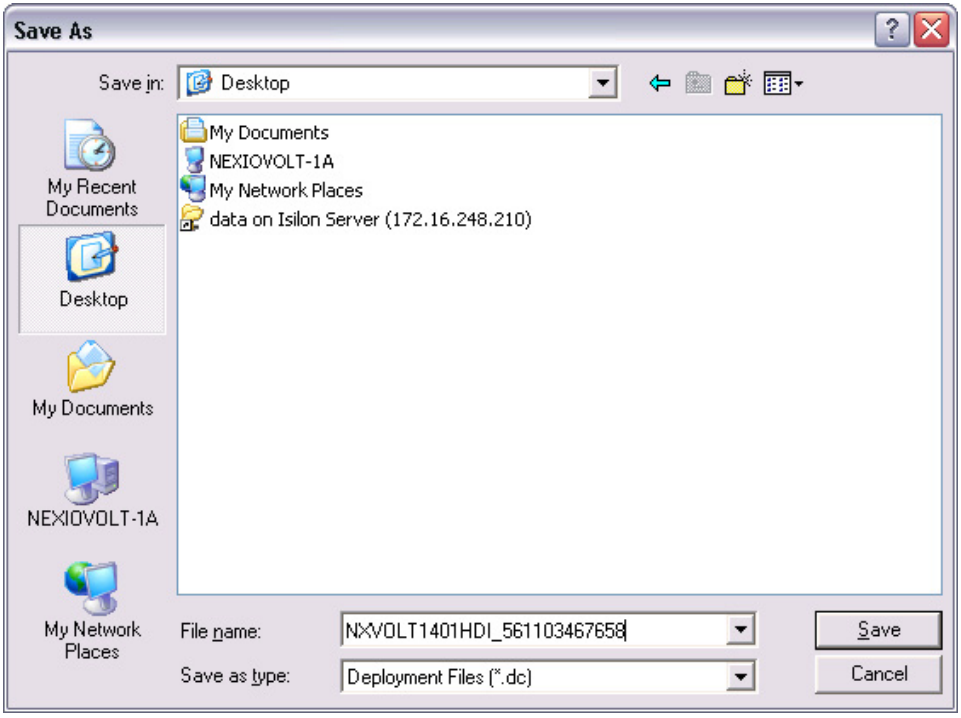

Figure 3-3 Save As Dialog Box

4 Name the deployment (**.dc**) file using the server name and the serial number of the server (see **Figure 3-3**), and save it to a USB stick.

A message appears telling you that you have successfully created the **.dc** file.

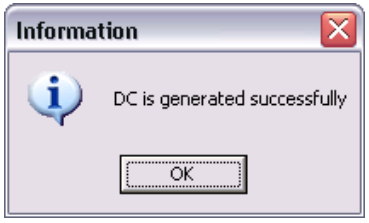

Figure 3-4 Information Dialog Box

5 Click **OK**.

6 Email the **.dc** file and the description of what you are registering (e.g., NEXIO Config) to Harris BCD Support at bcdservice@harris.com.

   Harris BCD Support will send you a redistribution code (**.rc**) file.

7 Copy the **.rc** file to the USB stick and insert it into NEXIO Volt.

8 Open the **Software License Key - Registration Manager** as described above.

9 Click **Load RC.**

10 In the **Open** dialog box, locate the USB stick and double-click the **.rc** file.

11 Run the appropriate application to complete the registration (e.g., NEXIO Config, PlayList, etc.)

   The **Software License Key - Registration Manager** shows the application as registered (see **Figure 3-5**).

Figure 3-5 NEXIO Config Registered

You can now close the **Software License Key - Registration Manager** and start NEXIO Config as described above.

Connecting NEXIO Volt using NEXIO Remote

You can use the NEXIO Remote application on your PC to connect NEXIO Volt to additional NEXIO systems on the NEXIO LAN. If you do not have a user name and password, you can log onto NEXIO Remote using the default Administrator account (see **Table 3-2**).

NEXIO Remote is an optional application that provides you a User Interface (UI) for NEXIO Volt. If your NEXIO Volt is controlled by your automation system only, then you do not need NEXIO Remote.

Table 3-2 Default Administrator Account

User Name	Administrator
Password	system

Tip: If you log on as a Guest, you do not need a password, but you will not have rights to all functionality of the server.

The PC used to connect NEXIO Volt to additional NEXIO systems is provided by the customer. This PC must be plugged into the same NEXIO LAN used by NEXIO Volt.

To log on to NEXIO Remote

1 On your PC, double-click the **NXOS** icon to start NEXIO Remote (see **Figure 3-6**).

Figure 3-6 NEXIO Remote Icon

1 In the Accounts list, click **Administrator**. The Administrator user name appears in the User Name box (see **Figure 3-7**).

2 In the **Password** box, type `system`. This is the default password for the Administrator account.

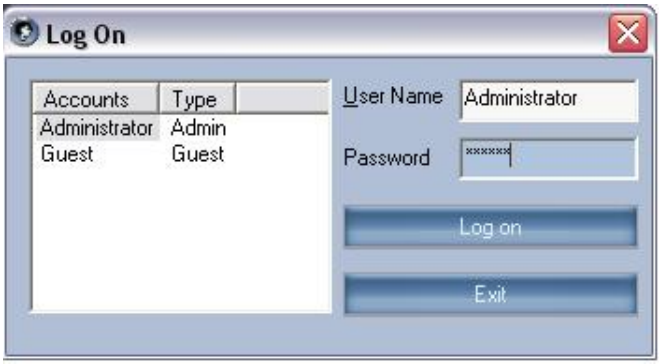

Figure 3-7 NEXIO Remote Log On Dialog Box

3 Click **Log on**.

NEXIO Remote main window appears (see **Figure 3-8**). Your MediaBase clip list will be empty if no clips are stored on the NEXIO Volt.

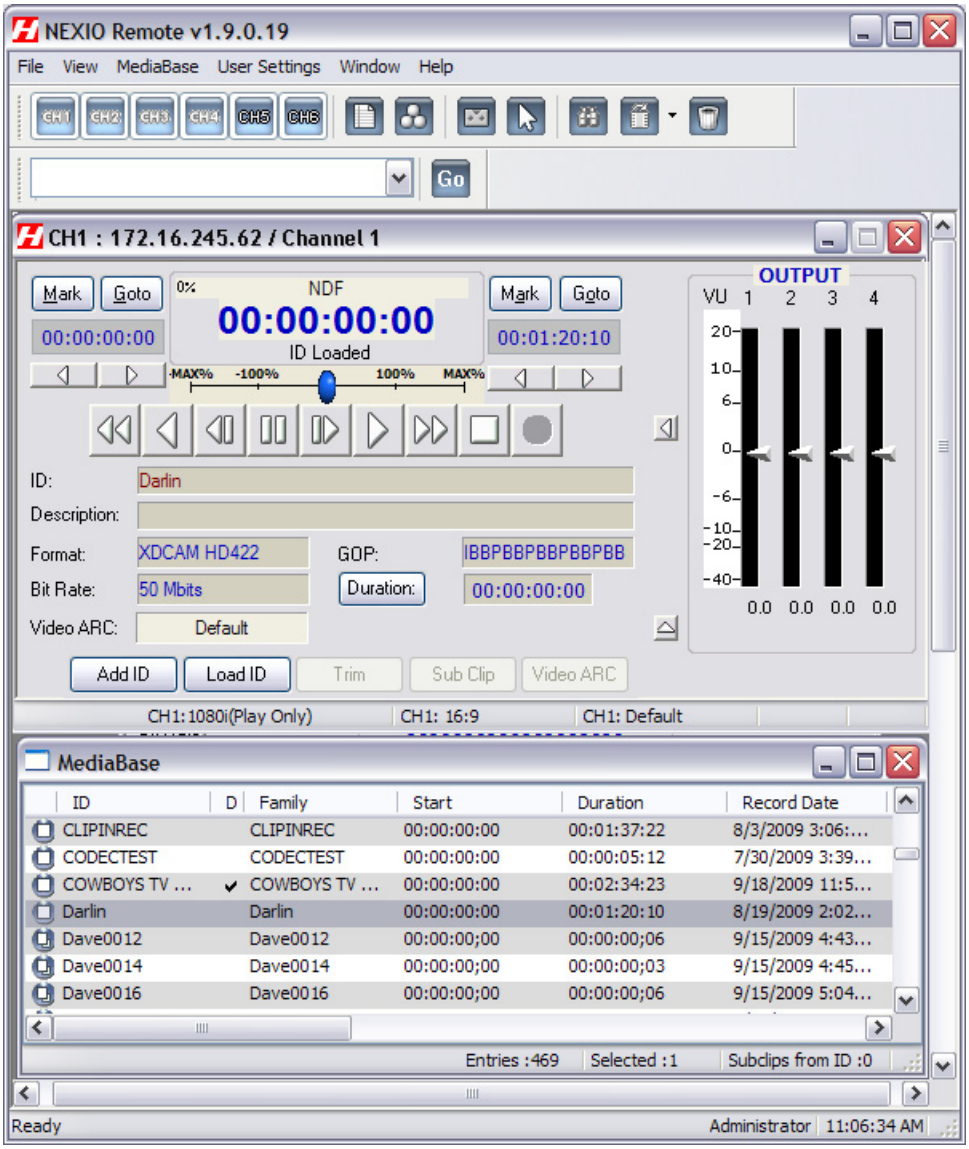

Figure 3-8 NEXIO Remote Main Window

NEXIO Remote Startup Operations

Once NEXIO Volt is successfully started, use NEXIO Remote Wizard on your PC to connect it to the NEXIO LAN. For details on using NEXIO Remote Wizard, see the *NXOS User Guide*.

After you have connected NEXIO Volt to NEXIO Remote, complete the following startup operations to ensure that the NEXIO Volt is operating properly:

- **Confirm Connection to Additional Systems**
- **Verify Audio and Video I/O Connections**
- **Test the Input and Output Signals**

Confirm Connection to Additional Systems

The **LLM** enables you to confirm that the NEXIO Volt is connected to additional systems when you view the information in the Nodes area.

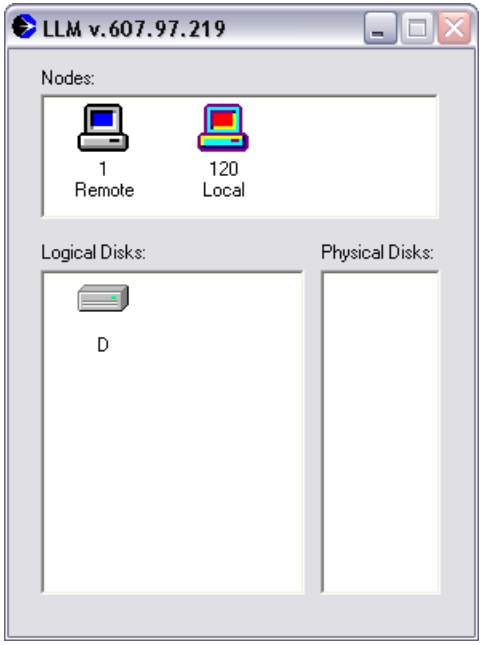

Figure 3-9 LLM Main Window

To confirm the connection

1 In the **Nodes** pane, confirm that NEXIO Volt that you are currently logged on to and any other active nodes are displayed.

If you are connected via a Media Host architecture you will only see your own node and not the rest of the nodes in the system.

2 In the **Logical Disks** pane, confirm that logical disk D and any other configured volumes are displayed.

Verify Audio and Video I/O Connections

Verify the signal routing by checking the installation of your cables. Confirm that all audio and video I/O cables are connected properly and securely.

Test the Input and Output Signals

Test signals on all connected channels. You can verify input and output signals by recording and playing back a test clip.

To test I/O signals

1 In the first record or bi-directional channel window, click **Add ID** (see **Figure 3-10**).

Tip: The first record or bi-directional channel depends on your channel configuration. In this example it is Channel 1. To locate the first record or bi-directional channel, find the first channel that has the **Add ID** button available.

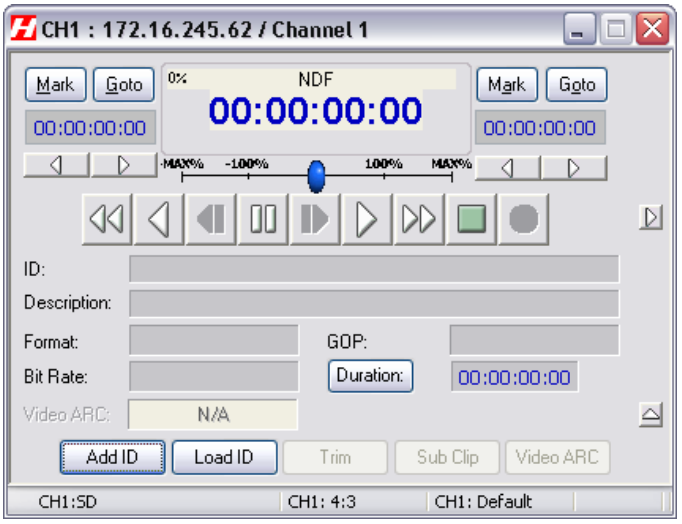

Figure 3-10 First Record Channel Window

The **Add ID** dialog box appears (see **Figure 3-11**).

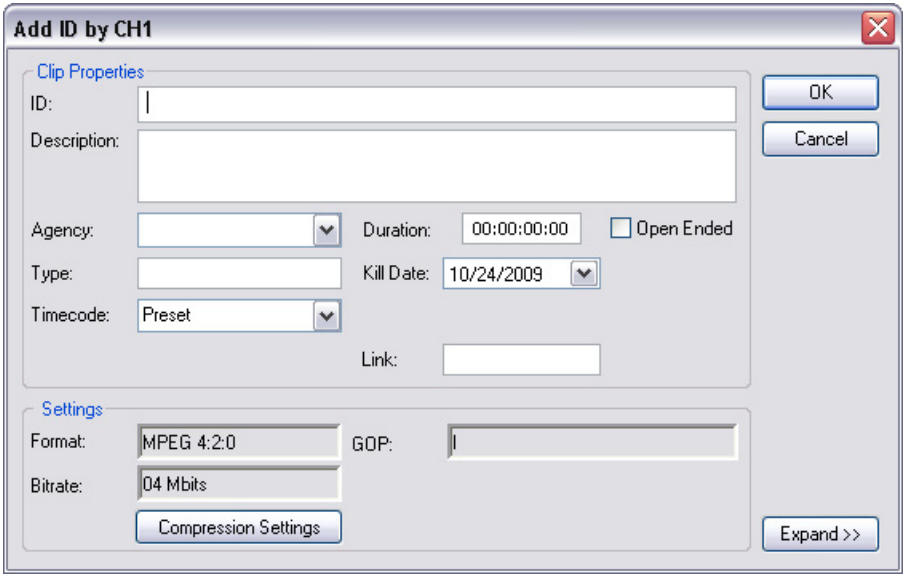

Figure 3-11 Add ID by CH1 Dialog Box

2 In the **ID** box enter the name of the new clip. This is the name of your test clip.

3 In the **Duration** box enter a time duration for the test clip. Thirty seconds to 2 minutes is recommended.

4 Click **OK**.

The new ID name appears in the ID box in the channel window and in the MediaBase window. The Record button (see **Figure 3-12**) is available indicating that the clip is ready to record.

Figure 3-12 Ready to Record

5 Left-click (hold) + right-click the **Record** button, or press **CTRL Q**.

The record button appears red (see **Figure 3-13**). This indicates the clip is being recorded. The current record duration is displayed at the top of the window.

Figure 3-13 Recording

6 Once the recording is complete, play the test clip back in an available playout channel by doing one of the following:

a If you used a bi-directional channel, rewind the clip and click **Play**.

b If you used a record channel, drag the clip from the MediaBase window into a playout channel window.

7 Confirm successful playback on a connected monitor.

8 If the NEXIO Volt has a second ingest channel, repeat the procedure above for Channel 2 ingest.

To test output signals on remaining playout channels

1 Select a channel window that supports playout.

2 Select a clip in MediaBase.

3 Drag the selected clip from MediaBase into the channel window.

4 Press **Play**.

5 Confirm playback on a connected monitor.

6 Repeat Steps 1 though 5 for all configured playout channels.

You can also verify output by dragging a clip from an ingest channel window to a playout channel window.

For more information on using NEXIO Remote, see the NXOS User Guide.

4 Using NEXIO Config

NEXIO Config Overview

NEXIO Config enables you to easily configure all of the settings for your NEXIO Volt servers. You can create and save these settings in configuration presets to use at any time.

In this chapter you will learn how to work with configuration presets. You will also be provided detailed information on each NEXIO Config window.

This chapter contains the following topics:

NEXIO Config is intended to be run while the LLM is not running. Most changes made within NEXIO Config require a restart of the LLM for the changes to take effect.

Starting NEXIO Config

To start NEXIO Config

- Double-click on the **NEXIO Config** desktop shortcut (see **Figure 4-1**).

Figure 4-1 NEXIO Config Desktop Shortcut

The **NEXIO Config** Information window appears (see **Figure 4-2**).

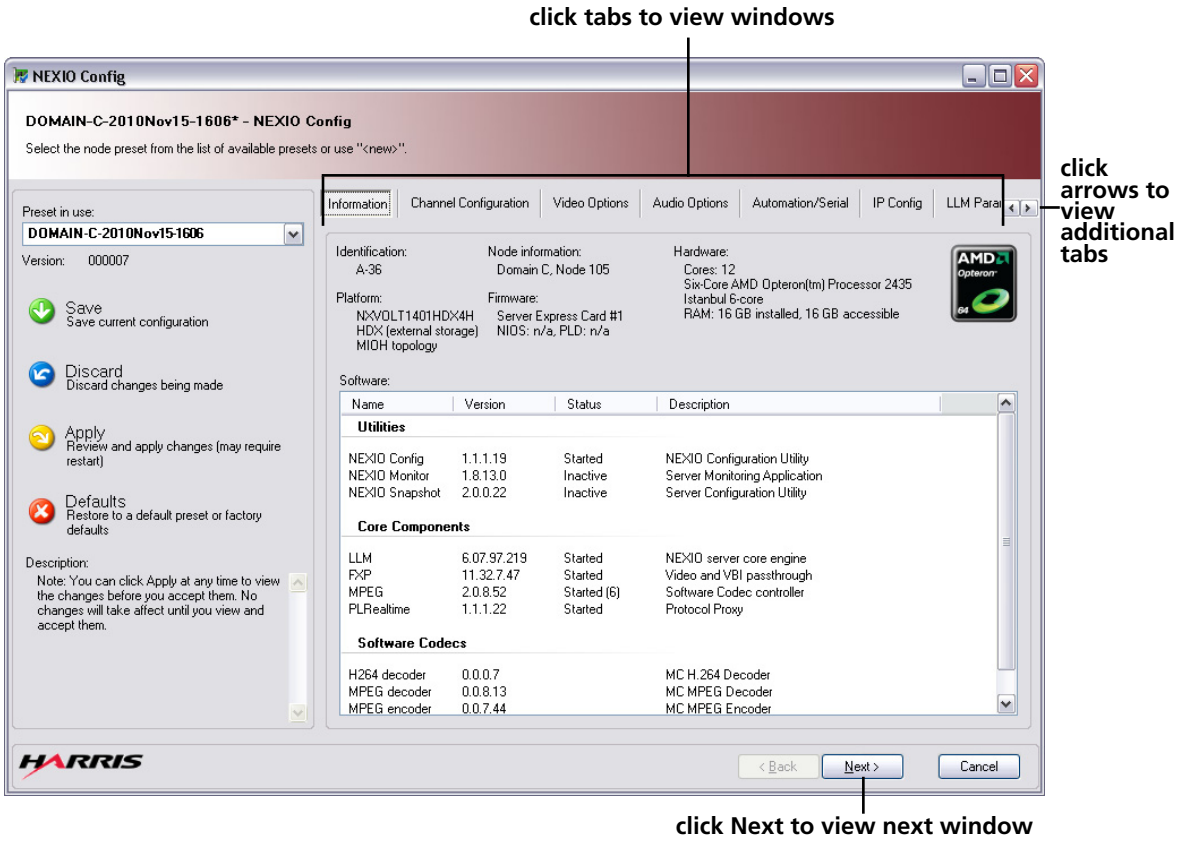

Figure 4-2 NEXIO Config Information Window

If you have not registered your software using your Software License Key (SLK), a message appears telling you to contact Harris BCD Support to obtain a license. See ***Technical Support*** *on page 6 for contact information.*

Registering your software will require that you send Harris BCD Support the deployment (.dc) file for the software. The .dc file is a unique encrypted file for each server. Therefore you must make sure that you name each server with a unique name for easy identification. For information on creating the .dc file, see ***Registering Your Software*** on page 57.

Working with Configuration Presets

NEXIO Config allows you to select an existing preset, or create a new preset to use for your configuration. You can easily apply and discard changes, and save your configuration preset using the following icons:

 **Save** — opens the **Save Current preset** dialog box where you can name and save the configuration preset.

 **Discard** — discards all changes made to the configuration preset.

 **Apply** — opens the **Apply Changes** dialog box (see **Figure 4-3**) so that you can view the changes made to the configuration preset. No changes will be applied until you click **OK**.

 **Defaults** — opens the **Defaults** dialog box (see **Figure 4-8**). You can restore the factory default settings (i.e., 2 SD channels), or you can restore the preset that you specify as the default (see ***To specify a default preset*** on page 62).

Creating or Modifying a Preset

The following procedure describes how to create or modify a preset.

To create or modify a configuration preset

1. In the **Preset in use** list, select the desired preset, or select **<new>** to create a new preset.
2. Make the desired changes to each NEXIO Config window.

*You can click **Discard** at anytime to discard all the changes made to the selected configuration preset.*

3. Click **Apply** to view the changes.

   The **Apply Changes** dialog box appears (see **Figure 4-3**).

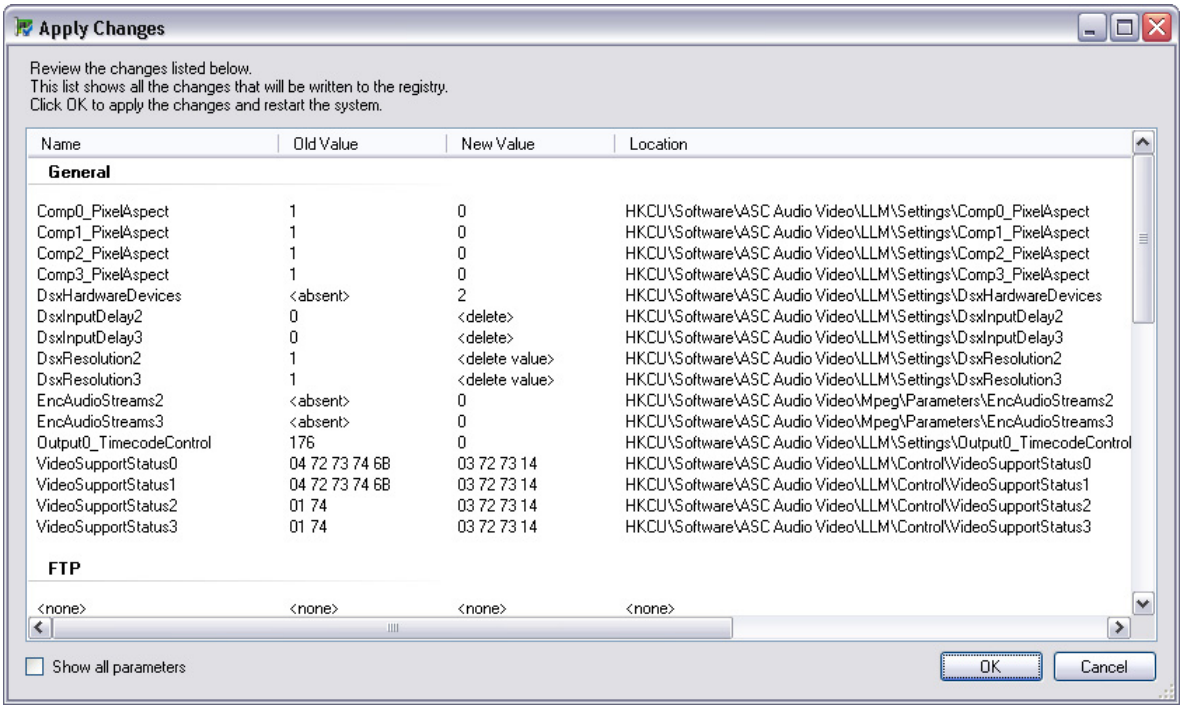

Figure 4-3 NEXIO Config — Apply Changes

4. Review all of the changes in the list.
5. Click **OK** to write the changes to the registry and restart your system.

Creating a Default Preset

The following procedures describe how to restore the system to the factory default settings (i.e., 2 SD channels) and how to specify a selected configuration as the default preset.

To restore the factory default settings

1 Click the **Defaults** icon.

The **Defaults** dialog box appears (see **Figure 4-4**).

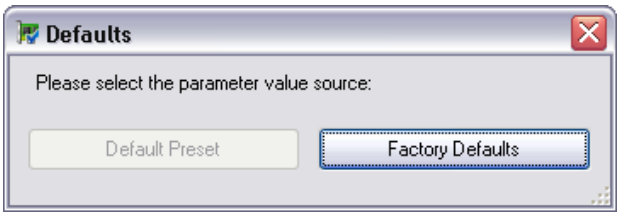

Figure 4-4 NEXIO Config — Factory Defaults

2 Click **Factory Defaults**.

The following warning appears.

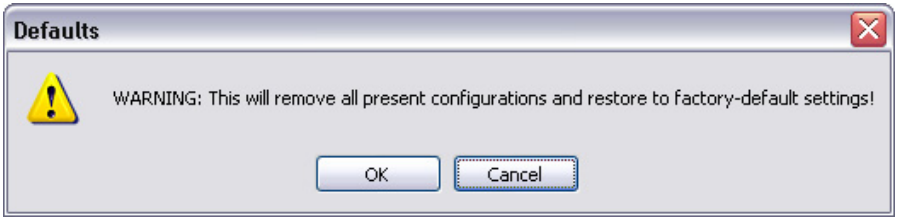

Figure 4-5 NEXIO Config — Factory Defaults Warning

3 Click **OK**.

The following dialog box appears asking if you want to review the changes.

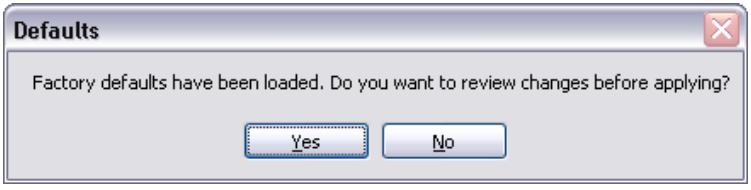

Figure 4-6 NEXIO Config — Factory Defaults Message

4 Click **Yes** to open the **Apply Changes** dialog box and review the changes prior to restoring the factory defaults.

-OR-

Click **No** to restore the factory defaults without reviewing the changes.

The following dialog box appears recommending that you restart the system.

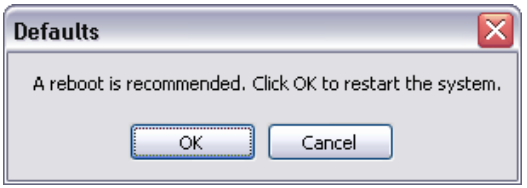

Figure 4-7 NEXIO Config — Defaults Reboot

5 Click **OK** to restart the system and apply the factory defaults.

To specify a default preset

1 Create a preset as described in ***Creating or Modifying a Preset*** on page 60.

2 In Windows Explorer, open the **presets** folder.

Tip: The **presets** folder is in **C:\Program Files\Harris\NEXIO Config (x64)**.

3 Copy the file that you want to use as the default from **C:\Program Files\Harris\NEXIO Config (x64)\presets** to **C:\Program Files\Harris\NEXIO Config (x64)**.

4 Rename the file to **default.xml**.

5 Click the **Defaults** icon.

The **Defaults** dialog box appears. Since you have defined a default preset, the **Default Preset** button is available (see **Figure 4-8**).

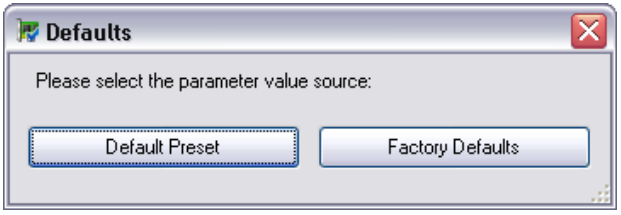

Figure 4-8 NEXIO Config — Default Preset

6 Click **Default Preset**.

The following message appears asking you if you want to review the changes.

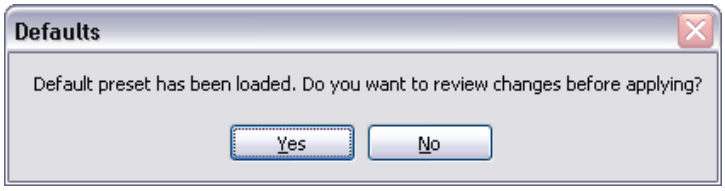

Figure 4-9 NEXIO Config — Default Preset Message

7 Click **Yes** to open the **Apply Changes** dialog box and review the changes prior to restoring the default preset.

-OR-

Click **No** to restore the default preset without reviewing the changes.

The following dialog box appears recommending that you restart the system.

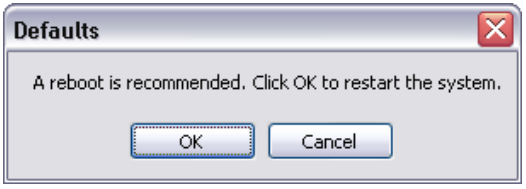

Figure 4-10 NEXIO Config — Defaults Reboot

8 Click **OK** to restart the system and apply the default preset settings.

NEXIO Config Windows

The following sections describe the settings for each of the NEXIO Config windows:

It is important to understand that if a value appears in a box that is grayed out, the value is valid but cannot be edited. In addition, if a check box is selected and is grayed out, the option is enabled and cannot be disabled from that window.

Information

The NEXIO Config **Information** window (**Figure 4-11**) provides the following information. No changes can be made in this window.

- **Identification** — displays the host name of the server
- **Node information** — indicates the NEXIO domain to which this server belongs and its node number in that domain
- **Hardware** — indicates the number and type of processors, and the amount of RAM in the server
- **Platform** — identifies the NEXIO server platform and its connection to the media storage system
- **Firmware** — indicates the version of firmware loaded on the server's video hardware (this information is typically not retrievable if the LLM is currently running)
- **Software** — lists the installed media services and core components

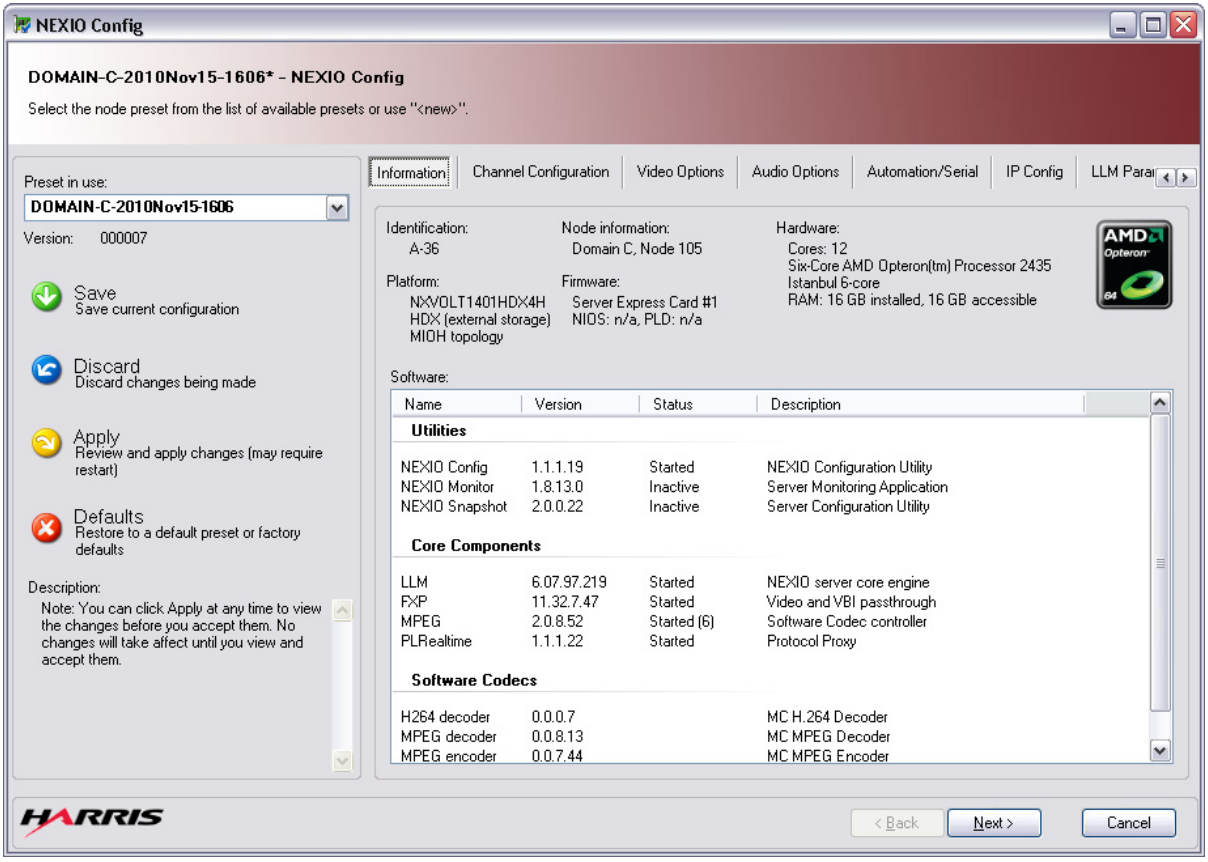

Figure 4-11 NEXIO Config — Information

Channel Configuration

The NEXIO Config **Channel Configuration** window (**Figure 4-12**) allows you to select the channel type and select options.

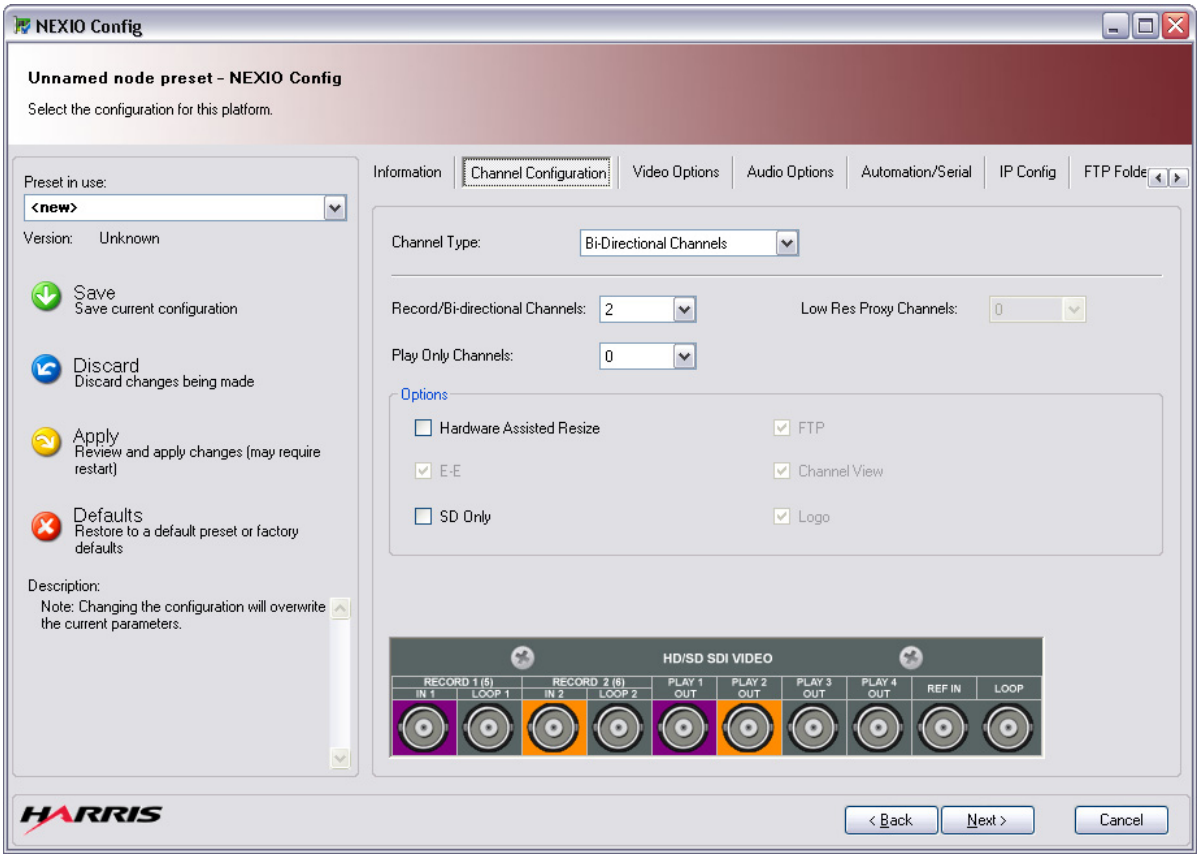

Figure 4-12 NEXIO Config — Channel Configuration

If a value appears in a box that is grayed out, the value is valid but cannot be edited. In addition, if a check box is selected and is grayed out, the option is enabled and cannot be disabled from this window.

To select a configuration and include or exclude options

1. In the **Channel Type** list, select the configuration for your system.
2. In the **Record/Bi-directional Channels** list, select the number of record or bi-directions channels.
3. In the **Play Only Channels** list, select the number of play out channels.
4.

5 In the **Options** area, select the check boxes for the options that you want to include, and clear the check boxes for the options that you want to exclude.

Video Options

The NEXIO Config **Video Options** window (**Figure 4-13**) allows you to specify the Global Configuration and the Channel Configuration for your system.

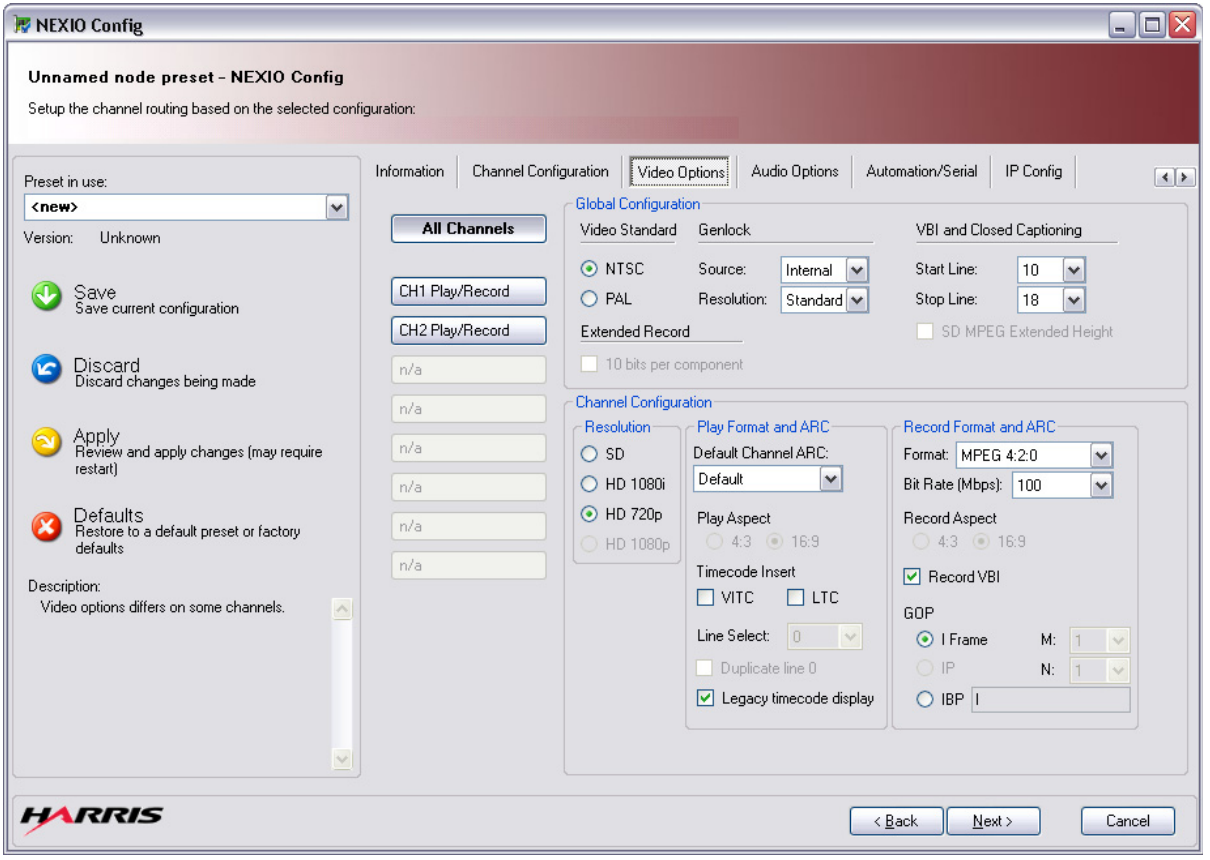

Figure 4-13 NEXIO Config — Video Options

To specify video options

1 Click **All Channels** to set the video configuration for all of the channels, or click the desired channel (e.g., **CH1 Play**) to configure a channel individually.

2 In the **Global Configuration** area, set the options described below:

Video Standard

- Under **Video Standard**, select the video standard (i.e., NTSC or PAL).

Genlock

- Under **Genlock**, select the source and resolution setting.

  The available **Source** settings are:

  - **Internal** — this uses the internal clock of the server rather than referencing to an external reference source.
  - **Input1** — this references the output video of all channels to the timing derived from video input 1.
  - **External** — this references the video outputs to the external reference signal applied to the REF IN connector. This is the recommended setting.

  The available **Resolution** settings are:

  - **Standard** — use for bi-level 525 or 625 line reference.
  - **HD1080i** — use for tri-level 1080i reference.
  - **HD720** — use for tri-level 720p reference.
  - **HD1080p** — use for tri-level 1080p reference.

VBI and Closed Captioning

a Under **VBI and Closed Captioning**, set the start and stop lines for stored closed captioning and other ancillary data. This data is stored as clip essence.

b Select the **SD MPEG Extended Height** check box to compress the ancillary data. This only applies to SD-only, MPEG 4:2:2 configurations.

Extended Record

a Select the **Extended Record** check box to increase the number of vertical pixels recorded to include those that make up the VBI data closed captioning. This saves space if the recorded VBI lines

are set to the same values. This only applies to SD MPEG 4:2:2 configurations.

3 In the **Channel Configuration** area, set the options described below:

Resolution

- In the **Resolution** area, select the desired resolution for the channel configuration (i.e., SD, HD 1080i, HD 720p, or HD 1080p). On a server configured for SD-only, 1080i and 720p options are not available.

Play Format and ARC

a Click the appropriate **Play Aspect** option, and then in the **Default Channel ARC** list select the ARC play format. For details on selecting the Play Aspect and Default Channel ARC see the appropriate section below:

SD 16:9 Aspect Ratio Output

For channels configured to play out SD media, it is important to identify the aspect ratio of the video output. If a channel is intended to display a 16:9 aspect ratio, click the 16:9 option, and then select the desired ARC setting. The selected ARC setting becomes the default ARC setting for any SD 4:3 clips (that do not have pre-defined ARC settings) loaded into that channel.

The available settings for a SD channel configured for a 16:9 aspect ratio are:

- **Default** — Uses the Pillar Box option to display the clip.
- **Anamorphic** — Stretches the clip in the horizontal dimension to fit the 16:9 frame.
- **Pillar Box** — Adds black bars on each side of the clip to fit the 16:9 frame.
- **Middle Cut** — Enlarges the clip on four sides to fit the 16:9 frame.
- **14:9 HD** — Changes the aspect ratio of the clip to 14:9.
- **21:9 HD** — Changes the aspect ratio of the clip to 21:9.

SD 4:3 Aspect Ratio Output

If a channel is intended to display a 4:3 aspect ratio, click the 4:3 option, and then select the desired ARC setting. The selected ARC setting becomes the default ARC setting for any SD 16:9 clips (that do not have pre-defined ARC settings) loaded into that channel.

The available settings for an SD channel configured for a 4:3 aspect ratio are:

- **Default** — Uses the Letter Box option to display the clip.
- **Anamorphic** — Shrinks the clip in the horizontal dimension to fit the 4:3 frame.
- **Letter Box** — Adds black bars to the top and bottom of the clip to fit the 4:3 frame.
- **Center Cut** — Crops the sides of the clip to fit the 4:3 frame.
- **14:9 SD** — Changes the aspect ratio of the clip to 14:9.
- **21:9 SD** — Changes the aspect ratio of the clip to 21:9.

For SD clips loaded into SD channels, the aspect ratio conversion has been disabled. Whether the SD clips have the 16:9 or the 4:3 aspect ratio flag enabled, they will be played out of all SD configured channels without an aspect ratio conversion applied.

HD Aspect Ratio Output

For channels configured to play out HD media, the aspect ratio of the video output is always 16:9.

Select the desired ARC setting from the list. The selected ARC setting becomes the default ARC setting for any SD 4:3 clips (that do not have pre-defined ARC settings) loaded into that channel.

The available settings for an HD channel configured for 16:9 aspect ratio are:

- **Default** — Uses the Pillar Box option to display the clip.
- **Anamorphic** — Stretches the clip in the horizontal dimension to fit the 16:9 frame.
- **Pillar Box** — Adds black bars on each side of the clip to fit the 16:9 frame.

- **Middle Cut** — Enlarges the clip on four sides to fit the 16:9 frame.
- **14:9 HD** — Changes the aspect ratio of the clip to 14:9.
- **21:9 HD** — Changes the aspect ratio of the clip to 21:9.

If an AFD flag is present on input, AFD-based ARC will be applied on playout as necessary. This will override the port based ARC settings automatically for media loaded into HD channels.

b Select the desired **Timecode Insert** check boxes (i.e., VITC and/or LTC). This will insert the clip's timecode data into the media play out so that downstream devices are able to interpret the current timecode of the clip that is playing out.

c In the **Line Select** list, select the desired line for the VITC output (i.e., 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20). This option is only applicable for SD-only clips and if VITC insert is selected.

d Select the **Duplicate line 0** check box if desired to add a duplicate line of the VITC output 2 lines later. For example, if you have VITC output on line 16, a duplicate of the output will appear on line 18. This option is only applicable for SD-only clips and if VITC insert is selected.

e Select the **Legacy timecode display** check box to report a channel's current output timecode based on the start time of a currently playing clip instead of the embedded timecode within the clip.

Record Format and ARC

a In the **Format** list, select the appropriate record format.

b In the **Bit Rate (Mbps)** list, select the appropriate bit rate for the format.

c Click the appropriate **Record Aspect** option.

d Select the **Record VBI** check box if you want to record the VBI information.

e Click the appropriate **GOP** option, and select the **M** and **N** value if applicable.

Audio Options

The **Audio Options** window (**Figure 4-14**) allows you to select the audio type, audio bits, audio tracks, and audio control for your configuration.

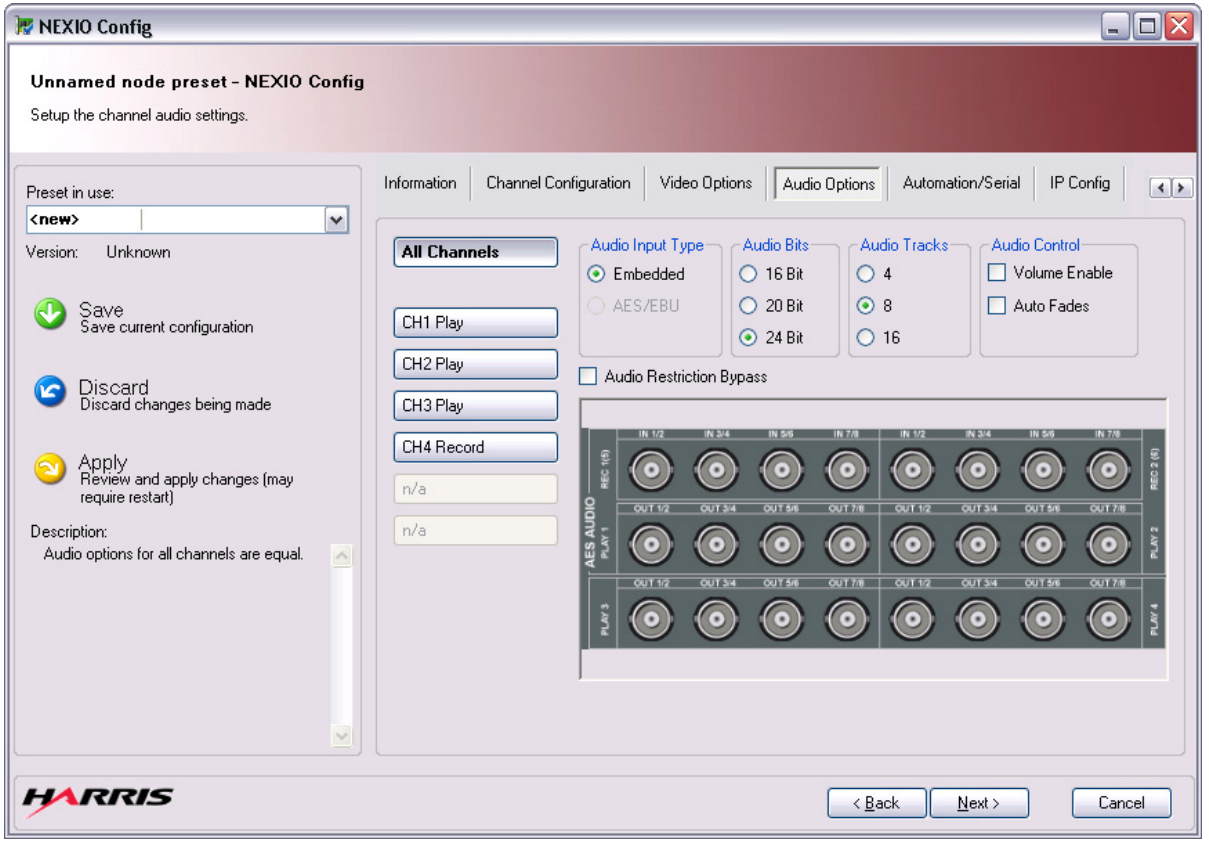

Figure 4-14 NEXIO Config — Audio Options

To specify audio options

1. Click **All Channels** to set the audio configuration for all of the channels, or click the desired channel (e.g., **CH1 Play**) to configure a channel individually.
2. In the **Audio Input Type** area, click **Embedded**.
3. In the **Audio Bits** area, click the number of bits per sample (i.e., 16 Bit, 20 Bit, or 24 Bit).
4. In the **Audio Tracks** area, select the number of audio tracks (i.e., 4, 8, or 16).

5 In the **Audio Control** area, select the desired controls (i.e., Volume Enable to control the volume of the audio, and/or Audio Fades to create an automatic fade between clips).

6 Select the **Audio Restriction Bypass** check box to allow audio that has restrictions to be accepted by an appropriate deck, regardless of compatibility.

*If you have compressed audio (e.g., Dolby), clear the **Volume Enable** and **Auto Fades** check boxes and do not manually adjust the volume.*

Automation/Serial

The **Automation/Serial** window (Figure 4-15) allows you to set control ports, general parameters, and VDCP parameters for your configuration.

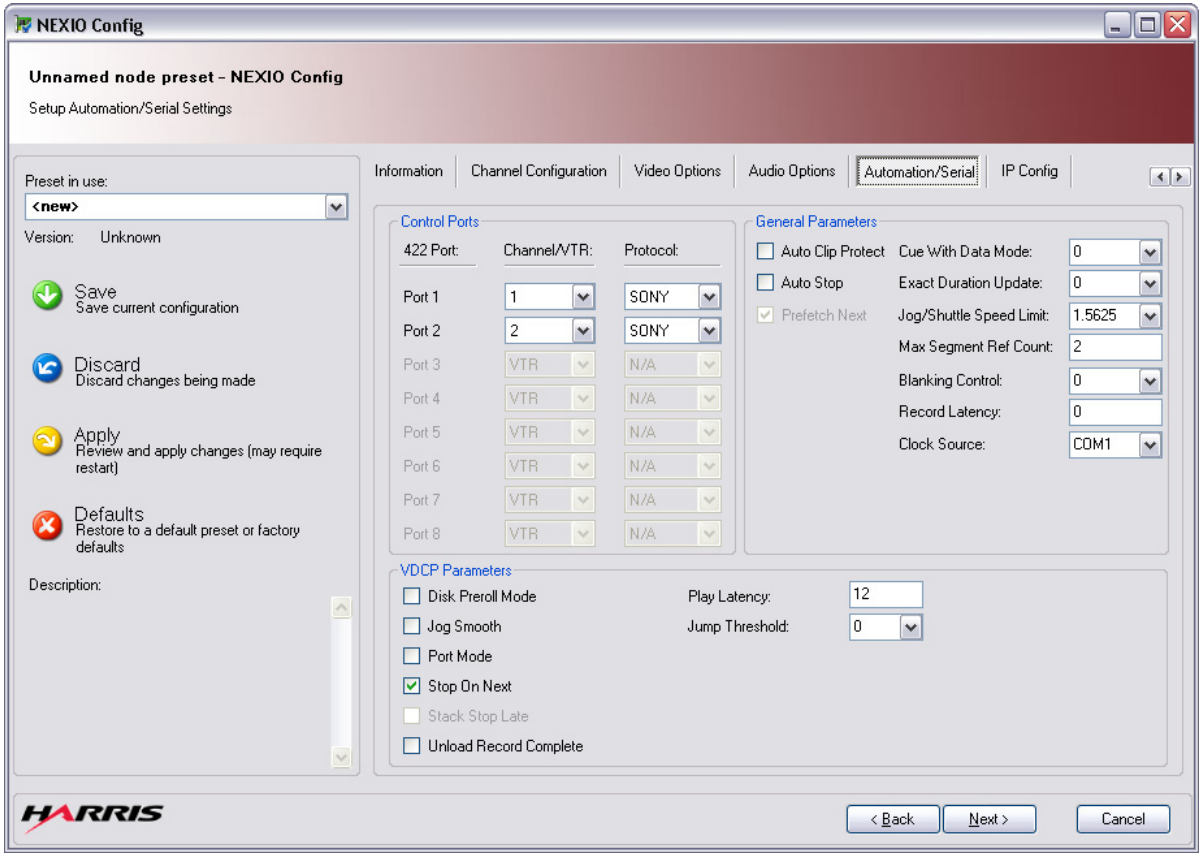

Figure 4-15 NEXIO Config — Automation/Serial

To specify each available 422 port

1 In the **Channel/VTR** list, select the channel that you want to assign to the port or select VTR to assign the port to a VTR.

2 In the **Protocol** list, select the desired protocol for the selected channel.

To specify general parameters

1 Select the **Auto Clip Protect** check box to prevent the deletion of any clip while cued or stacked.

- In the **Max Segment Ref Count** box enter a value greater than 0 to enable reference ID protection, which is required for auto clip protection to work. The default value is 2.

2 In the **Cue With Data Mode** list, select one of the following:

- **0** — to disable cue with data mode.
- **1** — cue commands verify that the cuepoint falls within the timecode bounds.
- **2** — if VDCP automation attempts a 2nd cue to an invalid point while the 1st cue is in progress, all cueing will be aborted, the CUED bit will be cleared, and the "Illegal Value" bit will be set.

3 In the **Exact Duration Update** list, select one of the following:

- **0** — to disable exact duration update.
- **1** — to guarantee that playback from any node of the system will not overrun the media written to disk.

4 In the **Jog/Shuttle Speed Limit** list, select the desired value. The default is 1.5625.

5 In the **Blanking Control** list, select one of the following:

- **0** — to disable automatic blanking.
- **1** — to enable automatic blanking.
- **2** — automatic blanking occurs when first clip is loaded and when outpoint is reached.

6 In the **Record Latency** box, enter the desired latency value of the record or edit. The minimum value is 6. The default value is 6.

7 In the **Clock Source** list, select one of the following:

- **COM1** or **COM2** — to sync the internal clock and Harris applications to an LTC TCC.
- **SYSTEM** — to lock the Harris applications to the Windows XP system clock.

To specify VDCP parameters

1. Select the **Disk Preroll Mode** check box to enable disk preroll. The amount of the preroll specified by the VDCP controller is added to any existing timecode offsets established for the channel.
2. Select the **Jog Smooth** check box to enable jog smooth. If the jump threshold is exceeded then VDCP Jog command performs a jump without a scrub, otherwise it performs a smooth jog with scrub.
   - In the **Jump Threshold** list, select one of the following:
     - **0** — to translate to CX.01/CX.02. This is the default.
     - **1** — to translate to C1.00/C4.00.
3. Select the **Port Mode** check box to enable port mode. This enables VDCP controllers to send record commands to a play port and play commands to a record port.
4. Select the **Stop On Next** check box to enable stop on next. During stacked (back-to-back ID) playout, the play channel will stop when it reaches the end of the current ID.
5. Select the **Unload Record Complete** check box to enable automatic record-channel unloading of completed recordings.
6. In the **Play Latency** list, enter the field value that you want between the receipt of a play-command and the time the first frame of video plays. The minimum value
   is 12.

Stack Stop Late *is not an available option.*

IP Config

The NEXIO Config **IP Config** window (**Figure 4-16**) allows you to specify the following network settings:

- Server and Order Configuration
- Network Settings
- LLM Domain and Node Settings
- High-Res Network Server (MIOH)
- Low-Res Settings

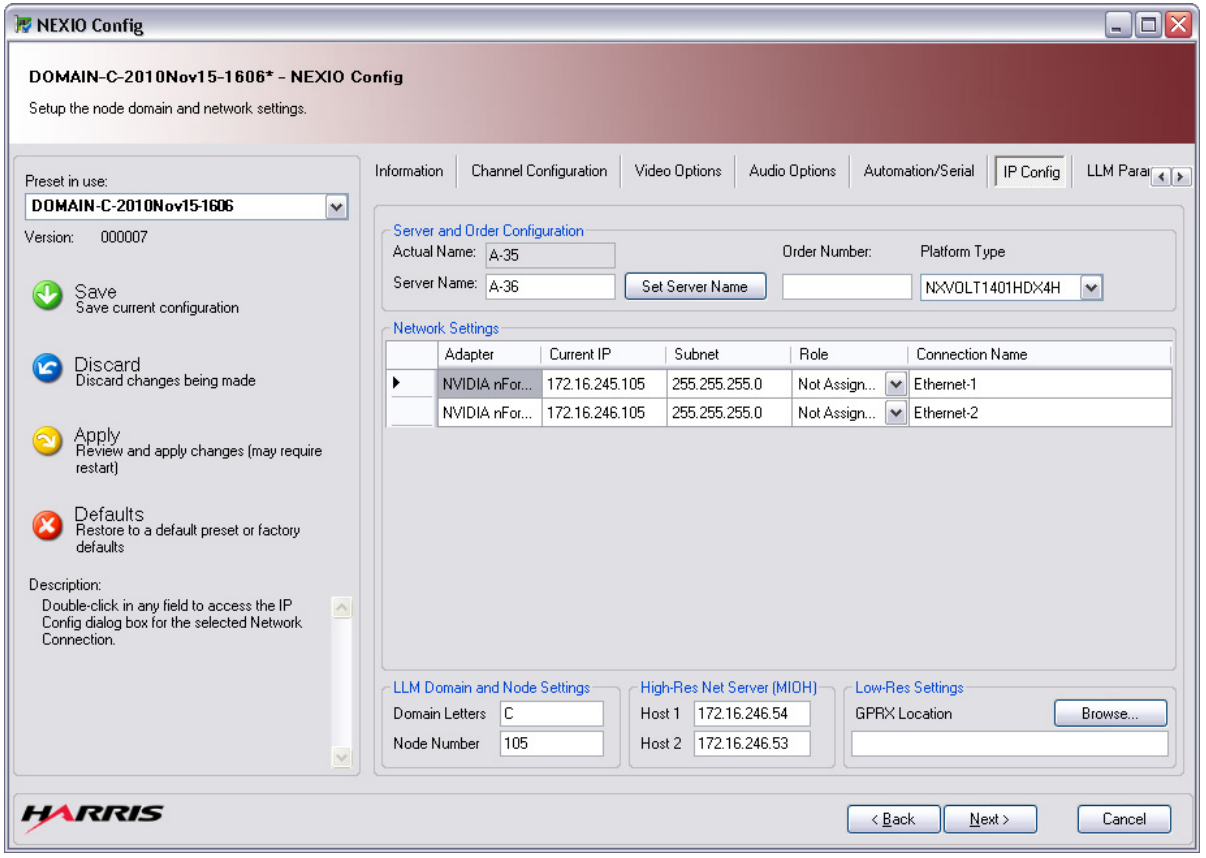

Figure 4-16 NEXIO Config — IP Config

To specify IP configuration settings

1 If you want to change the server name, in the **Server Name** box, type a new name for the server, and then click **Set Server Name**.

The **Set Server Name** dialog box appears asking you if you want to change the name (see **Figure 4-17**).

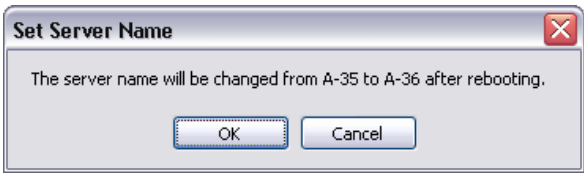

Figure 4-17 NEXIO Config — Set Server Name

- Click **OK** to change the name.

2 In the **Order Number** box, type the order number only if instructed to do so by Harris BCD Support.

3 In the **Platform Type** list, change the default platform type only if instructed to do so by Harris BCD Support. The Platform Type is read by the registry and should match the Platform information shown in the Node/Domain window.

The **Network Settings** area shows the current IP address, the subnet address, the role, and the connection name of the selected adapter. The arrow to the left of the Adapter column indicates which adapter is selected (see **Figure 4-18**).

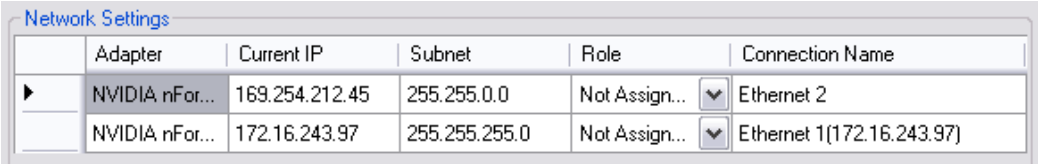

Figure 4-18 NEXIO Config — Network Settings

4 To change the current IP address or subnet mask, double-click in any of the **Network Settings** boxes to select that adapter and display the **IP Config** dialog box (see **Figure 4-19**).

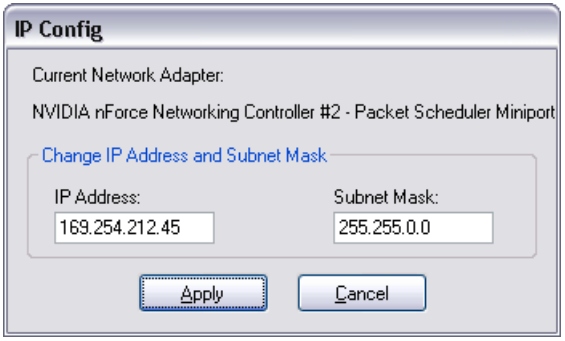

Figure 4-19 NEXIO Config — IP Config

- In the **IP Address** box, type the new IP address.
- In the **Subnet Mask** box, type the new subnet mask.
- Click **Apply** to save the changes and return to the IP Config window.

5 In the **LLM Domain and Node Settings** area, type the **Domain Letters** and **Node Number** in the appropriate boxes.

Do not set the Node Number greater than 127 or the LLM will not launch.

NEXIO Volt does not support low resolution content creation.

LLM Parameters

The NEXIO Config **LLM Parameters** window (**Figure 4-20**) allows you to view and change disk parameters, performance tuning, and NetDisk server parameters.

Do not change these settings unless you are instructed to do so by Harris BCD Support.

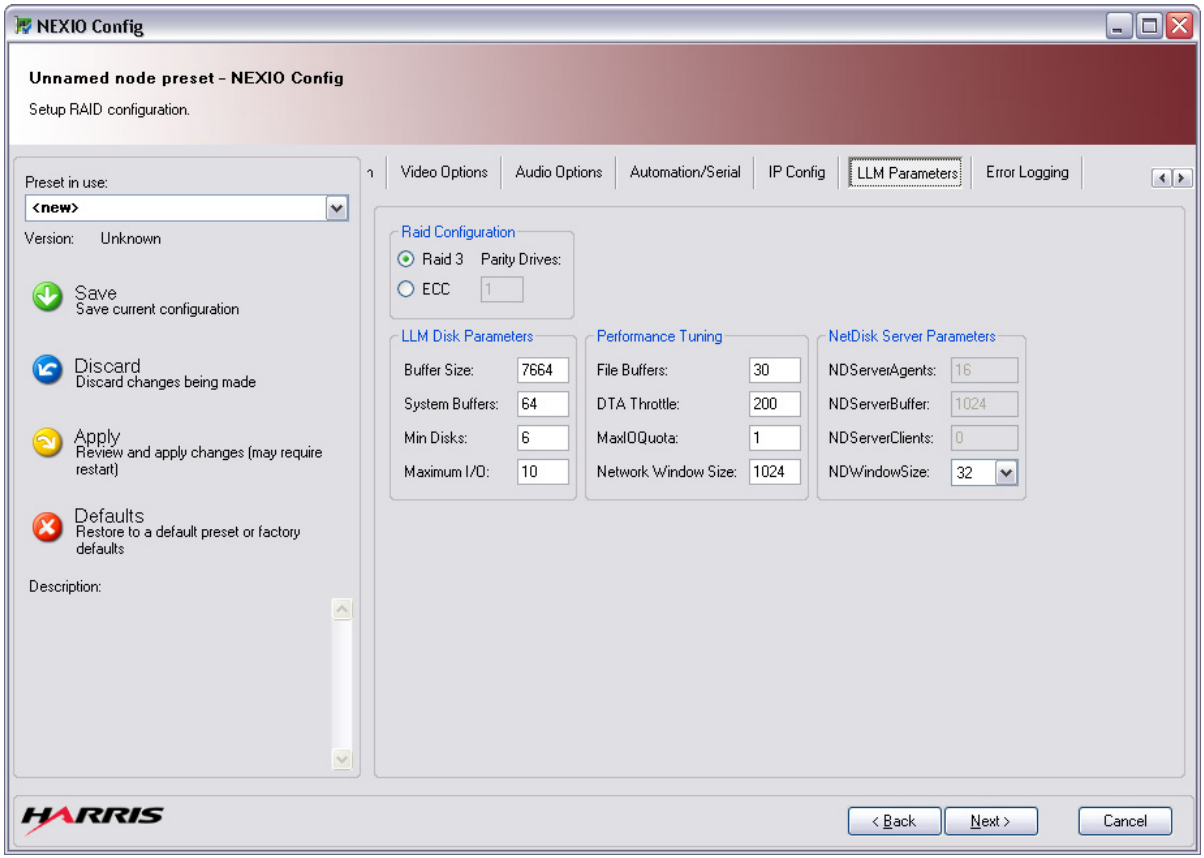

Figure 4-20 NEXIO Config — LLM Parameters

To change LLM parameters

1. In the **Raid Configuration** area, click the appropriate option.
2. In the **LLM Disk Parameters** and **Performance Tuning** areas, enter the new value(s) for the registry setting(s).
3. In the **NetDisk Server** area, select the appropriate value from the **NDWindowSize** list.

Error Logging

The NEXIO Config **Error Logging** window (**Figure 4-21**) allows you to set logging options for debugging. The Debug String defines what is written to the errlog.txt. This can be modified using the Debug Codes area. The number of days a log is kept and the size of the log options apply to the errlog.txt, tract.txt, traceVDCP.txt, and rwerrlog.txt. These logs are located in the **C:\VR\Logs\LLM** folder.

If these logs are not already created and you need help creating them, contact Harris Technical Support.

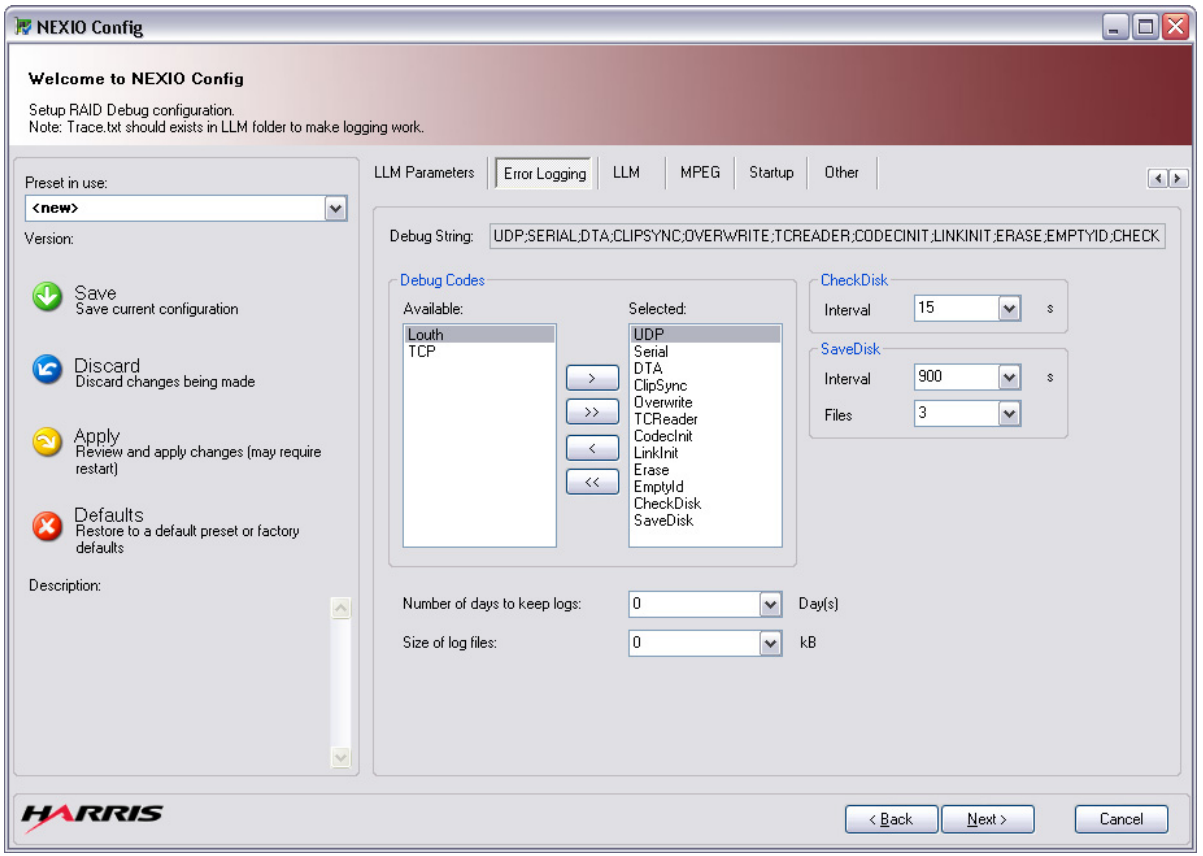

Figure 4-21 NEXIO Config — Error Logging

To change Error Logging settings

1. In the **Available** list, click the code that you want to include in the Debug String and click **>** to move it to the **Selected** list.
2. In the **Selected** list, click the code that you do not want to include in the Debug String and click **<** to move it back to the **Available** list.

Tip: Click **>>** to move all of the codes to the **Selected** list. Click **<<** to move all of the codes to the **Available** list.

All codes that appear in the Debug String are included in the errlog.txt file.

3. In the **Number of days to keep logs** list, select the number of days that you want the logs to be saved.

Tip: It is recommended that you select a minimum of 3 days to keep the logs so that they are saved through the weekend.

4. In the **Size of log files** list, select the maximum size in kB for the log files.

Tip: It is recommended that you select at least 32000 kB for the log files.

5. In the **CheckDisk** area **Interval** list, select the desired time (in seconds) that you want between LLM integrity checks (i.e., 15, 30, 60, 120, 340).

*When CheckDisk is added to the Debug String, the **CheckDisk** area becomes available. The LLM performs an integrity check on the FAT table held in RAM at the selected time interval.*

6. In the **SaveDisk** area:
   - In the **Interval** list select the desired time (in seconds) that you want between FAT snapshots (i.e., 900, 1800, 3600, 7200).
   - In the **Files** list select the desired number of files that you want to save in the snapshot (i.e., 3, 4, 5, 6, 7, 8, 9, 10).

LLM

The NEXIO Config **LLM** window (**Figure 4-22**) allows you to view and change various LLM registry settings. The name, type, data value, and status of each parameter is shown.

Do not change these settings unless you are instructed to do so by Harris BCD Support.

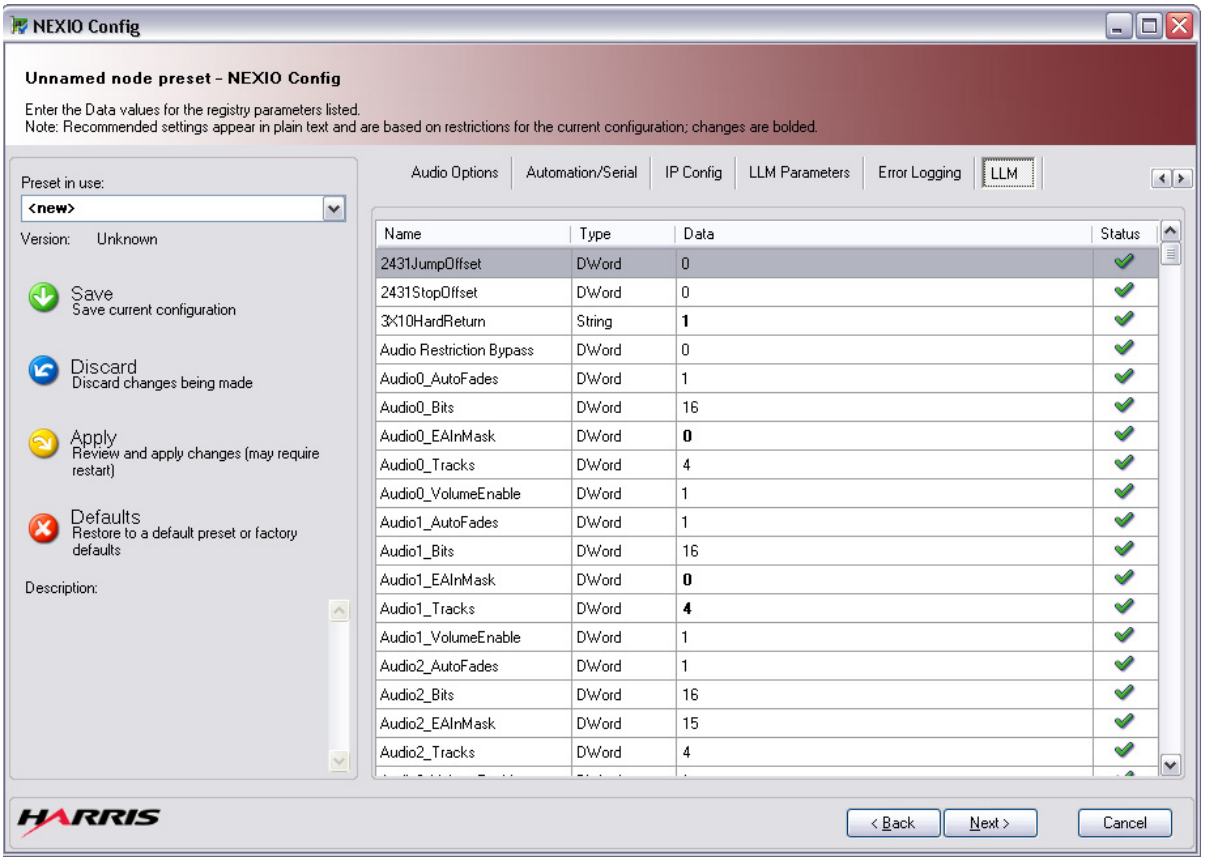

Figure 4-22 NEXIO Config — LLM

To change LLM registry settings

1. Double-click in the **Data** column of the registry setting that you want to change.
2. Type the new value for the registry setting. Changed values appear in bold.

The status of each parameter appears in the **Status** column. The status icons are described below:

green check mark — indicates that the LLM parameter currently exists in the registry.

green plus sign — indicates that the LLM parameter is absent in the registry and will be created.

red minus sign — indicates that the LLM parameter will be deleted.

purple question mark — indicates that the LLM parameter has no meaning in the current configuration.

yellow exclamation mark — indicates that the LLM parameter has been manually changed and does not meet the predefined rules.

MPEG

The NEXIO Config **MPEG** window (**Figure 4-23**) allows you to view and change various MPEG registry settings. The name, type, data value, and status of each parameter is shown.

Do not change these settings unless you are instructed to do so by Harris BCD Support.

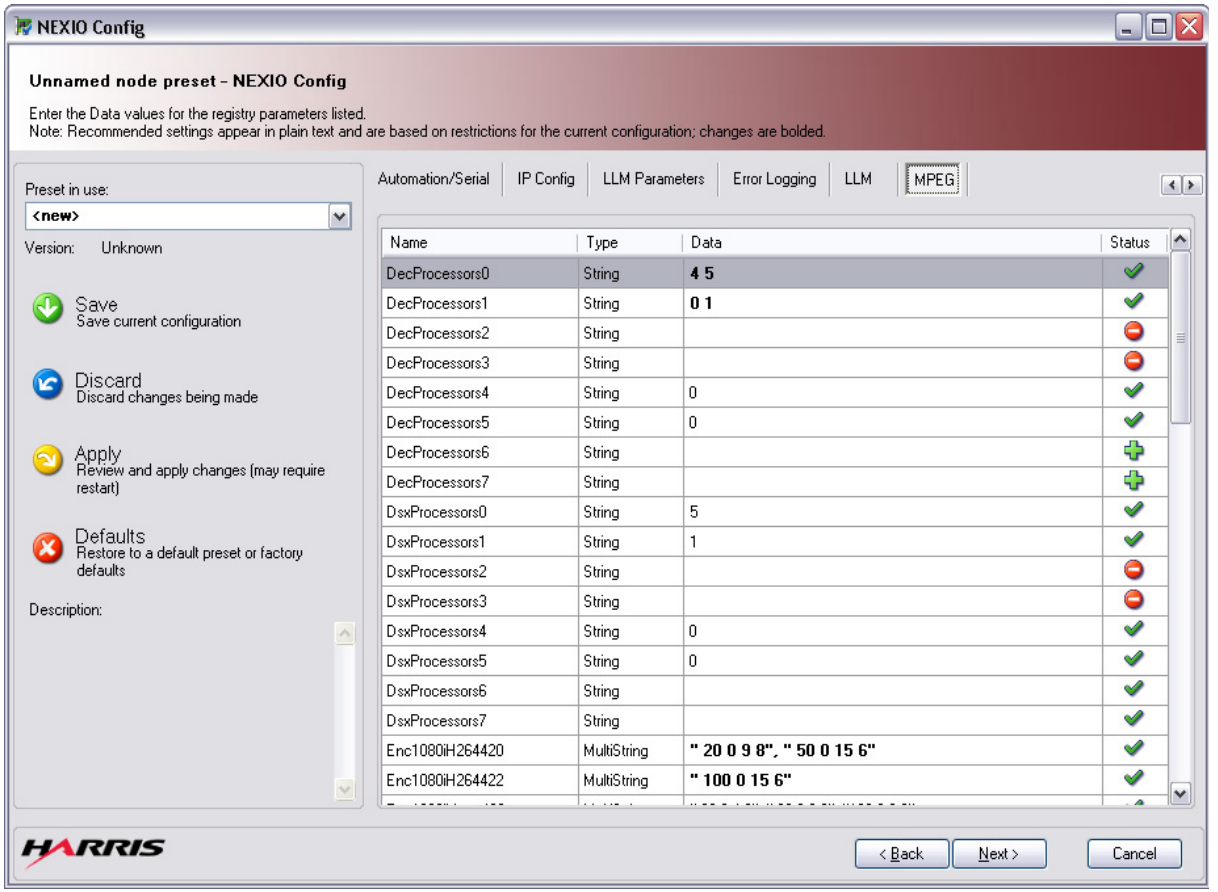

Figure 4-23 NEXIO Config — MPEG

To change MPEG registry settings

1. Double-click in the **Data** column of the registry setting that you want to change.
2. Type the new value for the registry setting. Changed values appear in bold.

The status of each parameter appears in the **Status** column. The status icons are described below:

green check mark — indicates that the MPEG parameter currently exists in the registry.

green plus sign — indicates that the MPEG parameter is absent in the registry and will be created.

red minus sign — indicates that the MPEG parameter will be deleted.

purple question mark — indicates that the MPEG parameter has no meaning in the current configuration.

yellow exclamation mark — indicates that the MPEG parameter has been manually changed and does not meet the predefined rule.

Startup

The NEXIO Config **Startup** window (**Figure 4-24**) enables you to change the install location of the specified applications and their startup parameters.

Do not change these settings unless you are instructed to do so by Harris BCD Support.

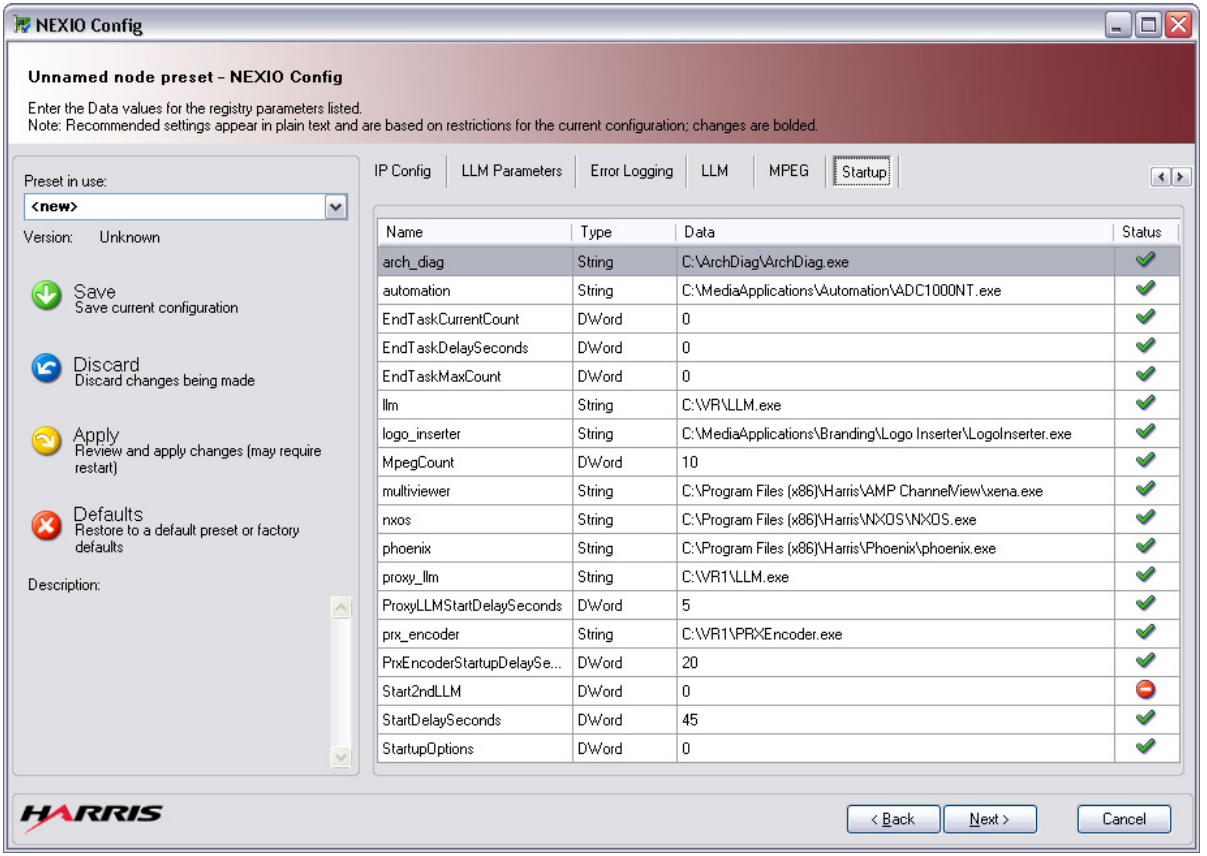

Figure 4-24 NEXIO Config — Startup

To change Startup registry settings

1. Double-click in the **Data** column of the registry setting that you want to change.
2. Type the new value for the registry setting. Changed values appear in bold.

The status of each parameter appears in the **Status** column. The status icons are described below:

green check mark — indicates that the parameter currently exists in the registry.

green plus sign — indicates that the parameter is absent in the registry and will be created.

red minus sign — indicates that the parameter will be deleted.

purple question mark — indicates that the parameter has no meaning in the current configuration.

yellow exclamation mark — indicates that the parameter has been manually changed and does not meet the predefined rules.

Other

The NEXIO Config **Other** window (**Figure 4-25**) allows you to view and change various additional registry settings. The name, type, data value, and status of each parameter is shown.

Do not change these settings unless you are instructed to do so by Harris BCD Support.

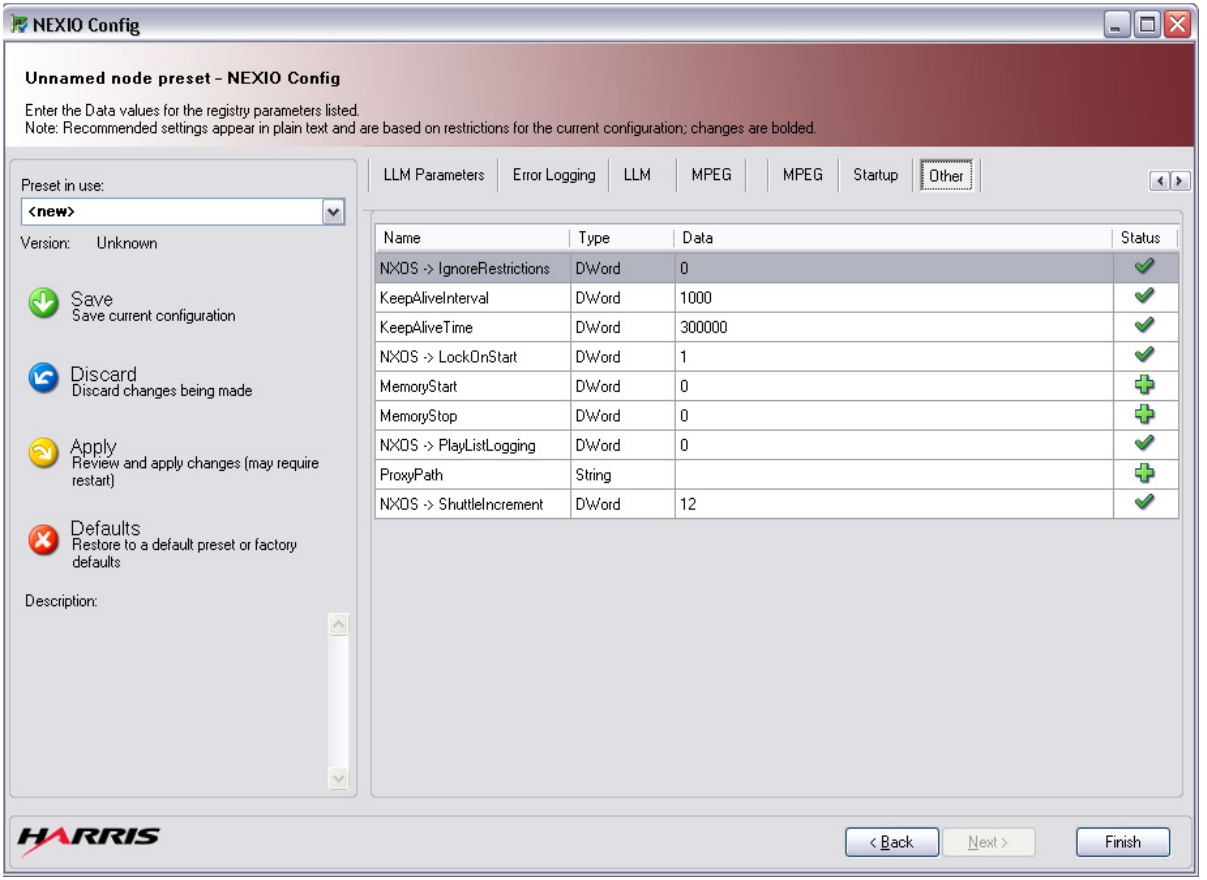

Figure 4-25 NEXIO Config — Other

To change Other registry settings

1. Double-click in the **Data** column of the registry setting that you want to change.
2. Type the new value for the registry setting. Changed values appear in bold.

The status of each parameter appears in the **Status** column. The status icons are described below:

green check mark — indicates that the parameter currently exists in the registry.

green plus sign — indicates that the parameter is absent in the registry and will be created.

red minus sign — indicates that the parameter will be deleted.

purple question mark — indicates that the parameter has no meaning in the current configuration.

yellow exclamation mark — indicates that the parameter has been manually changed and does not meet the predefined rules.

5 Monitoring Status and Using the LCD

This chapter describes how to monitor the general health and status of Product Code using the LED indicators and NEXIO Monitor. It also describes how to use the LCD user interface to control alarms and applications, view status, and configure templates and node settings.

This chapter contains the following topics:

LED Indicators

The LED indicators are on the front of Product Code (see **Figure 5-1**). The following describes each LED indicator:

- **TEMP —** monitors the temperature of NEXIO Volt
- **FAN —** monitors the status of the fan
- **PS —** monitors the status of the power supplies
- **MEDIA —** monitors the status of the LLM

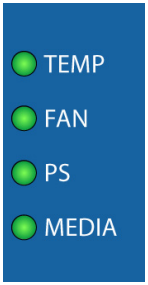

Figure 5-1 Product Code Front Panel LED Indicators

The LED indicator status states are shown below.

Table 5-1 LED Indicator Status States

LED	Description
Solid Green	Status is good.
Solid Red	Status is bad.

NEXIO Monitor

In addition to the front panel LED indicators, Product Code has local machine monitoring software called NEXIO Monitor. NEXIO Monitor is software that runs as an application in your Windows system tray (see **Figure 5-2**).

Figure 5-2 NEXIO Monitor Icon

It monitors the same diagnostics as the front panel LED indicators. These diagnostics include:

- CPU fan power
- Motherboard/processor temperature
- LLM faults (see the *NEXIO Low Level Module User Guide* for details)
- Power supply status

To open NEXIO Monitor

1 Right-click on the **NEXIO Monitor** icon in the system tray (see **Figure 5-3**).

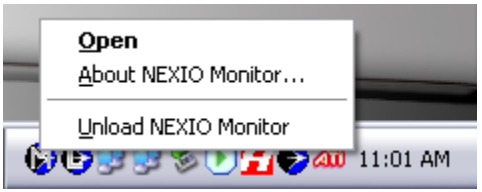

Figure 5-3 Open NEXIO Monitor

2 Click **Open**.

The **NEXIO Monitor** window appears (see **Figure 5-4**).

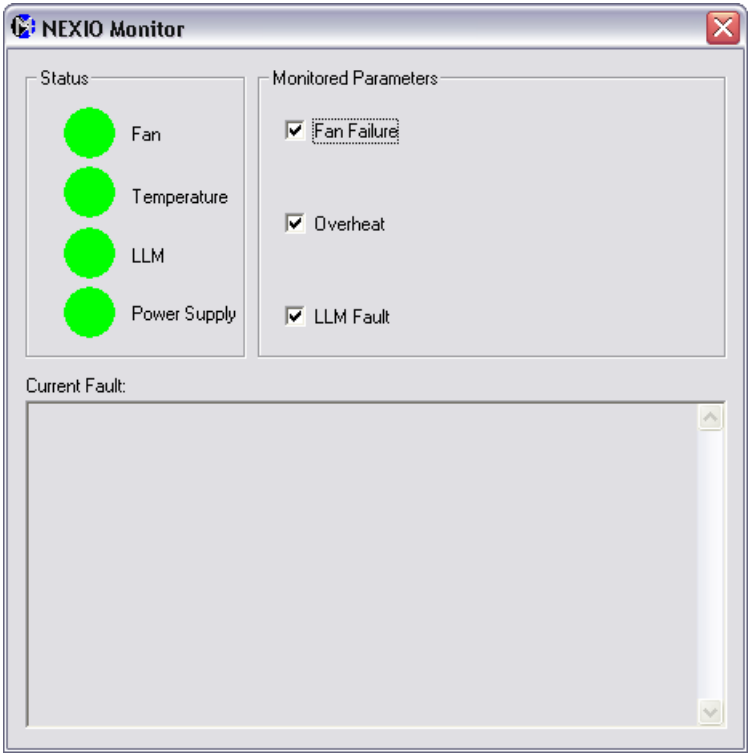

Figure 5-4 NEXIO Monitor Window

Selecting Monitored Diagnostics

NEXIO Monitor allows you to select which diagnostics to monitor. You can select the following diagnostics:

- Fan Failure — fan
- Overheat — temperature of CPU
- LLM Fault — LLM functions

By default, the following diagnostics are selected:

- Fan Failure
- Overheat
- LLM Fault

To select a diagnostic

In the **Monitored Parameters** area, select the check box of the desired diagnostic (see **Figure 5-5**). The selected diagnostic will be monitored.

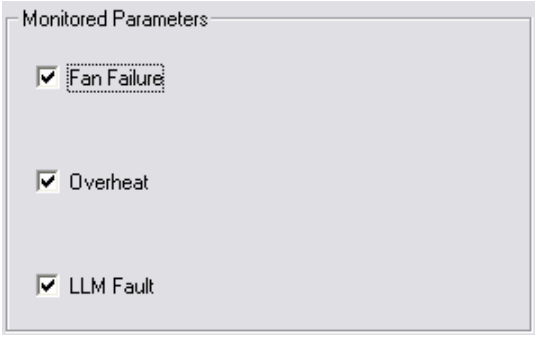

Figure 5-5 Monitored Parameters Area

To deselect a diagnostic

In the **Monitored Parameters** area, clear the check box of the desired diagnostic. The cleared diagnostic will not be monitored.

Checking Status

The Status area displays the current status of the four major diagnostics (see **Figure 5-6**):

- Fan
- Temperature
- LLM
- Power Supply

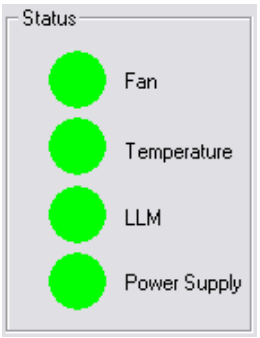

Figure 5-6 Monitored Parameters Area

See **Table 5-2** for a description of the diagnostic status icons.

Table 5-2 Status Icons

Icon	Description
	Indicates a critical problem with the fan.
	Indicates a critical problem with the CPU temperature.
	Indicates a critical problem with the LLM.
	The solid green circle indicates the diagnostic is operating with no errors.

LCD User Interface

The LCD and LCD keypad work together to provide a user interface that enables you to control alarms and applications, view status, and configure templates and node settings.

LCD

The LCD home screen appears when NEXIO Volt is powered on. The home screen shows the product name, customer support number, serial number, and the contract ID (see **Figure 5-7**).

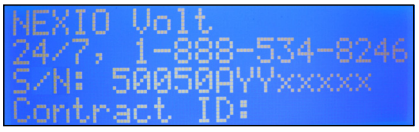

Figure 5-7 LCD Home Screen

The LCD keypad is used to control the LCD as described in the following section.

LCD Keypad

The LCD keypad has four directional arrow buttons, a home button, and an enter button that enable you to navigate through the LCD menu structure and enter information.

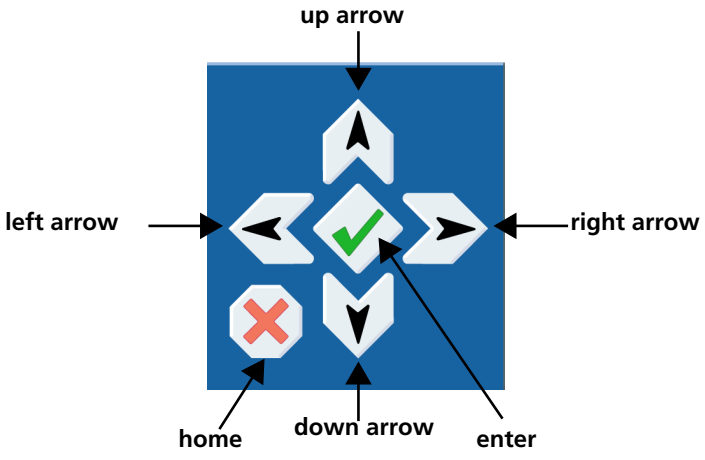

Figure 5-8 LCD Keypad Buttons

The LCD menu structure showing the available options is shown in **Figure 5-9**.

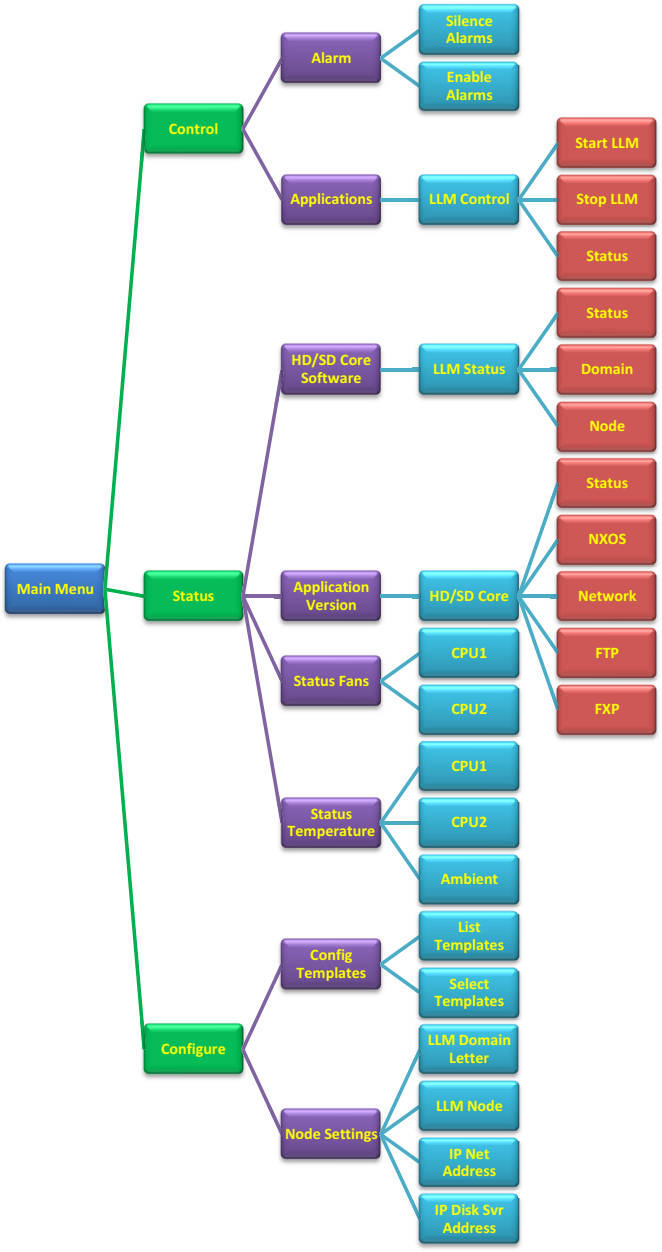

Figure 5-9 LCD Menu Structure

The following three options appear on the **Main Menu** (see **Figure 5-10**).

*To access the Main Menu, press the right arrow button on the keypad (see **Figure 5-8**).*

- **Control** — enables you to control the alarms, and the LLM.
- **Status** — enables you to view the status of the HD/SD core software, the application version, the CPU fans, and the CPU temperatures.
- **Configure** — enables you to view and select NEXIO Config templates when available.

The diamond shows the selected option, and the arrow indicates that there are additional submenus.

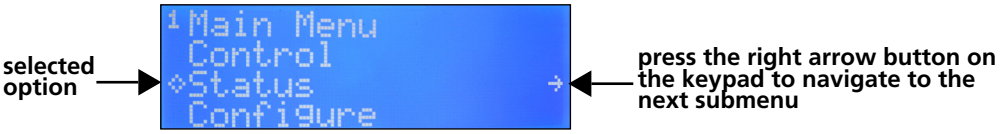

Figure 5-10 LCD Main Menu

*To return home at any time, press the home button on the keypad (see **Figure 5-8**).*

The following examples show how to use each of the Main Menu options:

- The **control** example shows how to silence alarms.
- The **status** example shows how to view the temperature of CPU2.
- The **configure** example shows how to change an IP address.

To control the system

1. From the **Main Menu**, press the up or down arrow button to select the appropriate option (for this example, select **Control**).
2. Press the right arrow to display the submenu.
3. Press the up or down arrow to select the appropriate option (for this example, select **Alarm**).
4. Press the right arrow button to display the next submenu.
5. Press the up or down arrow to select the appropriate option (for this example, select **Silence Alarms**).
6. Press the enter button to activate the control.

To view status

1. From the **Main Menu**, press the up or down arrow button to select the appropriate option (for this example, select **Status**).
2. Press the right arrow to display the submenu.
3. Press the up or down arrow to select the appropriate option (for this example, select **Status Temperature**).
4. Press the right arrow button to display the next submenu.
5. Press the up or down arrow to select the appropriate option (for this example, select **CPU2**).
6. View the status.

To configure the system

1. From the **Main Menu**, press the up or down arrow button to select the appropriate option (for this example, select **Configure**).
2. Press the right arrow to display the submenu.
3. Press the up or down arrow to select the appropriate option (for this example, select **Node Settings**).
4. Press the right arrow button to display the next submenu.
5. Press the up or down arrow to select the appropriate option (for this example, select **IP Net Address**).
6. Press the enter button to display the cursor.
7. Press the right or left arrow button to move the cursor.
8. Press the up or down arrow to select the new value.
9. Press the enter button to set the new value.

If you select a value that is not appropriate for the system, the enter button returns the value to its original setting.

If the LCD user interface is not used within six minutes the home screen reappears.

6 RS-422 Pinouts

This chapter provides RS-422 pinout information for NEXIO Volt Slave and Master RJ-12 connectors.

NEXIO Volt RS-422 Pinouts

The NEXIO Volt includes four RJ-12 connectors (see **Figure 6-1**). See **Table 6-1** for the pinout descriptions.

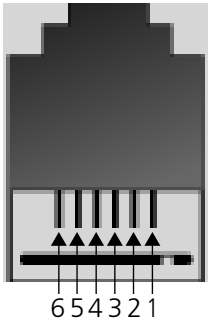

Figure 6-1 NEXIO Volt RJ-12 Connector

Table 6-1 shows the slave pinout configuration for the male and female RJ-12 connectors.

Table 6-1 RJ-12 RS-422 - Slave Male and Female Configuration

RJ-12 Connector	Function	Identification
1	RC+	RS-422 plus side input
2	RC-	RS-422 minus side input
3	TX-	RS-422 minus side output
4	TX+	RS-422 plus side output
5	Shield	Shield RS-422
6	Not Used	Not Used

Table 6-2 shows the master pinout configuration for the male RJ-12 connector.

Table 6-2 RJ-12 RS-422 - Master Male Configuration

RJ-12 Connector	Function	Identification
1	TX+	RS-422 plus side output
2	TX-	RS-422 minus side output
3	RC-	RS-422 minus side input
4	RC+	RS-422 plus side input
5	Shield	Shield RS-422
6	Not Used	Not Used

7 Troubleshooting

This chapter describes how to remove, replace, and rebuild the solid state drive on the NEXIO Volt.

Replacing the Boot Drive

If you have NEXIO Remote installed and a boot drive is bad, a message appears on your PC indicating that there is a RAID Access Failure.

To remove a drive

1. Press the drive release button.
2. Pull the drive release lever out.
3. Pull the drive out.

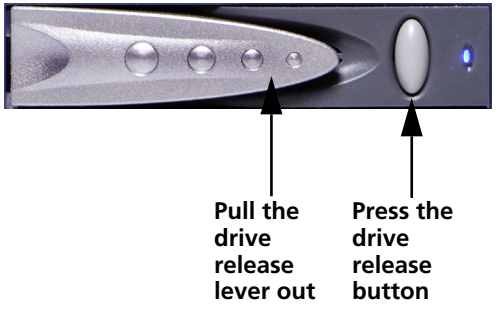

Figure 7-1 Drive Replacement

If your product has a different drive or you need help removing a drive, contact Harris BCD Support.

4 Insert the new drive, and allow it to spin up.

The Rebuild process should begin automatically. If the Rebuild process does not begin automatically, follow the procedure below to manually start the Rebuild.

To manually start the Rebuild

1 During the system reboot (after the Memory Count appears), press **F10**.

The **MediaShield BIOS Array List** appears.

2 Press **Enter**.

The **NVIDIA Mirror RAID Detail** window appears showing the information for the new drive.

3 Press the **R (Rebuild)** key.

The **NVIDIA Mirror Select From Free Disk List** appears.

4 Press the **A (Add)** key.

A message appears asking if you want to Rebuild the array.

5 Press **Enter** to accept the Rebuild.

A message appears indicating that all the data on the new (or added) disk will be overwritten, and asks you if you want to continue.

6 Press the **Y (Yes)** key.

The **MediaShield BIOS Array List** reappears. The status indicates "Rebuild".

7 Press **Ctrl X (Exit)** to exit and reboot the system.

The Rebuild processes in the background. A message appears when the Rebuild is complete.

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