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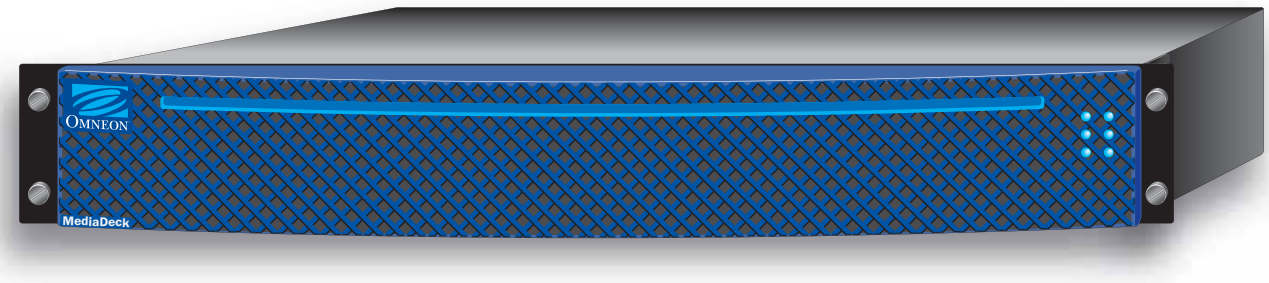
Omneon MediaDeck™

User's Guide

Release 6.4



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Software Release

Release 6.4

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Convention on Contracts for the International Sale of Goods is disclaimed. If any claim arises out of this Agreement, the parties hereby submit to the exclusive jurisdiction and venue of the federal and state courts located in Santa Clara County, California. In addition to any other rights or remedies, we shall be entitled to injunctive and other equitable relief, without posting bond or other security, to prevent any material breach of this Agreement. We may change the terms, conditions and pricing relating to the future licensing of our Systems and other intellectual property rights, including this Agreement, from time to time. No waiver will be implied from conduct or failure to enforce rights nor effective unless in a writing signed on behalf of the party against whom the waiver is asserted. If any part of this Agreement is found unenforceable, the remaining parts will be enforced to the maximum extent permitted. There are no third-party beneficiaries to this Agreement. We are not bound by additional and/or conflicting provisions in any order, acceptance, or other correspondence unless we expressly agree in writing. This Agreement is the complete and exclusive statement of agreement between the parties as to its subject matter and supersedes all proposals or prior agreements, verbal or written, advertising, representations or communications concerning the System.

Every reasonable attempt has been made to comply with all licensing requirements for all components used in the system. Any oversight is unintentional and will be remedied if brought to the attention of Harmonic at support@omneon.com.

DOC-0001

Revised 7/28/2008

Rev A

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Shielded cables must be used to ensure compliance with the FCC Class A limits.

Canadian EMC Notice of Compliance

English: This digital apparatus does not exceed the Class A limits for the radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Commerce.

French:

Le prèsent appareil numérique n'émet pas de bruits radioélectriques dèpassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

EU Manufacturer's Declaration of Conformity

We: Harmonic Inc.

Declare under our sole responsibility that the products identified below comply with the following EU Directives and Harmonized Standards stated.

Applicable EU Directives for the Omneon MediaDeck:

Parameter	Specification	Detail
CE	Low Voltage Directive (73/23/EEC) including amendments	EN60950-1: 1992, A1 + A2 + A3 + A4 Safety of Information Technology Equipment
EMC	FCC Part 15, ICES-003 ICES-003 Directive of Electromagnetic Compatibility EN55022: 1998 EN55024: 1998 CISPR 22	Class A for Digital Equipment, USA Class A for Digital Equipment, Canada (89/336/EEC) including amendments Emissions from Information Technology Equipment Immunity for Information Technology Equipment Class A Others

The Technical File is available to proper authorities and the product is marked.

Korean Compliance

기종별	사용자 안내문
A급 기기 (업무용 정보통신기기)	이기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 구입 하였을 때에는 가정용으로 교환하시기 바랍니다.

Safety

For the Omneon MediaDeck, Omneon MediaDeck SD Module, and Omneon MediaDeck Multi-Rate MPEG-2 HD Modules:

- UL 670950-1, 1st Edition
- CSA C22.2 No. 60950-1-03, 1st Edition

Additional Certification, Compliance and EMC Data

Additional certification, compliance and EMC data is listed in the **Omneon MediaDeck Specifications** section of this guide.

Important Safeguards and Notices

This section provides important safety guidelines for both the Operator and Service Personnel. Specific warnings and cautions are found throughout the guide where they apply, but may not appear here. Please read and follow the important safety information, noting especially those instructions related to risk of fire, electric shock or injury to persons.

Safety Symbols

Hazardous Voltage symbol.

Caution symbol.

The product is marked with this symbol when it is necessary to refer to the manuals to prevent damage to the product.

Warnings

Please observe the following important warnings:

- Any instructions in this guide that require opening the chassis, changing a power supply, or removing a board should be performed by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing unless you are qualified to do so.
- Heed all warnings on the unit and in the operating instructions.
- Do not use this product in or near water. Disconnect AC power before installing any options or servicing the unit unless instructed to do so by this manual.
- This product is grounded through the power cord grounding conductor. To avoid electric shock, plug the power cord into a properly wired receptacle before connecting the product inputs or outputs.
- Route power cords and other cables so that they are not likely to be damaged. Disconnect power before cleaning. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on. Do not insert anything into either of the system's two power supply cavities with power connected.
- Do not wear hand jewelry or watches when troubleshooting high current circuits, such as the power supplies.
- To avoid fire hazard, use only the specified correct type, voltage and current rating as referenced in the appropriate parts list for this product. Always refer fuse replacement to qualified service personnel.

Cautions

Please observe the following important cautions:

- When installing this equipment, always comply with the National Electrical Standard and local electrical standard for attachment of the power cords.
- Risk of explosion if battery is replaced incorrectly or with an incorrect type. There are no user-serviceable batteries inside Omneon products. Refer servicing to Omneon qualified personnel only. Dispose of batteries according to the instructions.
- Use only specified replacement parts.
- Follow static precautions at all times when handling this equipment.
- Slots and openings in the chassis are provided for ventilation. Do not block them. Leave the back of the frame clear for air exhaust cooling and to allow room for cabling — a minimum of 6 inches (15.25 cm) of clearance is recommended.

Contents

Introduction

This document provides in-depth information on setting up and operating the Omneon MediaDeck in the following sections:

- Introduction (this section) provides the following topics:
  - **Omneon MediaDeck Documentation Suite**
  - **Documentation Terms and Abbreviations**
  - **Rules for System LEDs**
  - **Available Media and Wrapper Formats**
  - **Audio Track Types and Media Wrapper Formats**

Part I Installing and Using the Omneon MediaDeck

- **Installing the Omneon MediaDeck System** provides step-by-step instructions for installing an Omneon MediaDeck.
- **Running SystemManager and Creating a File System** provides instructions for logging onto the SystemManager application, and creating a file system and RAID set.
- **Creating a Player** describes how to create a player and attach the player to a device.
- **Omneon MediaDeck Configuration** provides configuration and operation instructions for the Omneon MediaDeck, including how to configure the Omneon MediaDeck I/O modules, storage, and file system.
- **Installing and Using ClipTool™** provides installation and operation instructions for the Microsoft* Windows* version of ClipTool.

Part II Hardware Reference

- **Omneon MediaDeck Orientation** provides reference information for the Omneon MediaDeck processor module and power supply.
- **Omneon MediaDeck Module Orientation** provides reference information for the following MediaDeck Modules:
  - **5000 Series SD MPEG-2/DV MediaDeck Module**
  - **5220 Series SD MPEG-2 Dual I/O MediaDeck Module**
  - **5320 Series HD/SD MPEG-2 Dual I/O MediaDeck Module**
  - **5400 Series HD/SD MPEG-2/DV Simulcast MediaDeck Module**

- **5500 Series HD/SD MPEG-2/DV Playback MediaDeck Module**

- **Omneon MediaDeck Storage Orientation** provides reference information for the Omneon MediaDeck storage system.

Omneon MediaDeck Documentation Suite

Table 1 describes the documents which comprise the Omneon MediaDeck Documentation Suite. All items are available for download from the Omneon Support Server at the following location:

ftp://ftp.omneon.com/updates/omneon/current/MediaDeck/

All files on the Omneon Support Server are password protected. Refer to the *Omneon MediaDeck Read Me First* provided in your MediaDeck kit for the passwords to access the necessary files. Documents are in .pdf and are packaged as follows:

- **SMediaDeckRlsNotes<version#>.exe** contains the Release Notes and the Read Me First
- **SMediaDeckDocs<version#>.exe** contains all other components of the Omneon MediaDeck Documentation Suite

Table 1. MediaDeck Documentation Suite

This document...	Provides this information...
Omneon MediaDeck User's Guide	• System installation • Configuration and operation of players • Installation and operation instructions for ClipTool™ • I/O module, processor module, storage, and file system configuration and maintenance • Orientation to system components including the processor board, disk drives, and I/O module
Omneon MediaDeck Installation Guide	system installation
Omneon MediaDeck and Component Replacement Guide	component replacement instructions
Omneon MediaDeck Release Notes	last minute information regarding a product release
Omneon MediaDeck Read Me First	• passwords for downloading MediaDeck and SystemManager files • instructions for obtaining and installing the license file for SystemManager • installation overview

For the SystemManager documentation, navigate to:

ftp://ftp.omneon.com/updates/omneon/current/SystemManager

SystemManager documents are packaged as follows:

- **SOmneonRlsNotes<version#>.exe** contains the Release Notes and Installation Guide
- **SOmneonManager<version#>.ex** contains the all other components of the SystemManger documentation suite.

Acrobat* Reader* is needed to view the product documentation. Download this for free from: **http://www.adobe.com**.

Locating the Latest Documentation on the Omneon Website

The latest product documentation, as well as information provided for older releases, is available on the Omneon website at: **http://www.omneon.com/service-support/documentation.php**

Documentation Terms and Abbreviations

The following terms are used throughout this documentation:

- **DV** refers to Digital Video, a compressed digital video format for sound and picture.
- **DVE** refers to Digital Video Effects.
- **Embedded** refers to two different concepts in this guide:
  - The first usage is the embedding of audio data in SDI video streams. The Omneon system can input and output audio data either separately (on AES/EBU connections), or *embedded* within the SDI video stream.
  - The second usage pertains to the recording of VBI data. The Omneon system gives the option of embedding VBI data within an MPEG file, or recording the VBI data in a separate file
- **Frame** or **Chassis** both refer to the specific hardware component of an Omneon device such as an Omneon MediaDeck.
- **Hot Swappable** refers to an electronics board or component (such as a fan or disk drive) that can be removed from or installed in a chassis while system power is on.
- **Input** refers to an audio or video signal that is connected to an Omneon MediaDeck. Input also refers to the physical input connectors on the Omneon MediaDeck frame.
- **Interleaved** refers to audio that is recorded within the DV (video) file itself.
- **MediaDeck Module** refers to the Omneon I/O module (pre-installed in the Omneon MediaDeck) for video, audio, timecode and control.
- **Output** refers to an audio or video signal that is connected *from* an MediaDeck Module to a destination digital device. Output also refers to the physical output connectors on the Omneon MediaDeck frame.
- **SDI** refers to Serial Digital Interface, a system whereby uncompressed digital component video signals are distributed via coaxial cable. An SDI signal can include embedded audio.
- **Source** refers to an audio/video device whose output signals are connected to one or more MediaDeck Module inputs.

- **System** refers to an entire Omneon MediaDeck and all of its components.
- **UI** refers to the SystemManager's User Interface (as viewed on a web browser)
- **VANC** refer to the Vertical ANCillary data in the active portions of lines in the vertical interval.

Table 2. Abbreviation Definitions

Abbreviation	Definition
A-D	Analog-to-Digital
AES	Audio Engineering Society
AUX	Auxiliary
CBR	Constant Bit Rate
CG	Character Generator
CIFS	Common Internet File System
D-A	Digital-to-Analog
DAT	Digital Audio Tape
DDR	Digital Disk Recorder
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DV	Digital Video
DVE	Dgitial Video Effects
DVTR	Digital Video Tape Recorder
E-E	Electronics to Electronics
FC-AL	Fibre Channel Arbitrated Loop
FCP	(Apple's) Final Cut Pro
GOP	Group of Pictures
HD	High Definition
Mbps	Megabits per second
MCP	Media Control Processor
MDM	MediaDeck Module
MIB	Management Information Base (database)
MIP	Media Interface Port
MMS	Media Manager System

Abbreviation	Definition
MPEG	Motion Picture Experts Group
MSC	Media Storage Chassis
MXF	Media eXchange Format
NAS	Network Attached Storage
NLE	Non Linear Editor
NMS	Network Management System
RU	Rack Unit
SAN	Storage Area Network
SDI	Serial Digital Interface
SMB	Server Message Block
SNMP	Simple Network Management Protocol
VBI	Vertical Blanking Interval
VDCP	Video Disk Control Protocol
VTR	Video Tape Recorder
VCR	Video Cassette Recorder

Rules for System LEDs

The front panel of an Omneon MediaDeck includes an array of six LEDs, as shown in **Figure 1**.

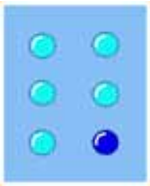


Figure 1. Front Panel LEDs

The following general rules apply to the LED functions on the front panels of Omneon products:

- LEDs are multi-state and multi-color. They can be lit one of four colors as shown in **Figure 2**.

Figure 2. LED Colors

- When lit, LEDs can also be on solid or blinking.
- **Off** indicates that the associated subsystem is not yet initialized.
- Solid colors indicate operational states. **Light Blue (solid)** is the preferred state, indicating normal operation and a fully functional subsystem.
- All **(blink)** states are used for error indications. The most common error indication is **Light Blue (blink)**. **Green (blink)** and **Dark Blue (blink)** are used for other error conditions. All blinks are between **Off** and the selected blink color.
- The typical LED indication should be all six **Light Blue (solid)**. This allows simple, at-a-glance assessment of an “all OK” condition for an Omneon equipment rack. This also means that unused LEDs are set to **Light Blue (solid)**.

Refer to to read an explanation of the functions of individual LEDs on each system component.

Available Media and Wrapper Formats

The Omneon MediaDeck supports the following compressed and uncompressed media formats, depending upon the selected MediaDeck Module:

- DV 25
- DVCPRO 25, DVCPRO 50, DVCPRO 100
- MPEG-2 HDV 720p, MPEG-2 I-Frame, MPEG-2 IMX, MPEG-2 Long GOP, MPEG-2 XDCAM-HD, MPEG-2 XDCAM-EX
- HDCAM
- DNxHD
- AVC-Intra Class 50, AVC-Intra Class 100
- 10-bit SDI
- Data
- Audio

Table 3 shows supported VANC and VBI Storage media types.

Table 3. VANC and VBI Storage Media Types

Metadata Type	Video Media Type	Embedded in Video	Side-Band
Uncompressed VBI	Standard Definition MPEG-2	Omneon user data	Omneon VBI File (QuickTime only)
			SMPTE 436M (MXF only)
	DV 25, DVCPRO 25, DVCPRO 50	Unavailable	Omneon VBI File (QuickTime only)
			SMPTE 436M (MXF only)
VANC	High Definition MPEG-2	SMPTE 328M	SMPTE 436M (MXF only)
	DVCPRO 100	SMPTE 375M	
	AVC-I	Panasonic Spec	

Note the following:

- Capture and playout of SD VANC information is supported. Contact Omneon Technical Support for information.
- SMPTE 326M: VBI is stored in the MPEG-2 user data.
- SMPTE 436M: HD and SD VANC is stored in MXF SMPTE 436M track.
- Omneon VBI File: VBI data is stored in an Omneon proprietary format in the clip.
- Panasonic Embedded: For AVC-I the Panasonic specification describes a technique for storing VANC in the essence.
- DV Embedded: This is stored in the essence according to SMPTE 374/375/376. Note that for SD VANC formats, only audio, timecode, and closed caption data are stored.

Table 4 displays supported combinations of media wrapper formats and track types.

Table 4. Media Track Types and Wrapper Formats :

Track Type	QuickTime (Reference)	QuickTime (Self Contained)	MXF OP1a (Internal)	MXF OP1a (Internal, Low Latency)	MXF OP1b (External)	MXF OP1a (eVTR)	MXF AS02	MXF OP1a (Internal, XDCAM HD RDD9)
DV 25	Yes	Yes	Yes	Yes	Yes	No	Yes	No
DVCPRO 25	Yes	Yes	Yes	Yes	Yes	No	Yes	No
DVCPRO 50	Yes	Yes	Yes	Yes	Yes	No	Yes	No
DVCPRO 100	Yes	Yes	Yes	Yes	Yes	No	Yes	No
MPEG-2 HDV 720p	Yes	Yes	Yes	Yes	Yes	No	Yes	No
MPEG-2 I-Frame	Yes	Yes	Yes	Yes	Yes	No	Yes	No
MPEG-2 IMX	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
MPEG-2 Long GOP	Yes	Yes	Yes	Yes	Yes	No	Yes	No

Track Type	QuickTime (Reference)	QuickTime (Self Contained)	MXF OP1a (Internal)	MXF OP1a (Internal, Low Latency)	MXF OP1b (External)	MXF OP1a (eVTR)	MXF AS02	MXF OP1a (Internal, XDCAM HD RDD9)
HDCAM	Yes	No	No	No	No	No	No	No
DNxHD	Yes	No	Yes	Yes	No	No	No	No
MPEG-2 XDCAM-EX	Yes	Yes	Yes	Yes	Yes	No	Yes	No
MPEG-2 XDCAM-HD	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
AVC-Intra Class 100	Yes	Yes	Yes	Yes	Yes	No	No	No
AVC-Intra Class 50	Yes	Yes	Yes	Yes	Yes	No	No	No
10Bit SDI	Yes	No	No	No	No	No	No	No
Data	Yes	No	No	No	No	No	No	No
Audio	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NOTE: XDCAM-HD and XDCAM-EX clips can be recorded as RDD9 compliant. Pre-6.1 releases allowed only the playout of RDD9 compliant content.

Table 5 shows supported combinations of audio track types and media wrapper formats:

Table 5. Audio Track Types and Media Wrapper Formats

Wrapper Format	AIFF (Big Endian) and WAV (Little Endian)	AES3	8-bit A law
QuickTime (Reference)	Total of (2, 4, 6, 8, or 16) audio channels recorded with (1, 2, 4, or 8) channels per file or per track with sample size (16, or 24) bits.	No	No
QuickTime (Self Contained)			
MXF OP1a (Internal)			
MXF OP1b (External)			
MXF OP1a (eVTR)	N/A	Total 8 audio channels recorded with 8 channels per file with sample size 24 bits encoded into 32 bit wrappers.	N/A
MXF AS02	Total of (2, 4, 6, 8, or 16) audio channels recorded with (1, 2, 4, or 8) channels per file with sample size (16, or 24) bits.	No	No
MXF OP1a Low Latency			Yes
MXF OP1a (Internal, XDCAM HD RDD9)	No	Total of (2, 4, 6 or , 8) audio channels recorded with 1 channel per file with sample size (16 or 24) bits.	No

Technical Support

Omneon provides many ways for you to obtain technical support. In addition to contacting your Distributor, System Integrator, or Omneon Account Manager, you can contact the Omneon Technical Support department as follows:

For support in the Americas:

- Telephone (Toll Free): +1(888) OVN SPT1 (686 7781)
- Telephone (Local): +1(408) 585 5200
- Fax: +1 (408) 521 2191
- Email: **support@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

For support in Europe, Middle East, and Africa:

- Telephone: +44 1252 555 450
- Fax: +44 (0) 1252 377 171

- Email: **emeasupport@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

For support in Russia and CIS

- Telephone Number: +7 495 506 5981
- Fax: +7 495 937 8290
- Email: **RUsupport@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

For support in Japan:

- Telephone: +81 3 5565 6737
- Fax: +81 3 5565 6736
- Email: **japansupport@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

For support in China (mainland):

- Telephone: +86 10 8391 3313
- Fax: +86 10 8391 3688
- Email: **chinasupport@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

For support in Asia Pacific (other territories):

- Telephone: +65 6671 1499
- Fax: +65 6671 1454
- Email: **apacsupport@omneon.com**
- **http://www.omneon.com/service-support**
- **ftp://ftp.omneon.com/Updates/Omneon/Current/**

Company Address

Harmonic Inc.
4300 North First Street
San Jose, CA 95134 U.S.A.

Useful Information when Contacting Technical Support

In order to assist Omneon Technical Support, review the following information:

- **What version of firmware is installed on your system?**

From the **Home** tab, click the **Upgrade Firmware** icon in the left-hand column to display the **Upgrade Firmware** page. The firmware version for each device is shown in the **Current Firmware Version** column.

- **What version of SystemManager software is installed?**

From SystemManager, click the **Help** tab. The version is shown in the **Server Software** section of the page.

- **Which Windows operating system is running on the SystemManager client PC?**

1. From Windows, click the **Start** button, and then click **Run**.
2. In the **Open** field, type: winver, and then press **Enter** to open the **About Windows** dialog box, which shows the version number.

- **How much memory is installed on the SystemManager platform? (for example, 256 MB, 512 MB, or 1 GB)**

1. From Windows, click the **Start** button, and then click **Run**.
2. In the **Open** field, type: winver and then press **Enter** to open the **About Windows** dialog box. Look for the line which reads "Physical memory available to Windows."

- **Please provide the manager.oda file from the SystemManager platform or client PC**

Omneon Technical Support may request that you email the manager.oda file, which contains configuration information for your system. This file is located on the SystemManager platform at D:\Omneon\Manager\omdb, or if you are using a client PC with a single C: partition, it will be in the same directory on the C: drive.

- **What is the model and serial number of the hardware involved?**

    - For Spectrum and MediaDeck devices: from the **Home** tab, click the **Upgrade Firmware** icon in the left-hand column to display the **Upgrade Firmware** page. Both MediaDirectors and MediaDecks are listed in the **MediaDirectors** section. Find the Model Numbers and Serial Numbers listed in their respective columns.

      Scroll down to the **MediaPorts** section to view the Model Numbers and Serial Numbers for MediaPorts and MediaDeck Modules.

    - For Omneon MediaGrid Devices: Click the **Servers & Switches** icon in the left-hand column. From the Servers and Switches page, in the **Name** column, click the link for the Omneon MediaGrid device to open the **Properties** page for that device.

    - For ProXchange devices: Click the ProXchange Servers icon in the left-hand column. From the **Servers** page, in the **Name** column, click the link for the ProXchange device to open the **Properties** page for that device.

- For ProBrowse devices: Click the ProBrowse Servers icon in the left-hand column. From the **Servers** page, in the **Name** column, click the link for the ProBrowse device to open the **Properties** page for that device.
- For MAS devices: Click the MAS Servers icon in the left-hand column. From the Servers page, in the **Name** column, click the link for the MAS device to open the **Properties** page for that device.

For Spectrum Systems

- **What is the name of the Player that is being used?**

From SystemManager, click the **Player Configuration** link in the left-hand column, and then click the name of the MediaDirector or MediaDeck. The **Player List** page for that device appears. The names and status of all players are listed.

- **What file format and bit rate is the Player configured for? (for example, MPEG, DV, IMX?)**

1. From SystemManager, click the **Player Configuration** link in the left-hand column, and then click the name of the MediaDirector or MediaDeck. The **Player List** page for that device appears.
2. From the player list, click the **Properties** link to view all the details for a player.

- **If the problem is related to Ingest or Playout of a clip, what is the Clip ID involved?**

The clip name or clip ID should be indicated by whatever software application you are using to play or record video. For Omneon ClipTool, clip names are displayed in the clip management area of the ClipTool main window.

- **What brand of Automation, if any, is being used for control?**
- **Is the Automation using VDCP or API for communication control?**
- **What other third party device (for example, Tandberg* or Snell and Wilcox*) is involved?**

For Omneon MediaGrid Systems

For failures with the Omneon MediaGrid client:

- **What operating system is running on the client computer?**
- **What applications are you using?**
- **What version of the Omneon MediaGrid FSD is installed?**

To determine the FSD version on Windows:

1. From the Control dialog box, click the **Add/Remove Programs** icon.
2. Locate the **Omneon MediaGrid File System Driver** entry and click the link, which says **Click here for support information**. The version is displayed.

To determine the FSD version on Macintosh:

1. Select **Find** from the **File** menu.
2. Click **Applications** in the Finder sidebar of the **Searching “This Mac”** window.
3. Double-click the **Connect to MediaGrid** icon to open the **Connect to Omneon MediaGrid** dialog box.

To determine the FSD version on Linux:

Use the following command: `tail /proc/sys/omfs*`

- **Please supply an error message, screen capture, or description of the symptom**
- **Is the issue repeatable? If so, what is the procedure to reproduce the issue?**
- **Please supply log files for the client FSD and ContentBridge FSD**

Once you are able to reproduce the issue, Omneon Technical Support may ask you to provide log files from the client computers or the ContentBridge. The following instructions describe how to turn on logging on a client system.

IMPORTANT: Do not perform the following procedures unless directed by Omneon Technical Support.

To enable logging for a Windows client:

1. Add two registry parameters to the OmRdr registry key: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\OmRdr\Parameters
    - DWORD “debug” with value 1
    - DWORD “LogToFile” with value 1
2. For debug to take effect, make sure the client is mounted to the Omneon MediaGrid system.
3. For LogToFile to take effect, run the “taillog” executable and redirect the output to a file. From the **Start** menu, click **Run**, and paste the location of tailog.exe and desired location of the log file into the **Open** field, as shown in this example: “C:\Program Files\Omneon\Omneon MediaGrid\taillog.exe” > c:\clxxxxxx-1.log

    In this example, the log file will be created at the c:\ directory.
4. Reproduce the issue, and then collect all log files from taillog and the omxxx.log from the WinFSD installed directory.
5. Once you have collected the log files make sure to delete the LogToFile parameter from the registry, otherwise it will have a negative impact on performance.

To enable logging for a Macintosh client:

1. Run the following command to ensure that the debug level is set to default:

```
sudo sysctl –w debug.omfs=3
```

2. Reproduce problem.

3. Collect the following log files: `/var/log/system.log` and `/var/log/kernel.log`.

To collect log messages for a Linux client:

Collect `/var/log/messages`.

Omneon may also wish to collect the current configured Linux FSD parameters. Access these by entering the following command:

```
cat /proc/sys/omfs*
```

To collect log messages for the ContentBridge:

Locate the log file at:/var/log/omneon/remote/<IP address of ContentBridge>.

- **What was the time of the failure?**

For information on the time of failure, navigate to the **View Alarms** page in SystemManager. To open the View Alarms page, click the **Diagnostics** tab, and then click the **View Alarms** icon in the left-hand column.

For failures with the Omneon MediaGrid cluster:

- **What is the name of the device that experienced the failure?**

From SystemManager, click the **Servers & Switches** icon in the left-hand column to access the **Servers & Switches** page. Device names are listed in the **Name** column.

- **Please provide an error message and/or a description of the symptom**
- **Is this failure affecting clients or other systems?**
- **Please provide the appropriate log file or remote access to the device**

The Omneon MediaGrid provides logs files for all of the core services. Omneon Technical support may wish to view one of these logs to determine the root cause of the problem. The following three log files are used most often when troubleshooting. These files are located on the ContentDirector at /var/log/omneon.

- **ssmd**: SliceServer Manager
- **mdscore**: MetaData Server
- **startup**: Core Omneon MediaGrid Services Startup and Shutdown

Part I Installing and Using the Omneon MediaDeck

The following sections provide information to help you install and use your Omneon MediaDeck:

- **Installing the Omneon MediaDeck System**
- **Running SystemManager and Creating a File System**
- **Creating a Player**
- **Installing and Using ClipTool™**
- **Omneon MediaDeck Configuration**

CHAPTER 1
Installing the Omneon MediaDeck System

This section provides step-by-step instructions for installing an Omneon MediaDeck and an optional automation system.

Review the following topics to install an Omneon MediaDeck system:

About the Omneon MediaDeck Installation

A basic Omneon MediaDeck System consists of the following components:

- One Omneon MediaDeck with MediaDeck I/O module(s) 5001, 5221, 5321, 5401, or 5501 series installed in the chassis
- Eight 500-GB or 1-TB SATA disk drives
- Interconnection Cables
- One Rack Mounting Kit

- One SystemManager Platform (model NSM-2007 or NSM-2007K) or the software-only version of SystemManager (NSM-2007SW) installed on a customer-supplied PC.
- Latest version of the Omneon MediaDeck and SystemManager software (downloadable)
- One Ethernet switch (or hub)
- (Optional) One controlling application (for example, program automation system)

This system provides the following capabilities:

- (Optional) Up to six channel automation control using VDCP protocol (record, play, preview)
- Each MediaDeck Module 5001 provides three video channels (two for playback and one switchable between record and playback), and 16 channels of embedded audio, or up to four channels of discrete (AES/EBU) audio.
- Each MediaDeck Module 5321 provides four high definition video channels (two for ingest and two for playback), and standard SDI embedded audio for 16 audio channels per video channel, or up to four channels of discrete (AES/EBU) audio.
- Each MediaDeck Module 5221 provides four standard definition video channels (two for ingest and two for playback), and standard SDI embedded audio for 16 audio channels per video channel, or up to four channels of discrete (AES/EBU) audio.
- Each MediaDeck Module 5401 provides up-conversion or down-conversion of a mixed timeline of SD and HD content as necessary to play out a single channel configured as SD or HD.
- Each MediaDeck Module 5501 provides two or four channels of HD or SD MPEG-2 play. Each channel is individually configurable for HD or SD operation. In HD mode, SD material on the timeline is up converted. In SD mode, HD material on the timeline is down converted.
- Support for RAID-DP in a 6+2 RAID set, with hot-swappable SATA drives. 500 GB drives provide a total of 3 TB of online storage. 1 TB drives provide a total of 6 TB of online storage.
- Dual redundant hot-swappable power supplies (with integral cooling fans)
- Two Gigabit Ethernet ports, one for file transfers into and out of the Omneon MediaDeck using FTP, SAMBA, and AFP protocols, and another for control functions such as RPC-based access from the SystemManager or Player APIBasic.
- MediaDeck Modules are hot-swappable and can be replaced without disrupting other operations on the server. For information on replacing the I/O modules, refer to the *Omneon MediaDeck Component Replacement Guide* included in your kit.

System Installation Diagram

Figure 3 illustrates a basic system installation.

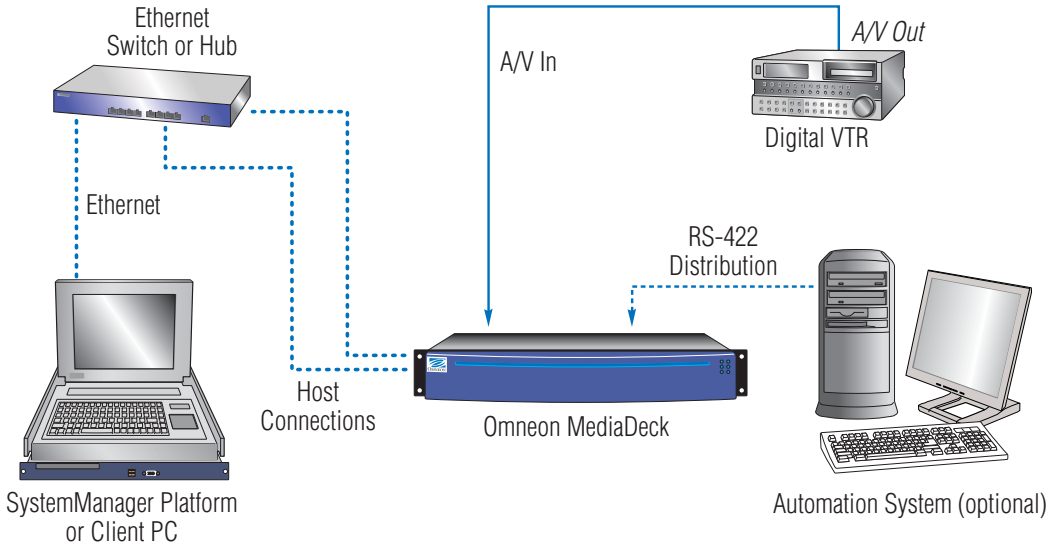


Figure 3. Sample System Diagram

Customer Supplied Components

Customer supplied components are as follows:

- Digital VTR (If an Analog VTR is used, external A-D converters are required.)
- Video monitors
- RS-422 interconnection cables (DB-9 Male to DB-9 Male)
- Audio/Video interconnection cables suitable for SDI and AES signal transmission, and monitoring equipment
- Gigabit Ethernet Hub or Gigabit Ethernet switch
- Automation System (optional)

NOTE: An Ethernet switch is required if your Omneon system includes applications (such as archiving and editing) that would be optimized by Gigabit Ethernet connectivity. In systems that do not include these types of applications (such as the automation system described above) an Ethernet hub is sufficient.

About Site Preparation

Note the following prerequisites for installation of your Omneon Spectrum System:

- **Environmental**

  Omneon equipment is designed to operate in a clean, air-conditioned control room environment. Care must be taken to avoid temperature and humidity extremes.

- **Power**

  When connecting equipment, care must be taken to avoid power lines that are subject to noise and voltage spikes. Do *not* install units on a power circuit that is common to such equipment as air conditioners and refrigeration units. For optimum protection, AC noise filters and surge protectors are recommended if unstable power conditions are present.

  To take full advantage of the Omneon MediaDeck's redundant power supplies, Omneon recommends that you use separate, isolated power sources for each of the AC inputs.

- **Site**

  Omneon equipment is designed for rack mounting. For detailed rack mounting requirements and dimensions, refer to *Rack Mounting the Omneon MediaDeck System*.

- **Rack**

  The following safety requirements must be considered when the unit is mounted in a rack.

  - The rack design should incorporate stabilizing features suitable to prevent the rack from tipping during installation and in normal use.
  - When loading a rack with the Omneon MediaDeck and other units, fill the rack from the bottom up and empty from the top down.
  - The rack should comply with the airflow requirements detailed in the technical specification. The rack design should take into consideration the maximum operating ambient temperature for the unit, which is 40°C.
  - The ground should have a safe electrical distribution system that provides a reliable earth for each unit and the rack. It must provide overcurrent protection for the unit and must not be overloaded by the total number of units installed. Attention should be given to supply connections other than direct connections to the branch circuit such as power strips.

- **Customer-supplied Components**

  The following customer supplied components may be required:

  - Video cables suitable for SDI and AES signal transmission
  - RS-422 cable for connection to a control system or external serial controller

- **Cables**

  For all coaxial cable requirements, use 75-ohm cable that is specifically designed for digital video, and which meets the transport standards for serial digital video at 270 Mbps.

WARNING: Safe handling of this system requires TWO people.

CAUTION: Unpack and place your Omneon MediaDeck system on a flat anti-static surface to perform the following installation procedures contained in this document.

CAUTION: Electrostatic discharge can damage components. Make sure to wear an anti-static wrist strap and attach it to a metal part of the Omneon MediaDeck Chassis when performing the procedures in this guide.

About Unpacking and Inspecting the System

When you receive each component of an Omneon MediaDeck System, inspect each shipping container for signs of damage. Contact your local Omneon representative and the carrier *immediately* if you suspect any damage has occurred during shipping. Check the contents of each box against the packing list to be sure that all parts are included. If any items are missing, contact your local Omneon representative immediately.

About Equipment Orientation

Important background information about each component's connectors, displays, and indicators is available in the following chapters:

- **Omneon MediaDeck Orientation**
- **Omneon MediaDeck Module Orientation**
- **Omneon MediaDeck Storage Orientation**.

Please familiarize yourself with this information before you interconnect the components in an Omneon MediaDeck system.

Rack Mounting the Omneon MediaDeck System

This section provides rack-mounting instructions. **Figure 4** shows the recommended layout.

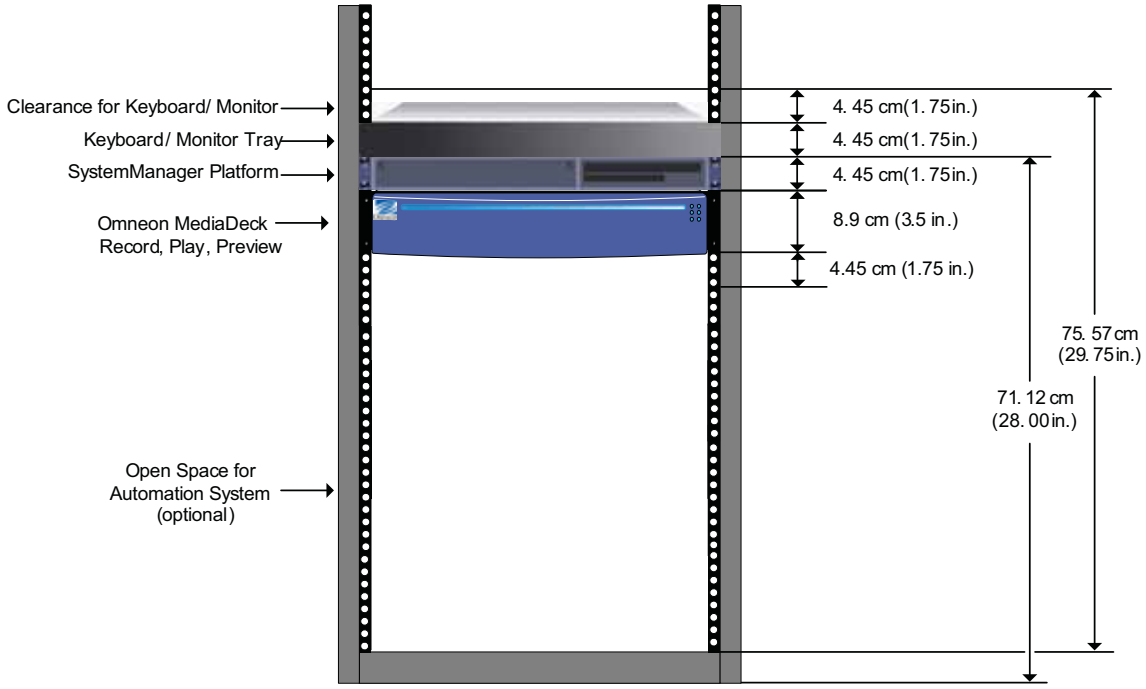


Figure 4. Rack Mounting Diagram

Note the following important points regarding the rack layout:

- To eliminate any possibility of tipping over, ensure that the equipment rack is securely fastened to the floor or wall.
- 5 RU (22.25 cm [8.75 in.]) of vertical rack space are required. This dimension includes 1 RU (4.45 cm [1.75 in.]) of clearance above the SystemManager Keyboard/Manager Tray.
- The SystemManager Keyboard/Monitor Tray is placed 71.12 cm (28.0 in.) off the floor. This tabletop height is ideal for using the SystemManager while seated or standing.
- For the following procedure, use the rack layout in **Figure 4** for reference.

The rack kit is required to rack mount the Omneon MediaDeck. Use the instructions included with the rack kit **to install the** Omneon MediaDeck in your equipment rack**. The** following steps also explain how to install **the** Omneon MediaDeck in your equipment rack.

WARNING: Safe handling of this system requires TWO people.

To rack mount the Omneon MediaDeck and other components:

1. Ensure that the installation site is properly prepared with adequate power, ventilation and rack space. Refer to **About Site Preparation** for details.
2. Unpack the Rack Kit that includes one set of rear mounting brackets (with slots) and one set of side mounting brackets (with tabs). **For all installation steps, always use the screws that are included with the mounting hardware.**
3. Measure the depth of your cabinet from the front rail to the rear rail and determine the total length required to mount the Omneon MediaDeck. The side brackets can be set at varying lengths on the sides of the Omneon MediaDeck. However, note that the tabs of the side brackets should surpass the rear of the MediaDeck by at least an inch so they can be inserted into the rear bracket slots.
4. Using the supplied black screws, attach the rear brackets to your cabinet's rear rails.
5. Attach both side brackets to the sides of the Omneon MediaDeck, using the supplied silver screws, so that the final length allows the tabs in the side brackets to insert precisely in the rear bracket slots. Use **Figure 5** for reference.

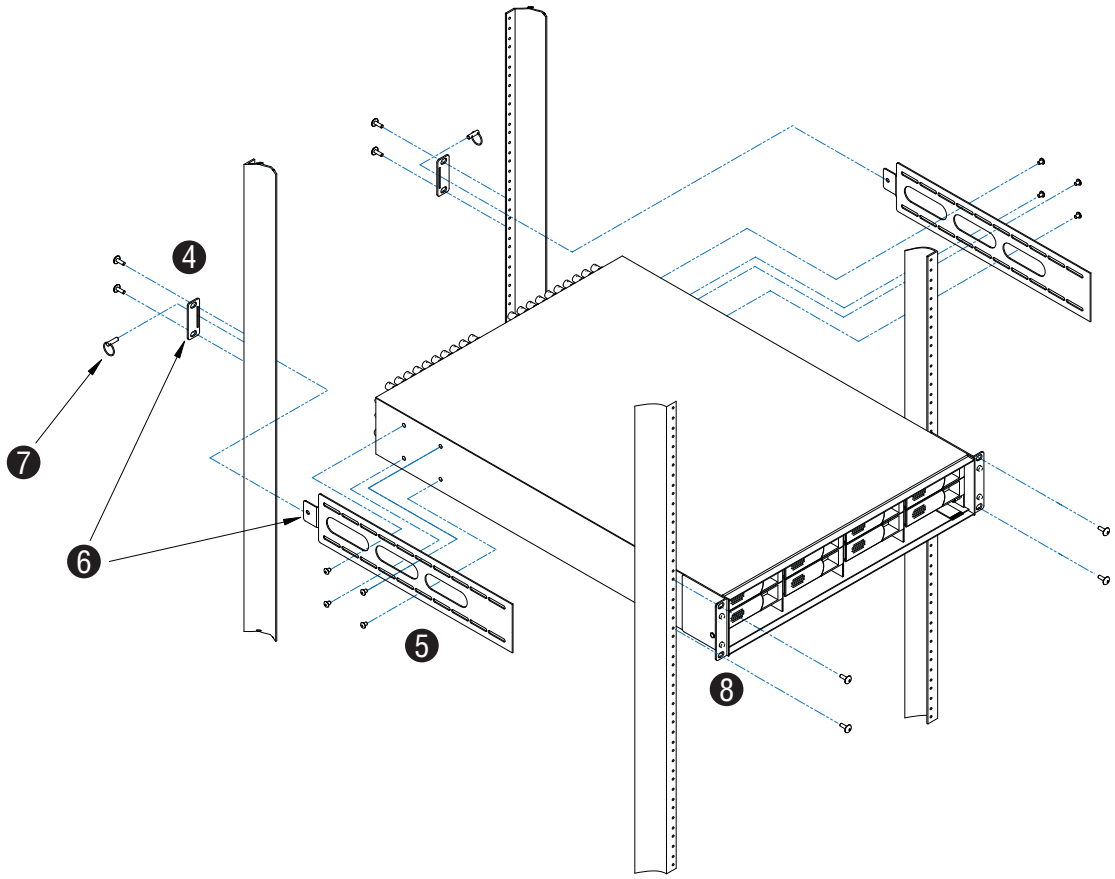


Figure 5. Rack Mounting the Omneon MediaDeck

6. With the side brackets installed, slide the tabs of the side brackets into the slots in the rear brackets.
7. Secure the tabs in place by inserting the supplied clevis pins into the holes in the tabs as shown in **Figure 5** and **Figure 6**.

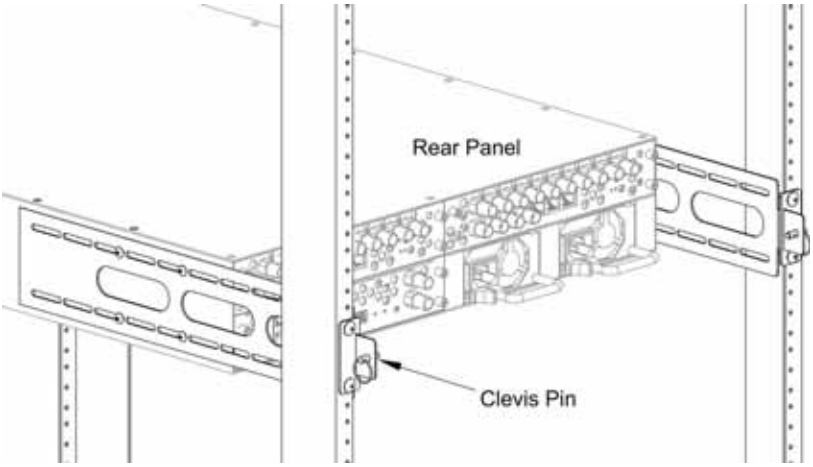


Figure 6. Rear Panel View of Rack Kit

8. Secure the front of the Omneon MediaDeck to the front rails using the supplied black screws.
9. (Optional) If an Automation System is part of your Omneon MediaDeck System, install the Automation System below the Omneon MediaDeck.

   Refer to the documentation supplied with your automation system for rack mounting details.
10. If your Omneon MediaDeck has two MediaDeck Modules, you may want to label each of the MediaDeck Modules with temporary labels for easy identification throughout the remainder of the installation procedures.
11. Install the Ethernet switch (or Ethernet hub) in the equipment rack, or in a location within close proximity of the rack.

Installing the Disk Drives

For detailed information about the Omneon MediaDeck disk drives, refer to **Omneon MediaDeck Storage Orientation**.

To install the Omneon MediaDeck disk drives:

1. Unpack a disk drive.
2. Open the latch on the front of the disk drive by pressing the tab to the right while pulling the lever back, as shown in **Figure 7**.

.

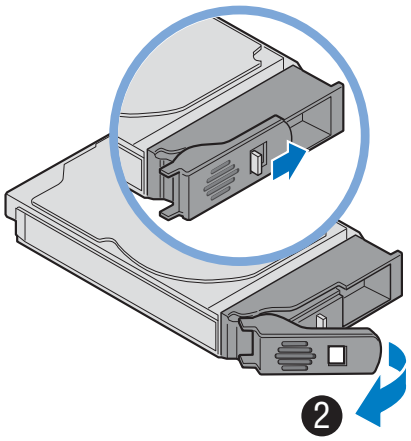


Figure 7. Opening the Disk Drive Latch

3. Using the slot guides in the enclosure to guide the drive, insert the disk drive all the way into an empty drive bay until the camming lever on the left side of the carrier stops it.
4. Gently push the camming lever towards the enclosure until it clicks into a closed position.

.

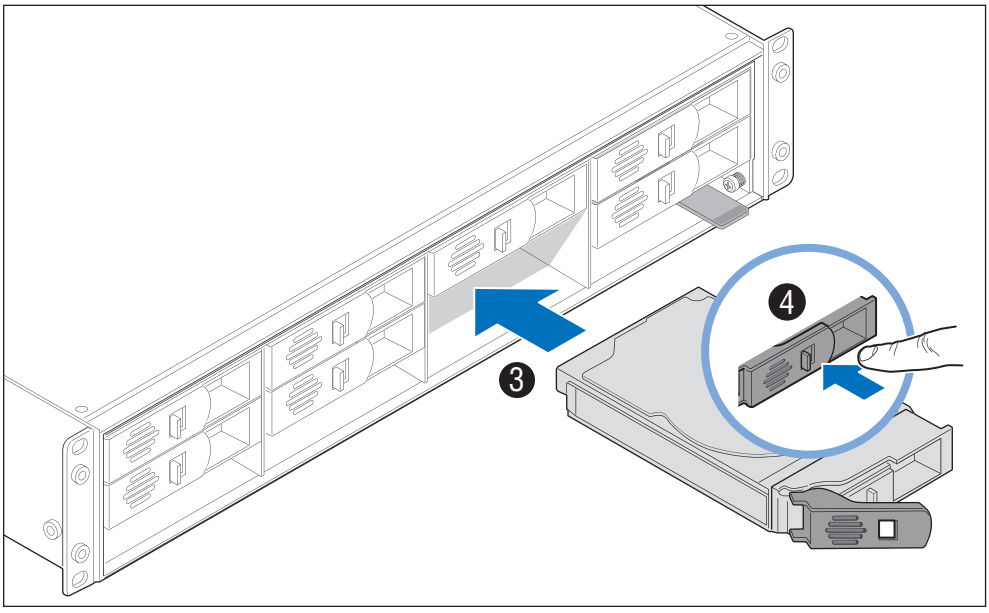


Figure 8. Installing the Disk Drive

5. Install the remaining disk drives. Disk drives can be installed in any order.

NOTE: Do not attempt to install disk drives into the bottom row of the drive cage. This row is intended for air flow only

Continue to the next section to install the bezel of the Omneon MediaDeck.

Installing the Bezel

To install the bezel of the Omneon MediaDeck:

1. Unpack the bezel.
2. Align the bezel in front of the chassis so that the Omneon logo appears in the top-left corner, and the metal corners of the bezel are level with the rack ears of the chassis.
3. Keeping the corners aligned, press the bezel straight onto the chassis, as shown in **Figure 9**. The top and bottom edges of the bezel should slide over the top and bottom edges of the chassis. The LED connector inside the bottom right-hand corner of the bezel should connect to the LED card inside the chassis.

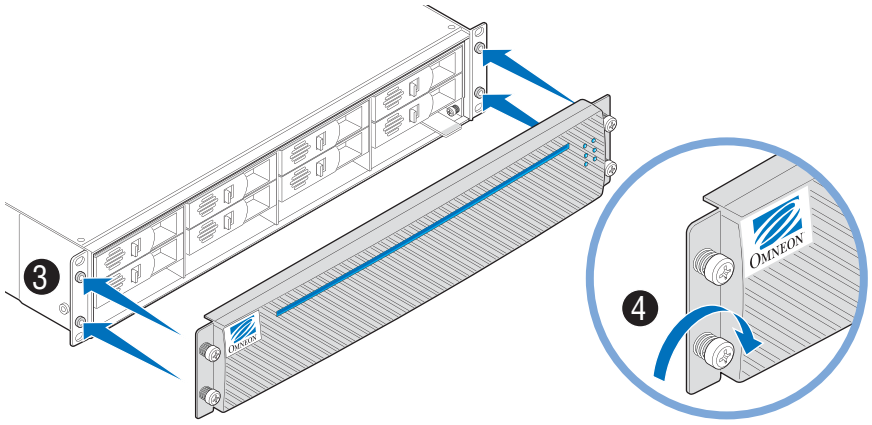


Figure 9. Installing the Bezel

4. Hand-tighten the four captive thumb screws to secure the bezel in place.

NOTE: Do not overtighten the thumb screws.

Installing the SystemManager Platform or Client PC

The SystemManager application, used to operate and configure the Omneon MediaDeck, comes pre-installed on the SystemManager Platform. The software-only version of SystemManager (NSM-2007SW) can be installed and run on your own client PC. Refer to the *Omneon SystemManager installation Guide* for instructions on installing the SystemManager Platform or installing the software-only version of SystemManager (NSM-2007SW) on a client PC. When you have finished installing SystemManager, continue to **Connecting your Gigabit Ethernet Network** to finish installing your Omneon MediaDeck system.

Connecting your Gigabit Ethernet Network

This section provides instructions for connecting Gigabit Ethernet between the Omneon MediaDeck, the SystemManager Platform, and your file transfer system, using an Ethernet switch or hub. For

detailed information about the SystemManager Platform, refer to the *Omneon SystemManager Installation Guide.*

IMPORTANT: Check with your network administrator before connecting to your Ethernet network.

NOTE: An Ethernet switch is required if your Omneon system includes applications that are optimized by Gigabit Ethernet (such as archiving and editing). Otherwise, an Ethernet hub is sufficient.

NOTE: For the following connections, Omneon recommends that you use a CAT 5e or CAT 6 Ethernet cable. Do not use a crossover cable or adapter.

To connect to SystemManager:

1. Ensure that an Ethernet switch with Gigabit uplink capability has been installed in your equipment rack.
2. Attach an Ethernet cable to the **LAN1** port on the SystemManager Platform, or an open LAN port on your client PC. Attach the other end of the Ethernet cable to the Ethernet switch (see **Figure 10**).

   NOTE: Do not use the LAN2 port on the SystemManager Platform unless you have configured SystemManager as a client, or you are using the NSM-2003. Refer to the Omneon SystemManager Installation Guide for details.
3. Attach an Ethernet cable to the **Control** port on the Omneon MediaDeck, and then attach the other end to an open port on the Ethernet switch (see **Figure 10**). The Omneon MediaDeck uses DHCP to obtain an IP address from SystemManager.

To connect to a file transfer system (recommended):

4. Attach an Ethernet cable to the Ethernet switch, and then attach the other end to the LAN port on your file transfer system (see **Figure 10**).

   NOTE: Your file transfer system may be any system you use for editing or network storage. The Omneon MediaDeck supports file transfers using FTP, SAMBA, and AFP protocols.
5. Attach an Ethernet cable to the **File** port on the Omneon MediaDeck, and then attach the other end to an open port on the Ethernet switch (see **Figure 10**).

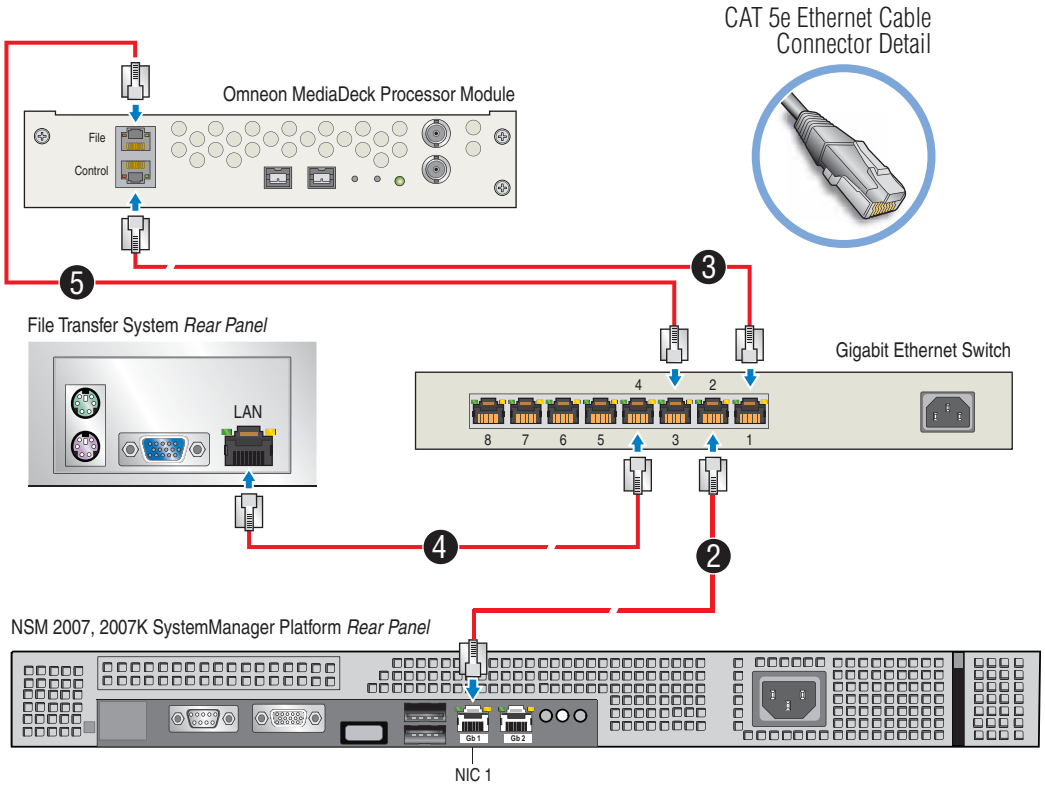


Figure 10. Connecting your Gigabit Ethernet Network

Connecting to an Automation System (Optional)

This section provides instructions for connecting to an optional Automation System. Select one of the following:

- **Connecting Automation to the MediaDeck Module 5001**
- **Connecting Automation to the MediaDeck Module 5321 or 5221**
- **Connecting Automation to the MediaDeck Module 5401**
- **Connecting Automation to the MediaDeck Module 5501**

NOTE: All Automation Systems differ in their array of control connectors and their method of interfacing with the Omneon MediaDeck. The following sections provide one example. Refer to your Automation System's Installation Guide for interconnection details.

Connecting Automation to the MediaDeck Module 5001

Figure 11 assumes that the Automation System includes multiple RS-422 ports. Use **Figure 11** for reference during the procedure.

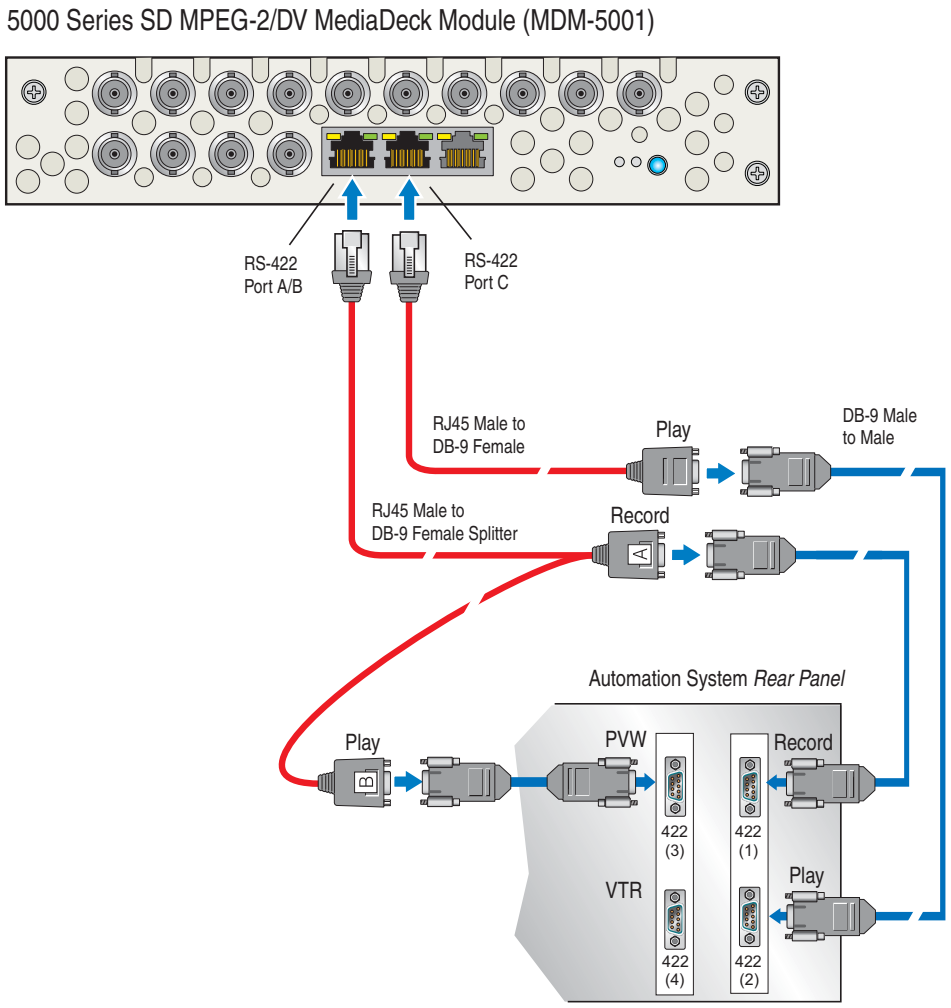


Figure 11. Sample Automation System

To connect an automation system:

1. On the Automation System chassis, ensure that you have properly connected the Mouse, the Keyboard and the SVGA Monitor (all customer supplied, or supplied with the Automation System).
2. Connect your facility LAN to the Automation System's Ethernet port if applicable.
3. Locate the **RJ45/DB-9 Cable** and the **RJ45/DB-9 Splitter Cable** supplied with the Omneon MediaDeck list of accessories. Customer-supplied cables include three **DB-9 Male to DB-9 Male extension cables**.
4. Attach the RJ45 connector of the **RJ45/DB-9 Splitter Cable** to the **RS-422 A/B** port on the Omneon MediaDeck. This will be the **Record** and **Preview** port.
5. Attach the DB-9 connector (labeled **A** in **Figure 11**) from the **RJ45/DB-9 Splitter Cable** to a customer-supplied DB-9 Male to Male extension cable. Then connect the other end of the extension cable to the **Record** port of the Automation System chassis (Port 1 in **Figure 11**).

6. Attach the other DB-9 connector (labeled **B** in **Figure 11**) from the same **RJ45/DB-9 Splitter Cable** to a customer-supplied DB-9 Male to Male extension cable. Then connect the other end of the extension cable to the **Preview** port of the Automation System chassis (Port 3 in **Figure 11**).

7. Attach the **RJ45** end of the **RJ45/DB-9 Cable** to the **RS-422 C** port on the Omneon MediaDeck. This will be the **Play** port.

8. Attach the DB-9 connector (labeled **Play** in **Figure 11**) from the **RJ45/DB-9 Cable** to a customer-supplied DB-9 Male to Male extension cable. Then attach the other end of the extension cable to the **Play** port of the Automation System chassis (Port 2 in **Figure 11**).

   NOTE: The RS-422 port assignments on your automation system may differ. Please review your automation system's User's Guide for full instructions.

   NOTE: The Omneon MediaDeck's Ethernet port is *not* used.

9. Repeat steps 1 through 8 for the second MediaDeck Module in your Omneon MediaDeck.

10. Using a customer-supplied **DB-9 Male to DB-9 Male extension cable**, connect the **VTR** port on the Automation System chassis (Port 4 in **Figure 11**) to the RS-422 **Remote** port on your acquisition VTR.

Connecting Automation to the MediaDeck Module 5321 or 5221

Use **Figure 12** for reference during the procedure.

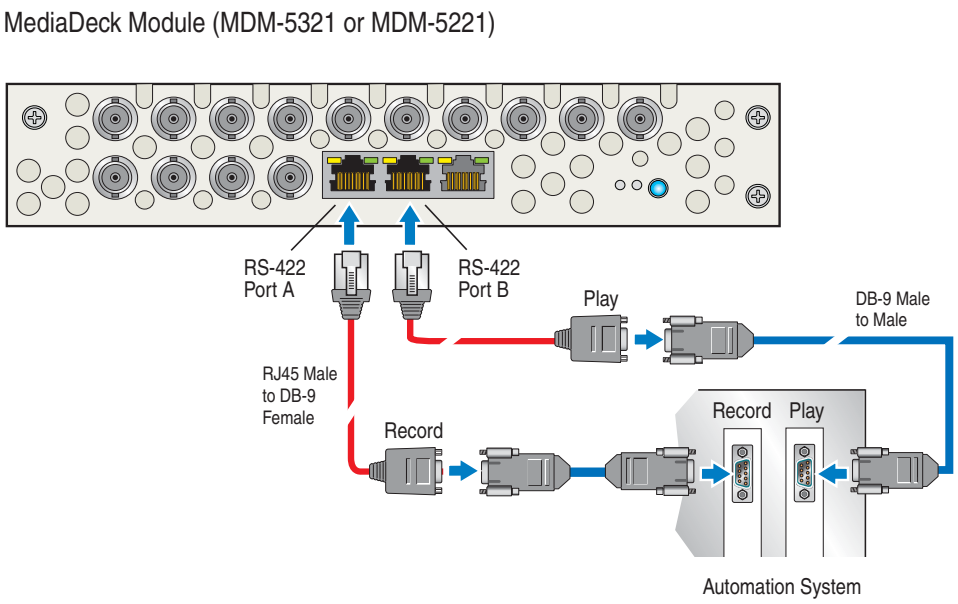


Figure 12. Sample Automation System

To connect an automation system:

1. On the Automation System chassis, ensure that you have properly connected the Mouse, the Keyboard and the SVGA Monitor (all customer supplied, or supplied with the Automation System).
2. Connect your facility LAN to the Automation System's Ethernet port if applicable.
3. Locate the **RJ45/DB-9 Cable** supplied with the Omneon MediaDeck list of accessories. Customer-supplied cables include a **DB-9 Male to DB-9 Male extension cables**
4. Attach the RJ45 connector of the **RJ45/DB-9 Cable** to the **RS-422 A** port on the Omneon MediaDeck. This will be the **Record** port.
5. Attach the DB-9 connector (labeled **Record** in **Figure 12**) from the **RJ45/DB-9 Cable** to a customer-supplied DB-9 Male to Male extension cable. Then connect the other end of the extension cable to the **Record** port of the Automation System chassis.
6. Attach the RJ45 end of another **RJ45/DB-9 Cable** to the **RS-422 B** port on the Omneon MediaDeck. This will be the **Play** port.
7. Attach the DB-9 connector (labeled **Play** in **Figure 12**) from the **RJ45/DB-9 Cable** to a customer-supplied DB-9 Male to Male extension cable. Then attach the other end of the extension cable to the **Play** port of the Automation System chassis.

   NOTE: The Omneon MediaDeck's Ethernet port is *not* used.
8. If the second I/O module in your Omneon MediaDeck is an MediaDeck Module 5321 or 5221, then repeat steps 1 through 7 for the second MediaDeck Module 5321/5221 in your Omneon MediaDeck.

Connecting Automation to the MediaDeck Module 5401

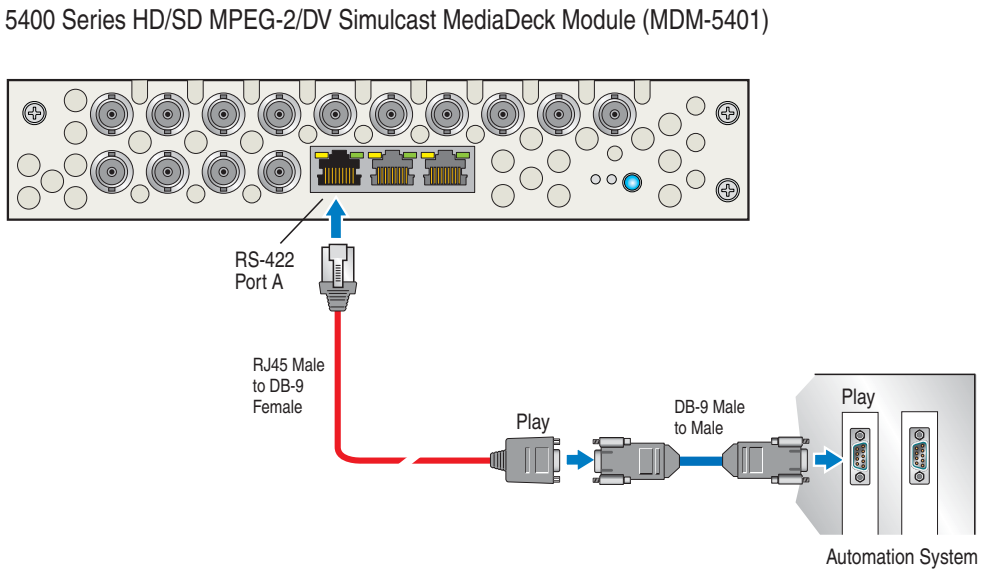


Figure 13. Sample Automation System

To connect an automation system:

1. On the Automation System chassis, ensure that you have properly connected the Mouse, the Keyboard and the SVGA Monitor (all customer supplied, or supplied with the Automation System).
2. Connect your facility LAN to the Automation System's Ethernet port if applicable.
3. Locate the **RJ45/DB-9 Cable** supplied with the Omneon MediaDeck list of accessories. Customer-supplied cables include a **DB-9 Male to DB-9 Male extension cables**
4. Attach the RJ45 connector of the **RJ45/DB-9 Cable** to the **RS-422 A** port on the Omneon MediaDeck.
5. Attach the DB-9 connector (labeled **Play** in **Figure 14**) from the **RJ45/DB-9 Cable** to a customer-supplied DB-9 Male to Male extension cable. Then attach the other end of the extension cable to the **Play** port of the Automation System chassis.

NOTE: The Omneon MediaDeck's Ethernet port is *not* used.

Connecting Automation to the MediaDeck Module 5501

Use **Figure 12** for reference during the procedure.

NOTE: When simulcast mode is enabled on the MediaDeck Module 5501, the rear panel components for the MediaDeck Module 5501 have the functionality as those for the 5401 series (see **Figure 13**). For information about simulcast mode, refer to **About Simulcast Mode**.

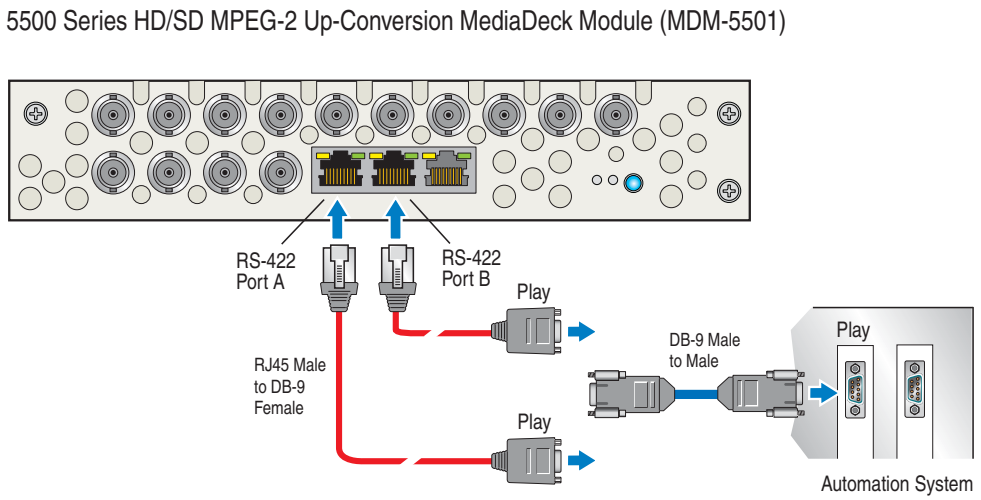


Figure 14. Sample Automation System

To connect an automation system:

1. On the Automation System chassis, ensure that you have properly connected the Mouse, the Keyboard and the SVGA Monitor (all customer supplied, or supplied with the Automation System).
2. Connect your facility LAN to the Automation System's Ethernet port if applicable.
3. Locate the **RJ45/DB-9 Cable** supplied with the Omneon MediaDeck list of accessories. Customer-supplied cables include a **DB-9 Male to DB-9 Male extension cables**

4. Attach the RJ45 connector of the **RJ45/DB-9 Cable** to the **RS-422 A** port or **B** port on the Omneon MediaDeck. Either of these ports can be used as the **Play** port.

5. Attach the DB-9 connector (labeled **Play** in **Figure 14**) from the **RJ45/DB-9 Cable** to a customer-supplied DB-9 Male to Male extension cable. Then attach the other end of the extension cable to the **Play** port of the Automation System chassis.

NOTE: The Omneon MediaDeck's Ethernet port is *not* used.

Connecting Reference Video

This section provides instructions for connecting reference video to the Omneon MediaDeck. For detailed information about the Omneon MediaDeck processor module, refer to **Omneon MediaDeck Orientation**.

IMPORTANT: Reference video should *always* be connected to the Omneon MediaDeck. The Omneon MediaDeck System will operate without reference video connected. However, it is not intended to be operated in this manner, and doing so may result in errors. VITC line selection is configured using the SystemManager.

Use for Figure 15 for reference during the procedure.

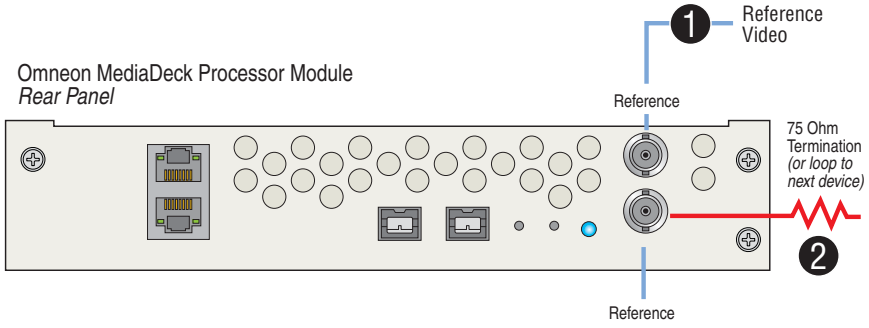


Figure 15. Connecting Reference Video

To connect reference video to the Omneon MediaDeck

1. Connect reference video to one of the **Reference** connectors (see **Figure 15**).

2. Connect a75 Ohm BNC terminator to the other **Reference** connector to terminate it, or connect it to the next device in line that requires reference video (see **Figure 15**).

NOTE: Termination must be applied to the last device in the loop

3. If required, configure VITC lines using the SystemManager. For certain automation systems, VITC timecode on the reference video line allows the system to run accurately.

   For complete instructions, refer to **Changing Omneon MediaDeck Clock Reference VITC Lines**Refer to

Connecting Audio and Video I/O

This section provides instructions for connecting audio and video signals to the Omneon MediaDeck. Select one of the following:

- **Connecting Audio and Video I/O to the MediaDeck Module 5001**
- **Connecting Audio and Video I/O to the MediaDeck Module 5321 or 5221**
- **Connecting Audio and Video I/O to the MediaDeck Module 5321 or 5221**
- **Connecting Audio and Video I/O to the MediaDeck Module 5401**
- **Connecting Audio and Video I/O to the MediaDeck Module 5501**

For detailed information about each of the Omneon MediaDeck I/O Modules, refer to **Omneon MediaDeck Module Orientation**.

Connecting Audio and Video I/O to the MediaDeck Module 5001

Use **Figure 16** for reference during the procedure.

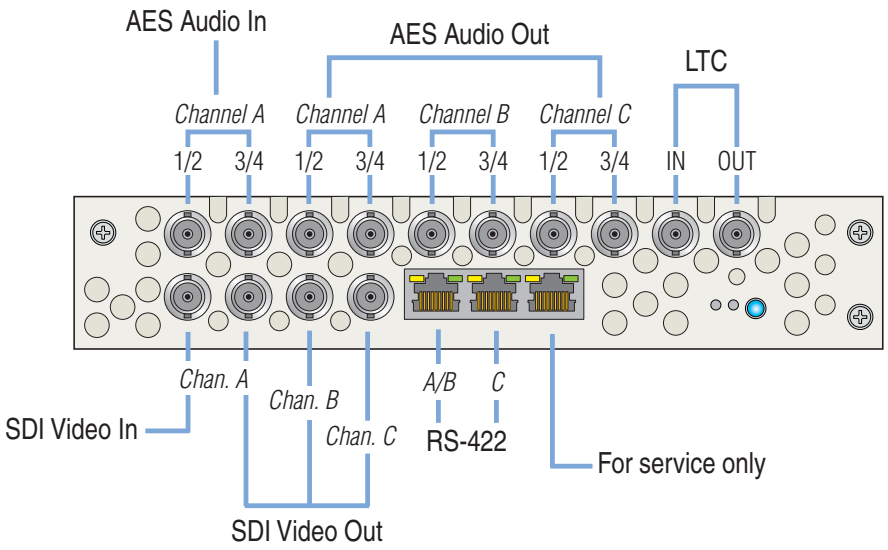


Figure 16. Connecting Audio and Video I/O to the MediaDeck Module 5001

The following connections are recommendations only. Your system configuration and specific audio/video requirements may differ. For example, if only one stereo pair of audio channels is desired, then only one AES connection is needed.

To record audio and video on the MediaDeck Module 5001 and monitor the recording process:

1. Connect video from a VTR or Routing Switcher to the **SDI Video In (Channel A)** connector.
2. Connect the **SDI Video Out** connector (**Channel A or B**) to an SDI monitor.

3. Connect AES audio from a VTR or Routing Switcher to the **AES Audio In (Channel A) 1/2** and **3/4** connectors.
4. Connect AES audio from the **AES Audio Out (Channel A) 1/2** and **3/4** connectors to AES audio monitors.

To play audio and video from the MediaDeck Module 5001 and monitor the playback process:

1. Connect the **SDI Video Out** connector for **Channel A or B** to an SDI monitor.
2. Connect the **SDI Video Out** connector for **Channel C** to your Master Control Switcher or Routing Switcher.
3. Connect AES audio from the **AES Audio Out 1/2** and **3/4** connectors for **Channel C** to your Master Control Switcher or Routing Switcher.

To preview audio and video from the MediaDeck Module 5001 in an off air environment as required:

1. Connect the **SDI Video Out** connector for **Channel A or B** to an SDI monitor.
2. Connect the **SDI Video Out** connector for **Channel C** to your Routing Switcher.
3. Connect AES audio from the **AES Audio Out 1/2** and **3/4** connectors for **Channel C** to your Routing Switcher.

Connecting Audio and Video I/O to the MediaDeck Module 5321 or 5221

Use **Figure 17** for reference during the procedure.

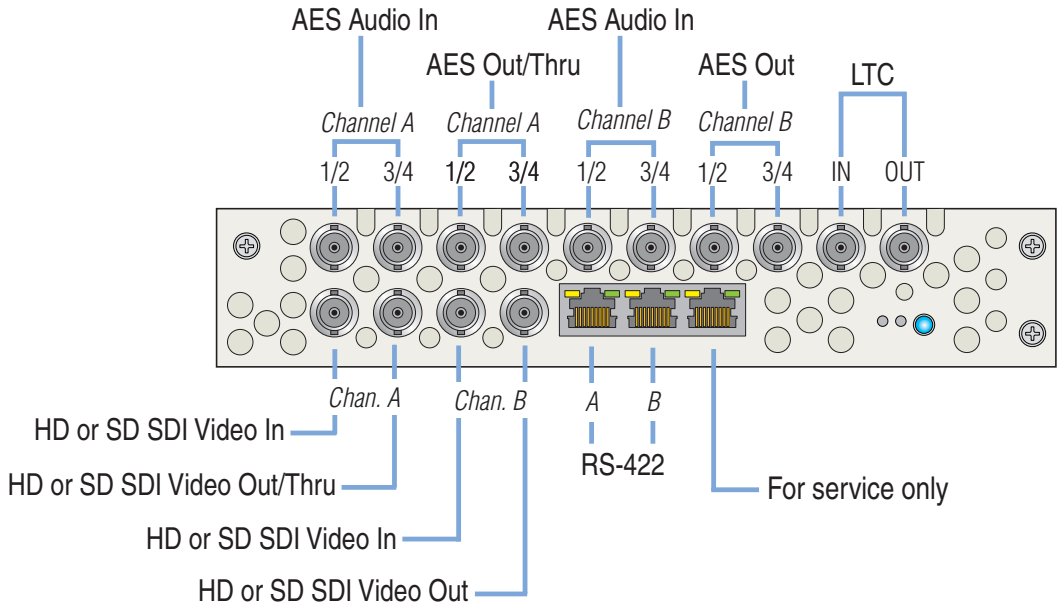


Figure 17. Connecting Audio and Video I/O to the MediaDeck Module 5321/5221

NOTE: The MediaDeck Module 5221 provides support for SD only.

The following connections are recommendations only. Your system configuration and specific audio/video requirements may differ.

To record audio and video on the MediaDeck Module 5321/5221 and monitor the recording process:

1. Connect video from a VTR or Routing Switcher to one or both of the **HD or SD SDI Video In (Channel A or Channel B)** connectors.
2. Connect the **HD or SD SDI Video Out/Thru** connector (**Channel A or Channel B**) to an HD SDI monitor.
3. Connect AES audio from a VTR or Routing Switcher to the **AES Audio In (Channel A or Channel B) 1/2** and **3/4** connectors.
4. Connect AES audio from the **AES Audio Out/Thru (Channel A or Channel B) 1/2** and **3/4** connectors to AES audio monitors.

To play audio and video from the MediaDeck Module 5321/5221 and monitor the playback process:

1. Connect the **HD or SD SDI Video Out/Thru** connector for **Channel A** to an HD SDI monitor.
2. Connect the **HD or SD SDI Video Out** connector for **Channel B** to your Master Control Switcher or Routing Switcher.
3. Connect AES audio from the **AES Audio Out 1/2** and **3/4** connectors for **Channel B** to your Master Control Switcher or Routing Switcher.

Connecting Audio and Video I/O to the MediaDeck Module 5401

Use **Figure 18** for reference during the procedure.

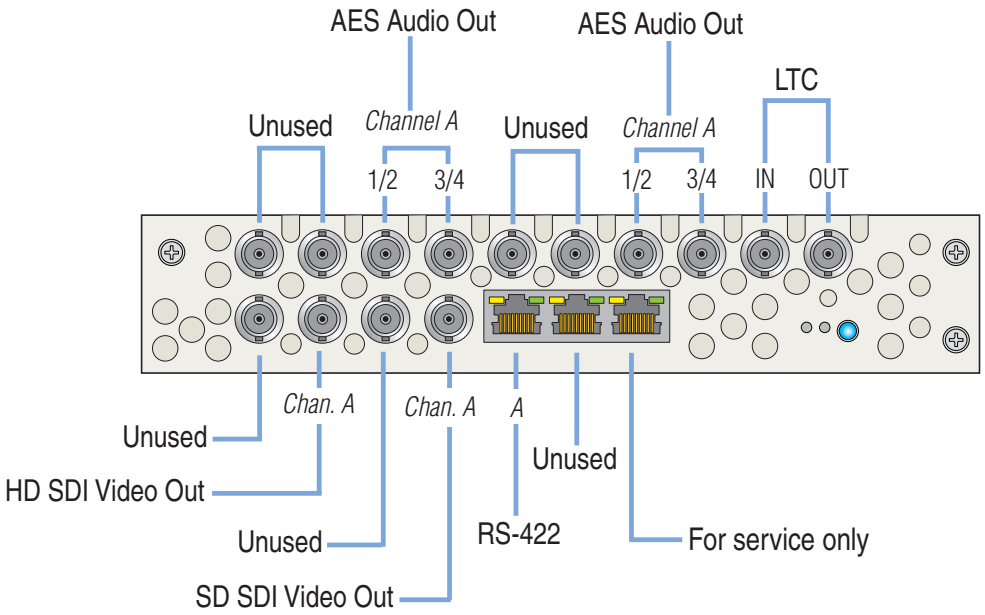


Figure 18. Connecting Audio and Video I/O to the MediaDeck Module 5401

The following connections are recommendations only. Your system configuration and specific audio/video requirements may differ.

To playback SD or HD video using the MediaDeck Module 5401 and monitor the playback process:

1. Connect the **HD or SD SDI Video Out/Thru** connector for **Channel A** to an HD SDI monitor.
2. Connect the **HD or SD SDI Video Out** connector for **Channel A** to your Master Control Switcher or Routing Switcher.
3. Connect AES audio from the **AES Audio Out 1/2** and **3/4** connectors for **Channel A** to your Master Control Switcher or Routing Switcher.

For information on setting up conversion or down conversion options, refer to **Attaching Devices and Setting Conversion Options** in **Chapter 3, "Creating a Player"**.

Connecting Audio and Video I/O to the MediaDeck Module 5501

Use **Figure 19** for reference during the procedure.

NOTE: When simulcast mode is enabled on the MediaDeck Module 5501, the rear panel components for the MediaDeck Module 5501 have the functionality as those for the MediaDeck Module 5401 (see **Figure 18**). For information about simulcast mode, refer to **About Simulcast Mode**.

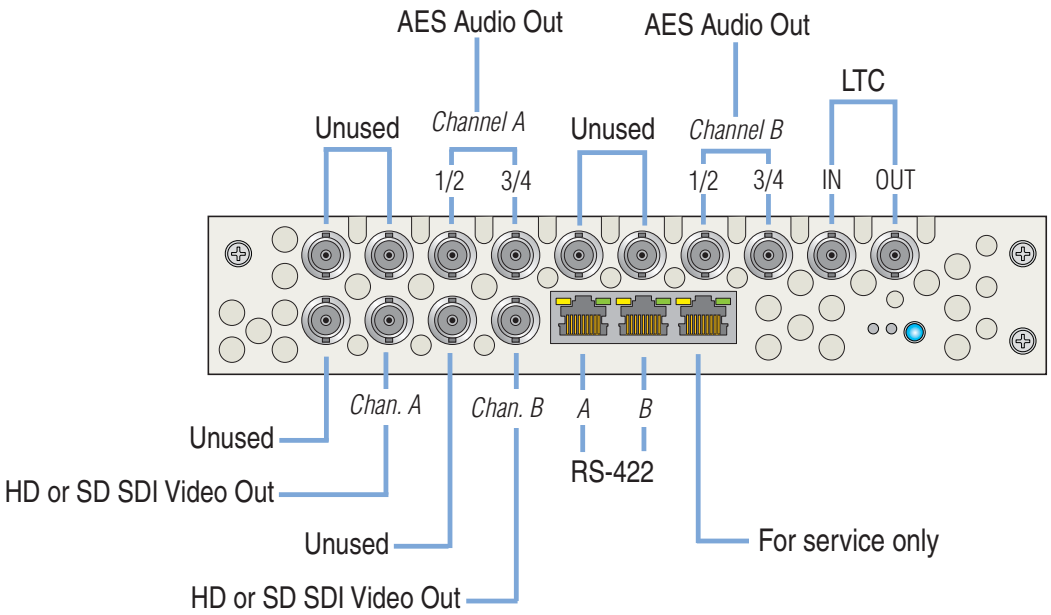


Figure 19. Connecting Audio and Video I/O to the MediaDeck Module 5501

The following connections are recommendations only. Your system configuration and specific audio/video requirements may differ.

To playback SD or HD video using the MediaDeck Module 5501 and monitor the playback process:

1. Connect the **HD or SD SDI Video Out/Thru** connector for **Channel A** to an HD SDI monitor.
2. Connect the **HD or SD SDI Video Out** connector for **Channel B** to your Master Control Switcher or Routing Switcher.
3. Connect AES audio from the **AES Audio Out 1/2** and **3/4** connectors for **Channel B** to your Master Control Switcher or Routing Switcher.

   For information on setting up conversion or down conversion options, refer to **Attaching Devices and Setting Conversion Options** in **Chapter 3, "Creating a Player"**.

Connecting AC Cords

With all audio, video, control and communication connections completed, connect AC as follows.

IMPORTANT: Do not turn on any equipment yet.

To connect AC to an Omneon MediaDeck System:

1. If you are connecting to an Automation System, make sure the Automation System's power switch is off. Connect AC cords to the Automation System's AC connector.
2. Omneon MediaDecks do not have any power switches. To take full advantage of the dual redundant power supplies on the Omneon MediaDeck, ensure that separate, isolated power sources are available. Connect AC cords to the two AC connectors on the Omneon MediaDeck.

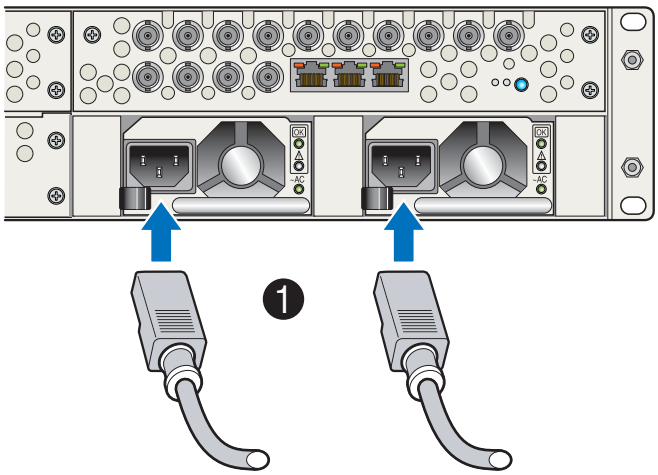


Figure 20. Connecting AC Power

Do **not** plug the AC cords into AC power sources yet. Connecting to an AC power source will turn on the Omneon MediaDeck.

3. Make sure that the power switch for the SystemManager Platform or Client PC is off, and that the power switch for the Keyboard/Monitor Tray is off as well. Attach an AC cord to the AC connector on your SystemManager Platform or Client PC and also your SystemManager Keyboard/Monitor Tray.

4. Connect an AC cord to the AC connector on the Ethernet switch (or hub). *Do not* plug the AC cord into an AC power source yet.

   Continue to **Powering up a System** for power-up instructions.

Powering up a System

IMPORTANT: Follow all steps in the order given.

To power up your Omneon MediaDeck System:

1. Apply power to the Ethernet hub or switch.
2. Apply power to the SystemManager Platform and Keyboard/Monitor Tray, or Client PC.
3. From the SystemManager Platform, log on to Microsoft* Windows* with the User name: **Administrator**, and the password: **omneon**. Both entries are case sensitive.

   NOTE: If an error message appears indicating that a network connection is missing, click **OK** and continue with the power-up sequence.

4. If you have installed SystemManager on a Client PC, log on to your Client PC.
5. Apply power to the Omneon MediaDeck by connecting the AC cords to the separate power sources.
6. Check the status LEDs on the Omneon MediaDeck front panel and verify there are no problems. Refer to **Front Panel Status LEDs** for details.

   NOTE: The File System and RAID status LEDs will blink light blue until a file system and RAID set are created.

7. Apply power to the (optional) automation system.

   Continue to **Running SystemManager and Creating a File System** to log in and begin using the SystemManager application.

CHAPTER 2
Running SystemManager and Creating a File System

This section provides instructions for running and logging onto the SystemManager application, and creating a file system and RAID set. Read the following sections in order:

- **Running the SystemManager Application**
- **Logging on to the SystemManager Application**
- **Viewing the Components of an Omneon MediaDeck**
- **Using One-Click Functions to Create a File System and RAID Set**
- **Verifying the System Diagram and Components**

Running the SystemManager Application

The SystemManager application is pre-installed at the Omneon factory. However, if you need to re-install SystemManager software or update the system with a new version of software, refer to the *Omneon SystemManager Installation Guide* for detailed information on performing the upgrade or reinstalling the software.

This section provides instructions for running the SystemManager application on the SystemManager Platform itself, or verifying that the application has automatically started. This procedure is required the first time the SystemManager application is run. When the SystemManager Platform is started from this point forward, the application runs automatically.

To run the SystemManager application:

1. Boot up the SystemManager Platform or client PC as described in the documentation provided with it.
2. From the desktop, click **Start** > **Settings** > **Control Panel** to display the **Control Panel** dialog box.

   NOTE: These instructions may vary depending on whether you are using “Classic View” or “Category View” in Windows.

3. From the **Control Panel**, double-click the **Administrative Tools** column to display the **Administrative Tools** dialog box.
4. From the **Administrative Tools** dialog box, double-click the **Services** icon to display the **Services** dialog box.
5. From the **Services** dialog box, click on the **SystemManager** line to highlight it.
6. Check the **Status** column to see if the SystemManager’s status is **Started**.

7. If the status is **Started**, skip to step 12; the procedure is complete. If the status is blank, continue with step 8.
8. On the **Action** menu, click **Properties** to display the **SystemManager Properties** dialog box.
9. Click the **Startup Type** drop-down box and select **Automatic** from the list.
10. Click **Start**.
11. Click **OK** to close the dialog box and return to the **Services** dialog box.
12. Click the **X** button at the upper right to close the dialog box.

    At this point, the SystemManager application is started as a service. It will now start up automatically from this point forward.

Logging on to the SystemManager Application

This section provides instructions for logging in to the SystemManager application using Internet Explorer browser. Use this procedure to access the SystemManager and control Omneon devices from both local and remote computers. The SystemManager application does not have to be installed on the local or remote PC in order to log in.

NOTE: Starting with SystemManager release 5.4, a valid license is required to operate the SystemManager application on either a SystemManager Platform or a client PC. Refer to the Omneon SystemManager Installation Guide for detailed instructions on obtaining and installing a license file for use on the SystemManager hardware or client PC. You should have already installed the license file before logging on to the SystemManager application.

To log in:

1. From your desktop or SystemManager Platform or client PC, double click the **Internet Explorer** icon to launch Internet Explorer.
2. If the **SystemManager Logon** page does not appear automatically, there are two different ways to log in, depending upon the computer's location:
   - For the SystemManager Platform or client PC itself, in the address bar type:

     http://localhost/
   - For any other PC, in the address bar type the name (or IP address) of the SystemManager Platform or client PC. This name (or address) can be obtained from your system administrator. For example:

     http://Managerpc/
3. Press **Enter**. The **SystemManager Logon** page appears.

Figure 21. SystemManager Logon

Depending on the security settings for your Internet browser, you may see the following message when the **Logon** page appears.

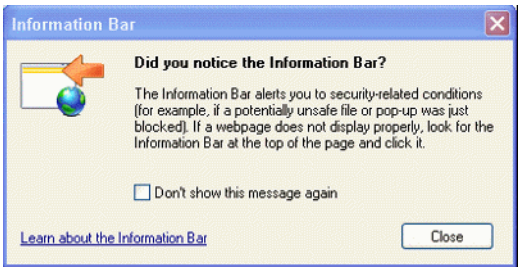


Figure 22. Information Bar Message

Click **Close**. Then right-click in the Information Bar and, unless you wish to enable intranet settings, select **Don't Show Me this Again**.

4. Click the **Log In** button to display the **Enter Network Password** dialog box.
   - Enter the User Name: Administrator
   - Enter the password (case sensitive): omneon
5. Click **OK** to display the **Configuration** tab. The **System Diagram** page displays by default. See **Viewing the Components of an Omneon MediaDeck**.

   If you do not have a valid SystemManager License file installed and available for the SystemManager, you will be unable to operate the application. **Figure 23** shows the message that will display on the user interface:

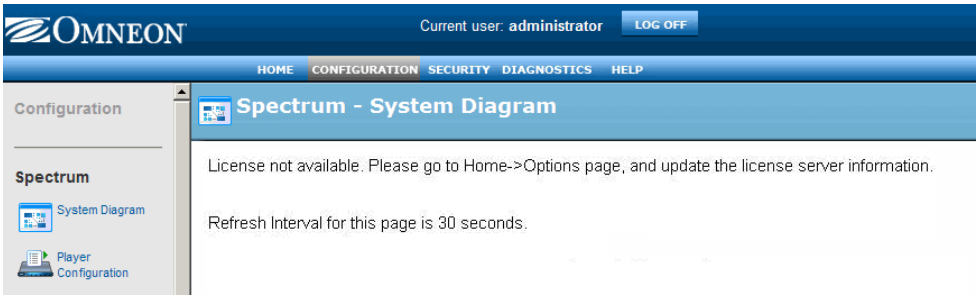


Figure 23. License Not Available

Refer to the *Omneon SystemManager Installation Guide* for step by step instructions.

This completes the procedure for logging onto the SystemManager application.

Viewing the Components of an Omneon MediaDeck

NOTE: The following terms are interchangeable within SystemManager:

- **MediaDeck information is sometimes displayed as MediaDirector information.**
- **MediaDeck Module information is sometimes displayed as MediaPort information.**
- **MediaDeck Storage information is sometimes displayed as MediaStore information.**

The **System Diagram** page of the **Configuration** tab in SystemManager provides a visual overview of the components in an Omneon MediaDeck System. Devices are arranged in order from the **Omneon MediaDeck** (top level), to Hosts (second level), to **buses**, which represent the **Omneon MediaDeck Modules** (third level). Current device status is always shown. Each heading and icon is a hyperlink that takes you to a different location where the devices can be monitored and configured (see **Figure 24**).

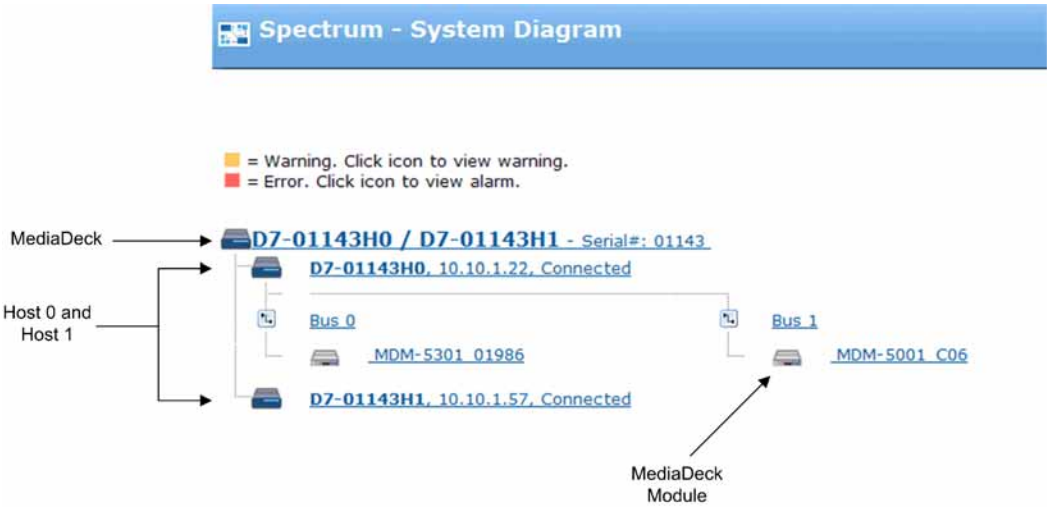


Figure 24. Omneon MediaDeck System Components

Note the following:

- Each Omneon MediaDeck is displayed with two buses attached. If an I/O Module is installed, the bus is identified with an I/O Module icon. If there is no I/O Module, the bus is identified with a "bus" icon. This icon is a hyperlink that takes you either to the **MediaDeck Module Properties** page if an I/O Module is installed, or the **Bus Properties** page if no I/O Module is installed.
- Under each bus, specific device connections are shown. For the Omneon MediaDeck, the device will be the I/O Module (Omneon MediaDeck Module) installed in that Omneon MediaDeck.
- A red question mark will be shown for unrecognized devices.
- The legend at the top of the data section indicates two types of warning boxes (or highlights) that can appear behind an Omneon MediaDeck icon:
  - **Amber** = indicates a warning alarm, or if the device is configuring.
  - **Red** = indicates if the devices has an error, a critical alarm, or if the device is not responding.

  In both cases, you can click the icon to see the alarms for that specific device.
- The Omneon MediaDeck is a dual-host device, and special conventions are used for each host on the System diagram. Each Omneon MediaDeck host can be named separately, and each has its own individual IP address and attached devices.
- The naming convention for the overall Omneon MediaDeck (including both hosts) is both host names separated by a slash (e.g., D7-01028H0/D7-01028H1).

Note the following:

- The default Omneon MediaDeck name is **D7_nnnnnHn**, where:
  - The first five n's are the Omneon MediaDeck's five-digit unit ID, which electronically identifies the unit. This ID is coded at the factory, and matches the last five digits of the serial number found on a label on the rear panel of the MediaDeck.

    - H = host
    - The sixth n = 0 or 1, indicating host 0 or 1
- Each MediaDeck Module is listed by the **Product ID** number (for example, MDM5001) and a 5-digit **Unit ID**, which electronically identifies the MediaDeck Module. This ID is coded at the factory.
- Your Unit IDs will differ from those illustrated in **Figure 24**.
- Hosts and devices can be renamed using the SystemManager, thus your diagram can be customized according to your system configuration. The Omneon MediaDeck name is generated automatically, based on the combination of the two host names.
- The device labels on the System diagram are designed as placeholders initially, with the assumption that the user will change them to something more meaningful (for example, names that reflect the actual use of the devices).

NOTE: The Unit IDs cannot be changed, but the labels can be changed on the **Properties** pages for the individual Omneon MediaDecks and I/O Modules

- MediaDeck Module names are used only within the SystemManager, while Omneon MediaDeck names can also be used from Windows machines for other purposes.

NOTE: On a Macintosh client running Internet Explorer 5: If some web pages only partially displayed on occasion, click the **Refresh** button to display the complete page.

NOTE: If the MediaDeck does not appear in the System Diagram after being installed, then the auto-discovery feature of SystemManager may be disabled. For intructions on enabling auto-discovery, refer to “Setting the Discovery Interval” in the *Omneon SystemManager User’s Guide*.

In the upper right corner of the **System Diagram** page, click the **Click here for list of devices by type** link to display the **Video Area Network** page, shown in **Figure 25**.

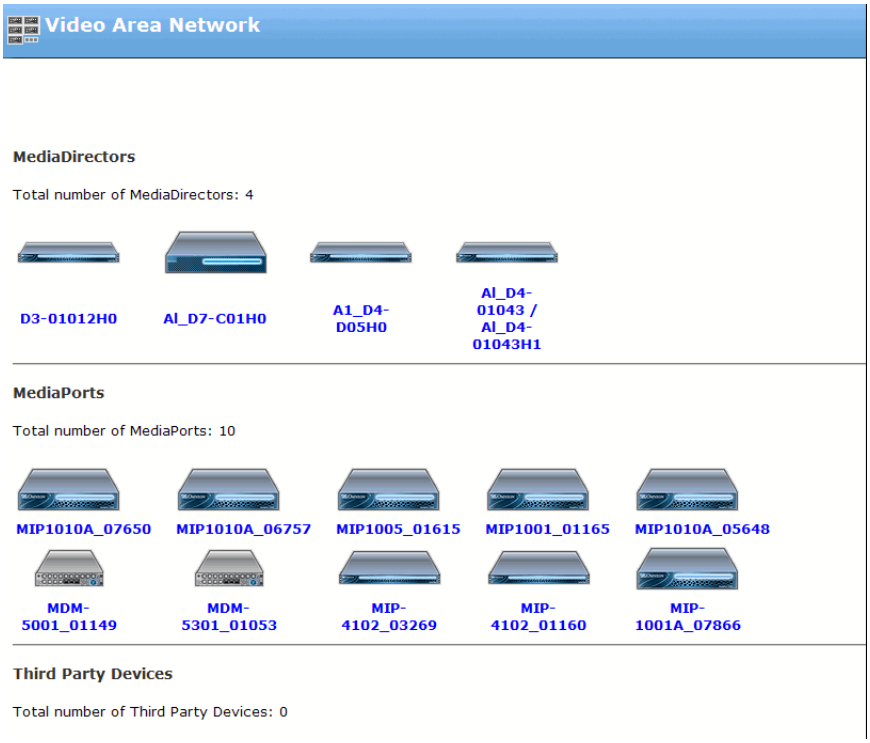


Figure 25. Omneon MediaDeck Devices

NOTE: On the **Video Area Network** page, shown in **Figure 25**, device names beginning with “D7” refer to Omneon MediaDecks, and device names beginning with “MDM” refer to Omneon MediaDeck modules.

The **Video Area Network** page is a scrolling list of all components that comprise your network, including Omneon MediaDecks (listed under **MediaDirectors**) and MediaDeck Modules (listed under **MediaPorts**).

- Click an MediaDeck Module icon to go to the **MediaDeck Module Properties** page. For information about configuring Omneon MediaDeck modules, refer to **Omneon MediaDeck Module Configuration**.
- Click an Omneon MediaDeck icon (listed under **MediaDirectors**) to go to the **Physical Configuration** page (see **Figure 26**). From the Physical Configuration page, click the Omneon MediaDeck icon or link to view the **MediaDeck Properties** page. For information about configuring the Omneon MediaDeck, refer to **Omneon MediaDeck Configuration**.

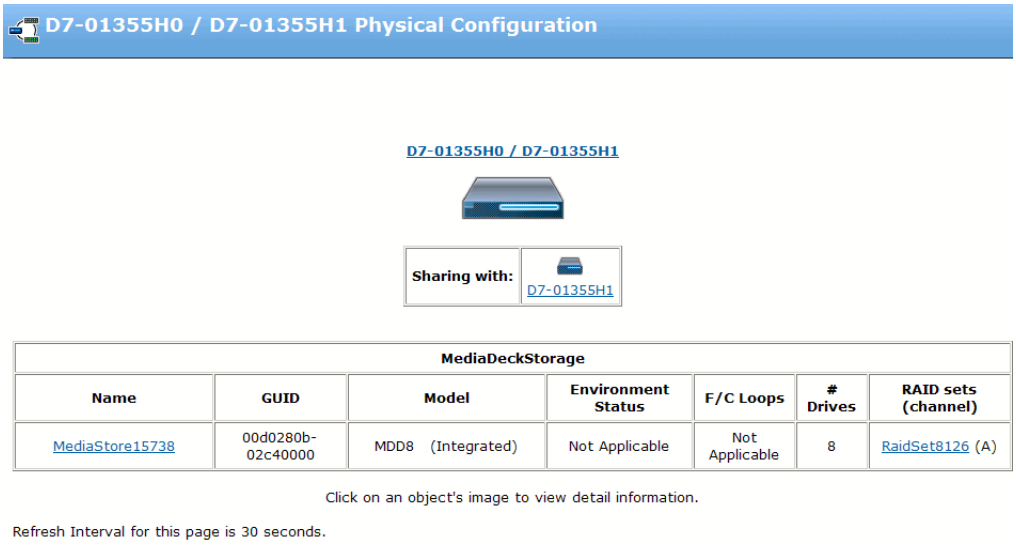


Figure 26. Physical Configuration

- To view **Mediadeck Storage Properties**, from the **Physical Configuration** page, under **Connected MediaDeck Storage**, click the link in the **Name** column.

NOTE: SystemManager sometimes displays MediaDeck Storage information as MediaStore information. There is no separate MediaStore in an Omneon MediaDeck system. Both terms, MediaDeck Storage and MediaStore, refer to the storage component in an Omneon MediaDeck.

For information about creating a file system and RAID set, continue to **Using One-Click Functions to Create a File System and RAID Set** in this chapter. For information about configuring Omneon MediaDeck storage, refer to **Omneon MediaDeck Storage Configuration**.

Verifying Your Release

After logging into SystemManager and prior to commencing system operation, verify the following:

- The SystemManager version is the same as shown on the title page of the Release Notes. Click the **Help** tab to view the SystemManager version.
- The **Firmware Selection** is the same as the Firmware Build shown on the title page of the Release Notes. Click the **Home** tab, and then click **Firmware Selection** in the left-hand column (ignore any digits after the build date).
- The **Upgrade Firmware** page shows the current firmware for all Omneon MediaDecks and MediaDeck Modules to have the same build date as the Firmware Build shown on the title page of the Release Notes. Click the **Home** tab, and then click **Upgrade Firmware** in the left-hand column (ignore any digits after the build date).

If you need to upgrade the software, refer to the *Omneon SystemManager Installation Guide* for detailed information on performing the upgrade. If you need to upgrade the firmware, refer to **Upgrading**

Firmware. For instructions on accessing the latest documentation, such as the Release Notes, refer to **Omneon MediaDeck Documentation Suite**.

Using One-Click Functions to Create a File System and RAID Set

This section provides instructions for building a file system for a single Omneon MediaDeck.

Select one of the following topics:

- **About the Omneon MediaDeck File System Configuration**
- **Viewing One-Click Functions for an Omneon MediaDeck**
- **Creating and Starting a File System**
- **Stopping all File Systems**
- **Starting all File Systems**
- **Deleting all File Systems**

About the Omneon MediaDeck File System Configuration

The following table shows the file system configuration for a single Omneon MediaDeck

# Drives	RAID Set	Capacity per Drive	Storage Capacity
8	6+2	500 GB	3 TB
8	6+2	1 TB	6 TB

Table 6. File System Configuration

Checking Drive Status

To check the Omneon MediaDeck's drive status from the **Disk Utilities** page:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck that you want to check. Its **Disk Utilities** page appears. Verify that the correct number of drives appears, and that the status of each drive is "alive."
4. Click the **Disk** icon for each drive to view the **Drive Properties** page. Verify the disk size (in GB) is as expected, and that the disk block size is 512.

About One-Click Functions

Use the “One-Click” functions to create and initialize the file system. **One-Click Functions** allow you to quickly and automatically create a file system on an Omneon MediaDeck.

Using a “**One-Click Function**” saves you from having to perform the following individual tasks in sequence:

1. Create a RAID set
2. Add disk drives to the RAID set
3. Create a file system
4. Add the RAID Set to the file system

Continue to the next section to use the One-Click Functions.

Viewing One-Click Functions for an Omneon MediaDeck

From the **Configuration** tab, click **Disk Utilities** in the left-hand column, and then click the **One-Click Functions** button to display the **One-Click Functions** page. A sample **One-Click Functions** page is shown in **Figure 27**.

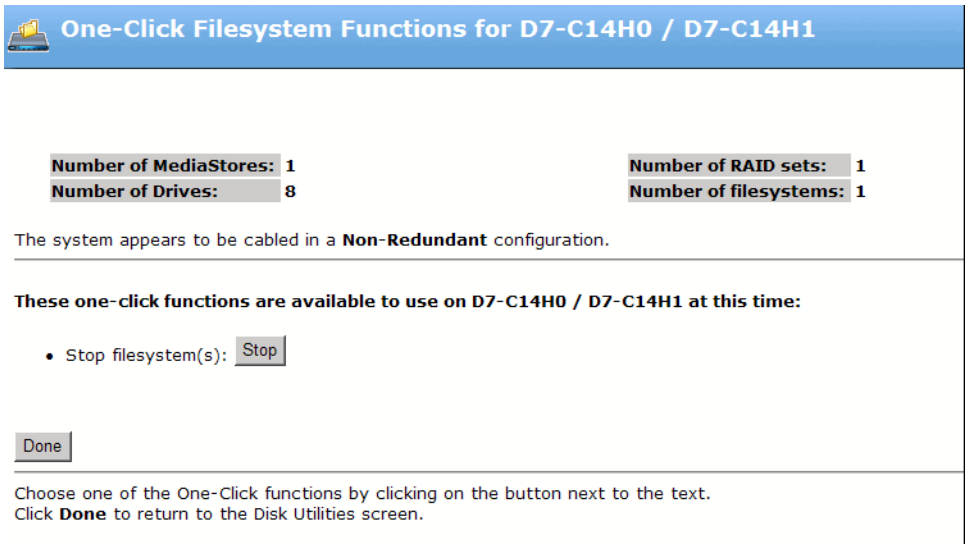


Figure 27. One-Click Functions

The **One-Click Functions** page is divided into sections:

- The top-most section indicates RAID sets and file systems that SystemManager discovers. The discovery process also indicates the Minimum F/C Loop Speed as Unknown, 1 Gbps, or 2 Gbps, and the wiring configuration as Non-redundant, Redundant or Invalid.

- In the middle “Warning” section (if it appears), one or more messages will be shown if the system (as discovered by SystemManager) does not match a valid wiring configuration. If the “Warning” section does not appear, the system is valid and you may create a file system using “One-Click” functions.
- In the lower “One-Click Functions” section, the array of buttons *changes* depending on whether or not a file system exists.

Following are descriptions of buttons in the **One-Click Functions** section. Remember that only selected buttons appear, depending upon the file system state.

- **Start**: When the **Start** button appears, it indicates that the file system has already been created, and it is stopped. Click **Start** to start the file system on the selected Omneon MediaDeck, including as many RAID sets as defined. The button disappears once the file system starts.
- **Stop**: When the **Stop** button appears, it indicates that a file system is running. Click **Stop** to stop all file systems that are currently running. The button disappears when the file system has stopped.
- **Delete**: When the **Delete** button appears, it indicates that a file system has already been created, and it is stopped. Click to delete all RAID sets and all file systems on the selected Omneon MediaDeck. Once clicked, a “Warning” message appears. After confirmation, the **Delete** button disappears and the **Create** button appears.
- **Create**: When the **Create** button appears, it indicates that there is no file system and no RAID sets. Click to create a file system and RAID set(s) using all the drives discovered in the selected Omneon MediaDeck. Two mutually exclusive radio buttons accompany the **Create** button, allowing you to choose the type of RAID set desired:
  - **6+2** selects a RAID set with 6 data drives, and 2 parity drives. This is the default selection. For example:
    - If the system sees 8 drives, a 6+2 RAID set is created.
    - If the system sees 16 drives, two 6+2 RAID sets are created.
  - **Done**: Click to return to the **Disk Utilities** page.

Creating and Starting a File System

Use this procedure to automatically create and initialize file systems on a new Omneon MediaDeck.

To create and start a file system:

1. As a prerequisite, there should be no RAID sets or file systems present on your system.

   To remove RAID sets or file system, refer to **Deleting all File Systems** for details.

2. On the **Disk Utilities** page, click the **One-Click Functions** button to display the **One-Click Functions** page.
3. Choose your desired RAID set configuration. Click the **6+2** radio button.
4. Enter the new file system’s name in the **New Filesystem Name** field, and click **Create**.

This action creates and starts the file system with the selected RAID set configuration. Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for proper naming conventions.

5. Click **Done** to complete the procedure and return to the **Disk Utilities** page.

NOTE: If the Omneon MediaDeck's SMB interface displays an outdated view after creating, renaming, or deleting a file system, reboot all Omneon MediaDecks to update the view.

Once you have created a file system and RAID set, continue to **Verifying the System Diagram and Components**.

Stopping all File Systems

Use this procedure to stop all file systems on the Omneon MediaDeck, in preparation for system configuration changes or to transport the system.

1. On the **Disk Utilities** page, click the **One-Click Functions** button to display the **One-Click Functions** page.
2. Click the **Stop** button. This action displays a warning dialog box.
3. Click **OK** to continue. All file systems on the Omneon MediaDeck are now stopped.
4. Click **Done** to complete the procedure. You may now restart the file system(s) or delete them.

Starting all File Systems

Use this procedure to start all file systems on the Omneon MediaDeck.

1. On the **Disk Utilities** page, click the **One-Click Functions** button to display the **One-Click Functions** page.
2. Click the **Start** button, then click **Done** to complete the procedure.

Deleting all File Systems

Use these steps to delete all Omneon MediaDeck file systems, in preparation for creating a new file system.

1. On the **Disk Utilities** page, click the **One-Click Functions** button to display the **One-Click Functions** page.
2. Ensure that all file systems are stopped. This is indicated by the presence of the **Delete** and **Start** buttons.
3. Click the **Delete** button. This action displays a warning dialog box.
4. Click **OK** to continue, then click **Done** to complete the procedure.

You can now create file systems.

Verifying the System Diagram and Components

To verify the proper connection of individual components, on the **System** diagram you should now start seeing all devices appear online.

1. For each device, the following sequence of labels will typically appear:
   - Configuring
   - Connected
2. Please verify that all devices are **Connected**.

   NOTE: The following steps assume that a file system has been created and initialized. Refer to **Using One-Click Functions to Create a File System and RAID Set**for instructions.

3. To check the Omneon MediaDeck Storage, from the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page for your entire system. See **Figure 28**.

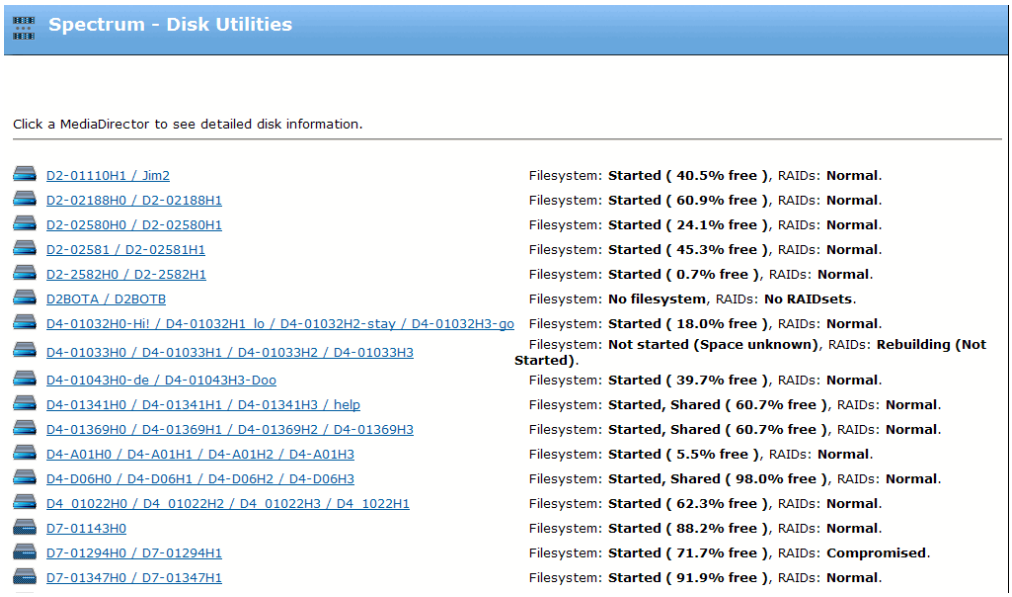


Figure 28. Disk Utilities page

4. Click the desired Omneon MediaDeck icon to display specific disk utilities for that Omneon MediaDeck. See **Figure 29**

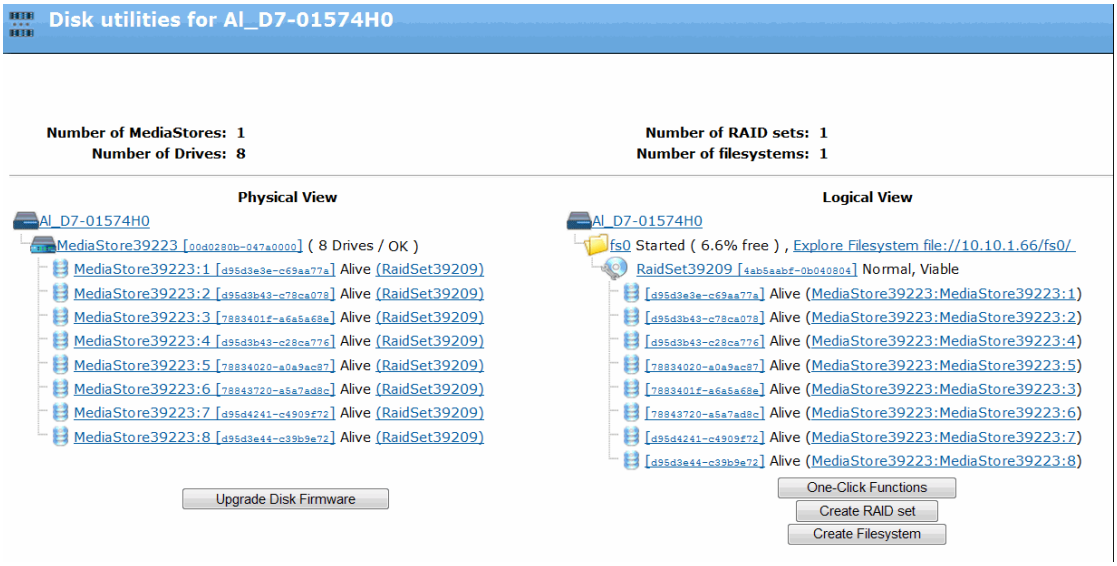
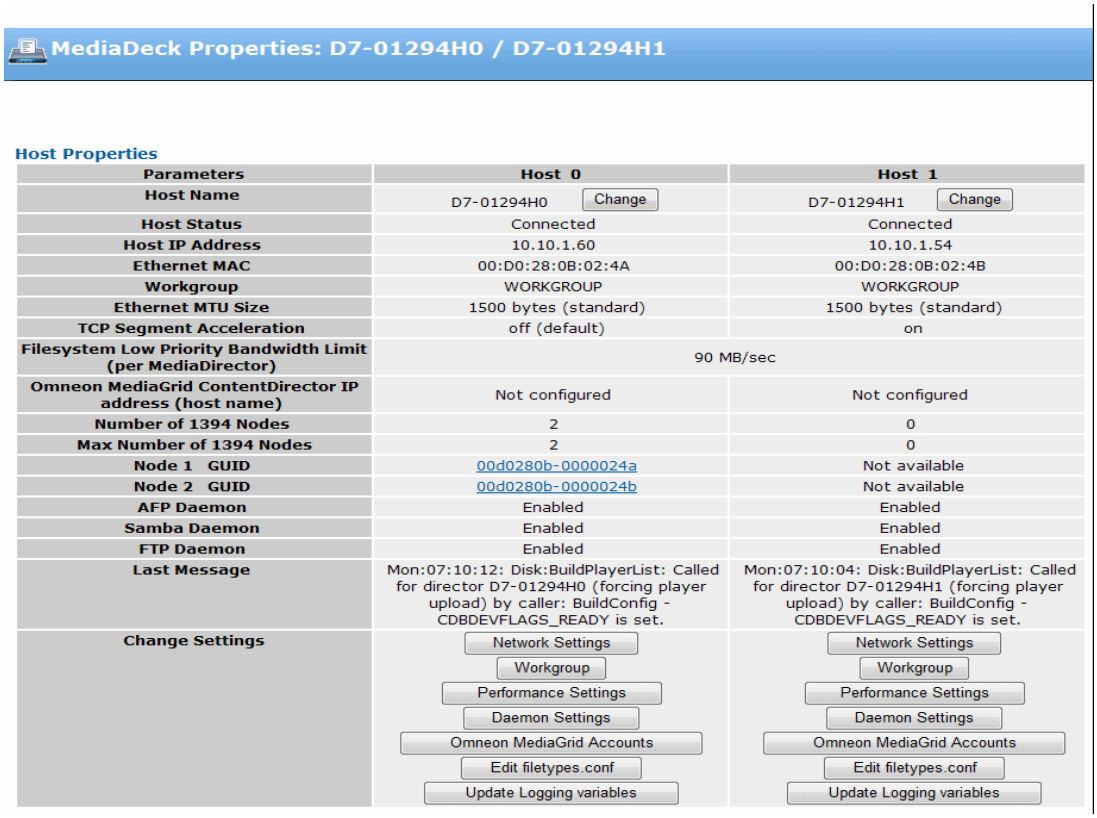


Figure 29. Disk Utilities for a Specific Omneon MediaDeck

5. Verify the following:
   - In the top section, verify that the number of enclosures, drives, RAID sets and file systems are correctly shown for your configuration.
   - In the **Physical View** section (on the left side), verify that the Omneon MediaDeck Storage displays the correct number of drives followed, by an **OK** status.
   - In the **Logical View** section (on the right side), verify that all RAID sets are **Viable**, and that the file system is in the **Started** state.
6. Make a note of specific properties for the Omneon MediaDeck:
   a. Click the **Configuration** tab.
   b. Click the icon for the Omneon MediaDeck to display the **MediaDeck Physical Configuration** page.
   c. Click the large image of the Omneon MediaDeck to display the **MediaDeck Properties** page, shown in **Figure 30**.



MediaDeck Properties: D7-01294H0 / D7-01294H1

Host Properties

Parameters	Host 0	Host 1
Host Name	D7-01294H0 Change	D7-01294H1 Change
Host Status	Connected	Connected
Host IP Address	10.10.1.60	10.10.1.54
Ethernet MAC	00:D0:28:0B:02:4A	00:D0:28:0B:02:4B
Workgroup	WORKGROUP	WORKGROUP
Ethernet MTU Size	1500 bytes (standard)	1500 bytes (standard)
TCP Segment Acceleration	off (default)	on
Filesystem Low Priority Bandwidth Limit (per MediaDirector)	90 MB/sec	
Omneon MediaGrid ContentDirector IP address (host name)	Not configured	Not configured
Number of 1394 Nodes	2	0
Max Number of 1394 Nodes	2	0
Node 1 GUID	00d0280b-0000024a	Not available
Node 2 GUID	00d0280b-0000024b	Not available
AFP Daemon	Enabled	Enabled
Samba Daemon	Enabled	Enabled
FTP Daemon	Enabled	Enabled
Last Message	Mon:07:10:12: Disk:BuildPlayerList: Called for director D7-01294H0 (forcing player upload) by caller: BuildConfig - CDBDEVFLAGS_READY is set.	Mon:07:10:04: Disk:BuildPlayerList: Called for director D7-01294H1 (forcing player upload) by caller: BuildConfig - CDBDEVFLAGS_READY is set.
Change Settings	Network Settings Workgroup Performance Settings Daemon Settings Omneon MediaGrid Accounts Edit filetypes.conf Update Logging variables	Network Settings Workgroup Performance Settings Daemon Settings Omneon MediaGrid Accounts Edit filetypes.conf Update Logging variables

Figure 30. MediaDeck Properties Page

d. In the **Unique Properties** section (at the top), make a note of each host's IP address.

e. In the **General Properties** section (farther down), make a note of the Omneon MediaDeck's serial number and firmware version.

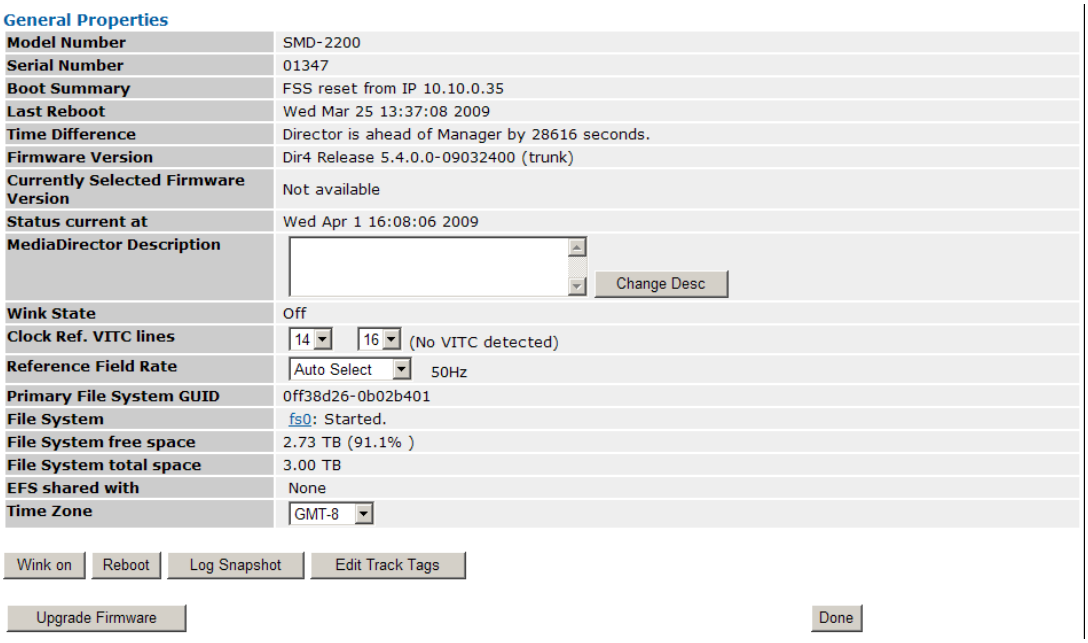


Figure 31. General Properties Section

NOTE: If you have connected and configured a printer, you can print the page by clicking **File** > **Print** in your browser's **Menu Bar**.

7. Make a note of specific parameters for each MediaDeck Module:
   a. Click the **Configuration** tab.
   b. Click the MediaDeck Module icon to show the **MediaDeck Module Properties page**. (For help identifying the MediaDeck Module, refer to **Viewing the Components of an Omneon MediaDeck**.)

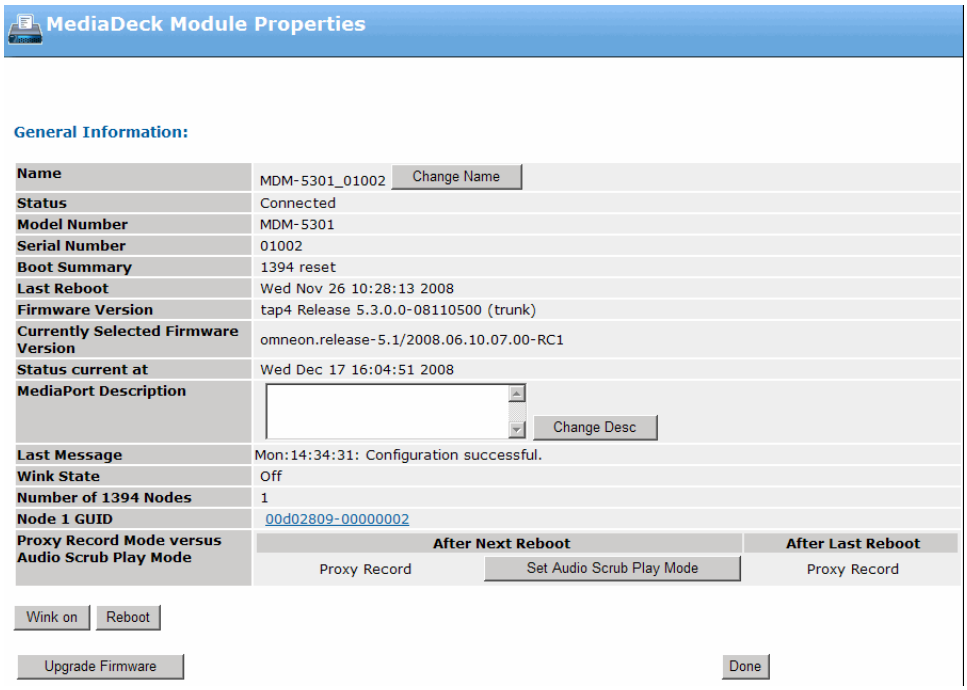


Figure 32. MediaDeck Module Properties Page

c. Make a note of the MediaDeck Module's firmware version. If desired, press **File > Print** in your browser's **Menu Bar** to print the entire page.

d. Repeat these steps for each MediaDeck Module.

8. Make a note of specific parameters for the SystemManager:

   a. Click the **Help** tab to display the **Version Information** page.

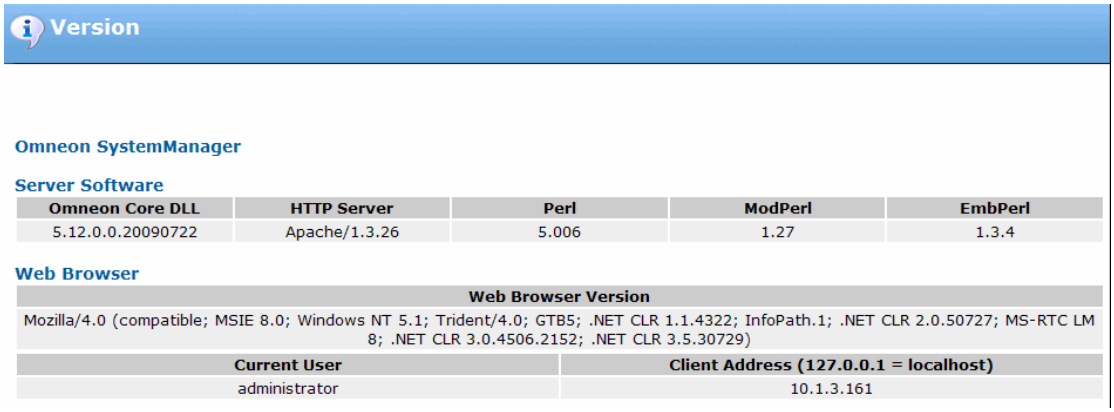


Figure 33. Version Information Page

   b. Make a note of the various software versions for your future reference.

NOTE: In rare cases, if the Omneon MediaDeck does not initialize correctly, or properly recognize all disk drives following a power up, you may need to reboot. Before rebooting, check to see if the Omneon

MediaDeck appears connected in the SystemManager System Diagram.This may take several minutes. Then, check to see if all disk drives are visible in the SystemManager's **Disk Utilities** page (see **Figure 29**). If all the drives are not visible, then reboot the Omneon MediaDeck. Refer to **Powering Down the Omneon MediaDeck**. Apply power to the Omneon MediaDeck by connecting the AC cords to the separate power sources.

CHAPTER 3
Creating a Player

This section describes how to create a player and attach the player to a device. Read the following sections in order:

- **Creating a Player**
- **Attaching Devices and Setting Conversion Options**
- **Player to Player Dubbing**
- **Disconnecting Devices**
- **Changing the Player State: Activating and Deactivating, Enabling and Disabling**
- **Deleting Players**
- **Editing a Player**
- **Additional Player Information**

NOTE: SystemManager version 5.6 and later checks the firmware version on Spectrum or MediaDeck systems and adjusts the player configuration user interface according to the features supported in the firmware version. If the firmware version of any component on your Spectrum or MediaDeck system is too old to support this SystemManager feature, a warning message will appear in the **Player Properties** page asking you to upgrade to a supported firmware version for this release of SystemManager. Omneon recommends that you upgrade to supported firmware versions soon after installing the latest SystemManager release.

Creating a Player

To create a player, follow the steps provided in **Initial Player Configuration** and then continue to the section that corresponds to the type of player you wish to create. This section includes the following:

- **Initial Player Configuration**
- **Creating a DV Player**
- **Creating a DVCPRO Player**
- **Creating a DVCPRO 50 Player**
- **Creating a DVCPRO HD Player**
- **Creating an MPEG SD Player**
- **Creating an MPEG HD Play only Player**
- **Creating an MPEG HD Record Only Player**

- **About Recording and Playing Back XDCAM HD Clips**
- **Creating an XDCAM HD or XDCAM EX Player**
- **Creating an XDCAM HD-RDD9 Player**
- **Creating an HDV 720 Player**
- **Recording Proxies**
- **Adding Audio Tracks**
- **About Selectable Audio Tracks**
- **About Audio Track Combinations**
- **Configuring Audio Scrub**

Initial Player Configuration

To create a player:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. In the left-hand column, click the **Player Configuration** icon.
3. On the **Player Configuration** page, click the icon for the Omneon MediaDeck host on which you want to create the Player. The **Player List** for the selected Omneon MediaDeck host appears.
4. On the **Player List**, click **Create a Player** to display the **Create Player** page.
5. Type a name for the new Player in the text box. Note that you cannot use the same Player name twice in an Omneon system. Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for naming conventions.
6. Click **Create** to display the **Edit Player** page.
7. Using the drop-down boxes, enter the Player's specific configuration:
   - Select the desired **Mode**: **Play Only**, **Record Only**, or **Play and Record**.
   - Select the desired **Frame Rate**: **25**, **29.97**, **50**, or **59.94**.

   NOTE: If you select either 50 or 59.94, then only DVCPRO HD or MPEG video tracks, as well as Audio and Data tracks can be added. The other tack type options will be grayed out.

   - Select the desired method of control: **Manual**, **VDCP**, **OmniBus**, or **BVW**.
     - If **Manual** or **Omnibus** is selected, there are no additional choices for control.
     - If **VDCP** control is selected, select as follows:
       - **Signal Port**: Choose the port number that you want to control. Select from 0 to 127.
       - **MediaPort Name**: Select the desired MediaDeck Module you want to receive serial control commands.

- **MediaPort Channel**: Select the desired MediaDeck Module channel. In versions of SystemManager prior to 5.10.1, channel A was automatically used for control.
- **Advance-to-Cued**: Enter the minimum number of frame times the VDCP port should still on reaching the end of a clip and before advancing to the beginning of the next cued clip. The **Advance-to-Cued** option can be used in conjunction with the player **Last-Frame-Freeze** option. Setting the **Last-Frame-Freeze** option to a non-zero value "N" causes the output to go black after freezing on the last frame of the active clip for N frames. If the **Advance-to-Cued** option is set to a value "M" where M is larger than N, then the output will go black after N frames of freezing on the last frame and then advance to the cued clip after another M-N frames.
- The following options should not be selected unless directed by your automation vendor or Omneon Technical Support:
  - **Cue-to-Timecode.** For information on Cue to Timecode. refer to "About 'Cue-to-Timecode' with VDCP Control" in the *Omneon SystemManager User's Guide*.
  - **ID Request checks ID for presence of all media files**
  - **Play Cue checks ID for presence of all media files**

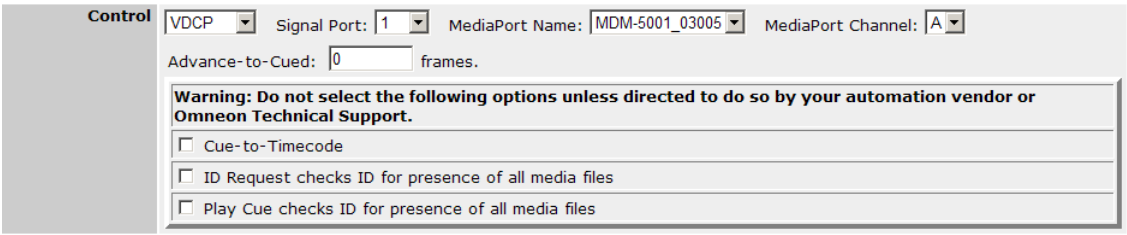


Figure 34. Control - VDCP

- If **BVW** is selected, select as follows:
  - **MediaPort Name**: Select the desired MediaDeck Module you want to receive serial control commands.
  - **MediaPort Channel**: Select the desired MediaDeck Module channel. In versions of SystemManager prior to 5.10.1, channel A was automatically used for control.

NOTE: The MediaDeck Module receiving serial control commands does not have to be the same MediaDeck Module that plays or records media.

- Select the desired **Timecode Display**: **Drop Frame** or **Non-Drop Frame**. Note that this selection only applies to 525/29.97 or 1080i/29.97 or 525/29.97 or 720p/59.94, Players. The default setting is **Drop Frame**
- (If required), select the **Record Timecode Source**: Select **External** to specify that the timecode should be obtained from an external source. Select **Internal (TCG on)** to specify that the timecode should be obtained from the server's Timecode Generator.

- (If required), select the **Playback Timecode Source**: Select **From Clip** to specify that the timecode should be obtained from the clip. Select **Internal (TCG on)** to specify that the timecode should be obtained from the server's Timecode Generator. The default setting is **From Clip**.

  When either **Record** of **Playback Timecode Source** is set to **Internal (TCG on)**, an additional set of options are available to configure timecode generation. Choose from the following:

  - **Timecode Generator Mode**:
    - **Hold** allows you to maintain timecode generation at a constant value specified via the Player API.
    - **Free Run** specifies a continuous increase in value, starting from a value specified via the Player API.
    - **Locked to Player Timeline** specifies that the timecode value is derived from the current position on the timeline.
    - **Locked to Clip Position** specifies that the timecode is derived from the current position within the current clip.
    - **Locked to Clip's First Timecode** specifies that the timecode is derived from the current clip's first timecode value.
    - **Locked to VITC input reference** specifies that the timecode is derived from the Vertical Interval Timecode (VITC) of the reference input.

  NOTE: When "Play and Record" Players are configured for Internal Timecode Generator and Locked to Clip Timecode, recorded clips are produced with starting times of 00:00:00.00 with VITC times from the original source, not 00:00:00.00.

  For additional details about Omneon timecode usage, refer to "About Omneon Timecode Behavior" in the *Omneon SystemManager User's Guide.*

- Select the desired **Last Frame Freeze** option. **0** indicates the last frame will be frozen until the next clip.
- If required, select the **EE Mode**: **Normal**, **Never**, or **Record**. The default is **Normal**.
  - **Normal**: when selected, the input video for the player is displayed in the video out (or video loop-through) whenever the player is stopped.
  - **Never**: when selected, the input video for the player is never displayed in the video out (or video loop-through) regardless of the player state.
  - **Record**: when selected, the input video for the player is displayed in the video out (or video loop-through) only when the player is recording.
- Select the **Media Wrapper Format**: **QuickTime (Reference)**, **QuickTime (Self Contained), MXF OP1a (Internal)**, **MXF OP1a (Internal, Low Latency), MXF OP1a (Internal eVTR), MXF OP1b (External)**, **MXF AS02**, or **MXF OP1a (Internal XDCAM HD-RDD9)**. The default media wrapper format is **QuickTime Reference**.

  NOTE: MXF OP1a (Internal eVTR) only appears if the selected Frame Rate is 25 or 29.97. MXF OP1a (Internal, Low Latency) only appears if the selected Mode includes Record, and the MediaDirector/MediaDeck firmware is 5.1 or later.

NOTE: For players using either the MXF OP1a (Internal eVTR) wrapper or the MXF OP1a (Internal XDCAM HD-RDD9) wrapper, the video track and first audio track will not display a **Remove** button unlike other players. This is to ensure that there is at least one video track and one audio track. To remove the video and audio track, change the wrapper to something other than MXF OP1a (Internal eVTR) or MXF OP1a (Internal XDCAM HD-RDD9). The Remove button will reappear

Refer to **Available Media and Wrapper Formats** for information on supported track and media wrapper format combinations.

8. Omneon recommends that you leave the **Default Clip Directory** field empty. This action allows the Omneon MediaDeck to determine the default location for clips.

   NOTE: Changing the Player's Clip Directory using Windows ClipTool will not affect the Clip Directory that is used by other ClipTools, nor will it affect the Clip Directory used by control applications (for example, VDCP, OmniBus, BVW, etc).

   If you choose a *different* default directory, it must have been previously created, and the full path name must be used (e.g., **/fs0/mydirectory**) in the **Default Clip Directory** field. To create directories on the Omneon MediaDeck's file system, ensure that you have first mapped the Omneon MediaDeck's file system to a network drive. Once this is done, directories can be created in the normal way. The Omneon MediaDeck expects directory names to be separated using forward slashes ('/',) not backward slashes as used within Microsoft Windows.

   Refer to "Mapping a MediaDirector File System to a Windows Network Drive" in the *Omneon SystemManager User's Guide* for complete instructions on mapping network drives.

9. To choose one (or more) video tracks for the Player, refer to the following procedures:

   - **Creating a DV Player**
   - **Creating a DVCPRO Player**
   - **Creating a DVCPRO 50 Player**
   - **Creating a DV MPEG SD Player**
   - **Creating an MPEG SD Player**
   - **Creating an MPEG HD Play only Player**
   - **Creating an MPEG HD Record Only Player**
   - **Creating an XDCAM HD or XDCAM EX Player**
   - **Creating an HDV 720 Player**

   NOTE: You can add tracks of different video formats to the same Player (for example, one **DV25** track plus one **10-bit SDI** track). Starting with release 4.3, you can add additional tracks of the same video format to the same Player if the formats are either **DV25**, **DV50**, or **MPEG 25 I-Frame**.
   If you add a video track by mistake, click the **Remove** button adjacent to the track.

   IMPORTANT: When creating a Player, any values you enter must be supported by the MediaPort/MediaDeck Module to which the player will be attached. If the Player contains unsupported values, once you try to attach the MediaPort/MediaDeck Module to the Player, an error message will appear.

10. Once you select the video format, continue with **Adding Audio Tracks**. If you add an audio track by mistake, click the **Remove** button adjacent to the track.

Creating a DV Player

Use this procedure to add a DV (25 Mbps) track with two channels of embedded audio to the Player.

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **DV25** to add a DV video track to the Player.
3. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   DV25 tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5001
   - MediaDeck Module 5401
   - MediaDeck Module 5501

4. From the **Configuration** drop-down menu, choose between the **Simple** or **Advanced** configuration.

   - The **Simple** configuration in **Figure 35** programs a DV25 Player that records and plays back only a *single* type of clip.

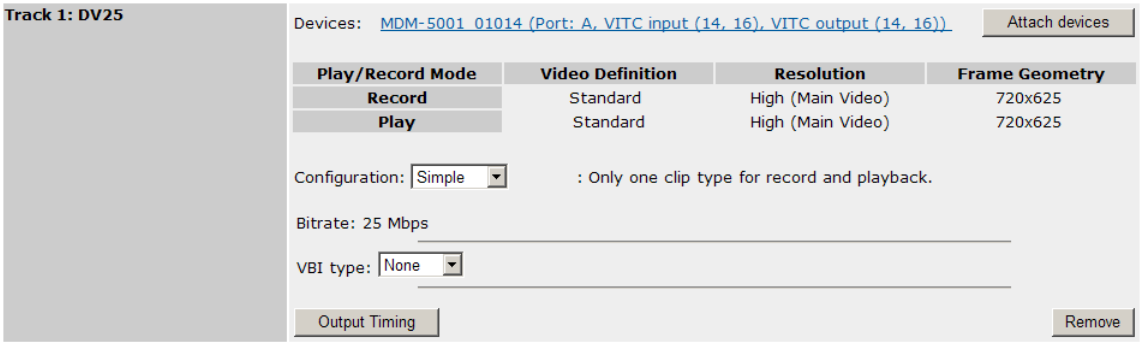


Figure 35. Creating a DV Player—Simple Configuration

If you select **Simple**, the Player records and plays back a single type of clip only. No other configuration is necessary. Please continue to **Step 5**.

- The **Advanced** configuration shown in **Figure 36** programs a DV25 Player that records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips.

NOTE: For an MediaDeck Module to switch between DV/DVCPRO and MPEG clips or MPEG and DV/DVCPRO clips, the Player must be reset for the new format. Stop the Player, eject the clip(s) from the timeline and load the new format clips. The Player is now reset for the new format.

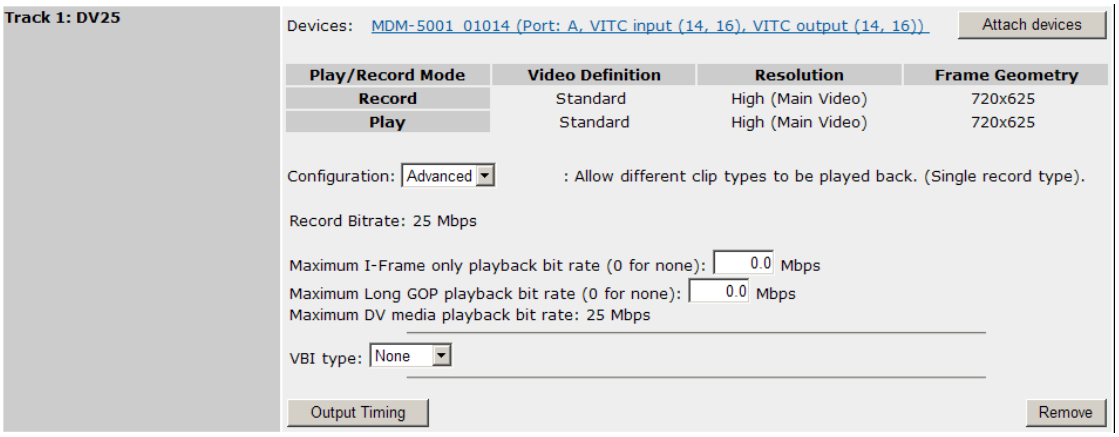


Figure 36. Creating a DV Player—Advanced Configuration

If you select **Advanced**, the Player records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips. Configure as follows according to Player mode:

- **Play only** or **Play and Record** mode:
  - Set the I-Frame playback rate in the **Maximum I-Frame only playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no I-Frame playback, enter 0.
  - Set the Long GOP playback rate in the **Maximum Long GOP playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no Long GOP playback, enter 0.
  - Select the clip type from the **Maximum DV media playback bitrate...** drop-down menu. Select **None** if no DV media types are to be played back. Select **25 Mbps** for DV 25 or DVCPRO media types. Select **50 Mbps** for DV 25, DVCPRO, or DVCPRO 50 media types.
- **Record Only** mode: No additional configuration is needed.

5. As required, click **DV25** again to add more DV tracks to the Player. This procedure would be required, for example, if you wanted *one* Player to handle more than one signal, such as a key signal and a fill signal simultaneously.

   If you added a video track by mistake, click the **Remove** button adjacent to the track.

6. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. To preserve VBI data, you may select **VBI File**.

   If the player is configured to record, a series of eight drop-down boxes appears. Select the lines that you wish to record. A minimum of one must be selected, otherwise the Player cannot be activated.

   Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

7. As required, add an additional video track of the same or different format.

NOTE: From release 4.3, support is provided for Players which have two attached video tracks of the same format (DV25, DV 50, or MPEG 25 I-Frame).

or:

Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating a DVCPRO Player

Use this procedure to add a DVCPRO (25 Mbps) video track.

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **DVCPRO** to add a DVCPRO 25 video track to the Player.
3. Connect the track to the appropriate MediaDeck Modules. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   DVCPRO tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5001
   - MediaDeck Module 5401
   - MediaDeck Module 5501
4. From the **Configuration** drop-down menu, choose between the **Simple** or **Advanced** configuration.

   - The **Simple** configuration in **Figure 37** programs a DVCPRO 25 Player that records and plays back only a *single type* of clip.

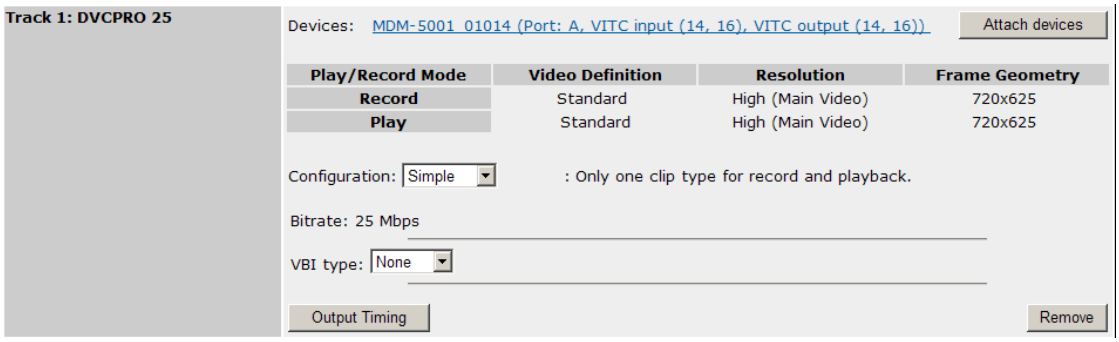


Figure 37. Creating a DVCPRO 25 Player—Simple Configuration

If you select **Simple**, the Player records and plays back a single type of clip only. No other configuration is necessary. Please continue to **Step 5**.

- The **Advanced** configuration shown in **Figure 38** programs a DVCPRO 25 Player that records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips.

  NOTE: For an MediaDeck Module to switch between DV/DVCPRO and MPEG clips or MPEG and DV/DVCPRO clips, the Player must be reset for the new format. Stop the Player, eject the clip(s) from the timeline and load the new format clips. The Player is now reset for the new format.

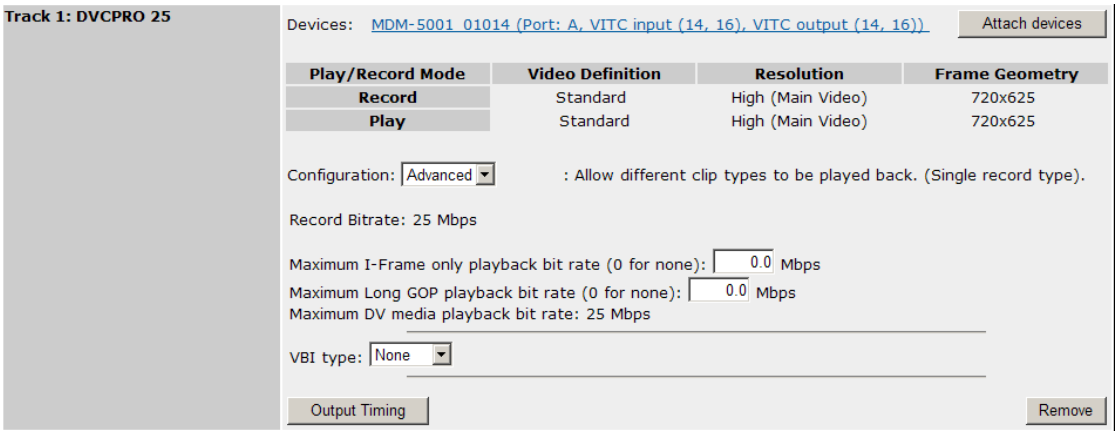


Figure 38. Creating a DVCPRO 25 Player—Advanced Configuration

If you select **Advanced**, the Player records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips. Configure as follows according to Player mode:

- **Play only** or **Play and Record** mode:
  - Set the I-Frame playback rate in the **Maximum I-Frame only playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no I-Frame playback, enter 0.
  - Set the Long GOP playback rate in the **Maximum Long GOP playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no Long GOP playback, enter 0.
  - Select the clip type from the **Maximum DV media playback bitrate...** drop-down menu. Select **None** if no DV media types are to be played back. Select **25 Mbps** for DV 25 or DVCPRO media types. Select **50 Mbps** for DV 25, DVCPRO, or DVCPRO 50 media types.
- **Record Only** mode:

  An **Xfer Speed** drop-down box appears only when the mode is set to “Record Only” and only when the Frame Rate is set to “29.97”. Leave the default selection of 1x for normal speed ingest of SDI material.

5. As required, click **DVCPRO** again to add more DVCPRO tracks to the Player.

   If you added a video track by mistake, click the **Remove** button adjacent to the track.

6. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. To preserve VBI data, you may select **VBI File**.

   If the player is configured to record, a series of eight drop-down boxes appears. Select the lines that you wish to record. A minimum of one must be selected, otherwise the Player cannot be activated.

   Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

7. As required, add a video track of a *different* format, or continue by adding an audio track.

Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating a DVCPRO 50 Player

Use this procedure to add a DVCPRO 50 (50 Mbps) video track with four channels of embedded audio to the Player.

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **DVCPRO 50** to add a DVCPRO 50 video track to the Player.
3. Connect the track to the appropriate MediaDeck Modules. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   DVCPRO 50 tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5001
   - MediaDeck Module 5401
   - MediaDeck Module 5501

4. From the **Configuration** drop-down menu, choose between the **Simple** or **Advanced** configuration.

   - The **Simple** configuration in **Figure 39** programs a DVCPRO 50 Player that records and plays back only a *single type* of clip.

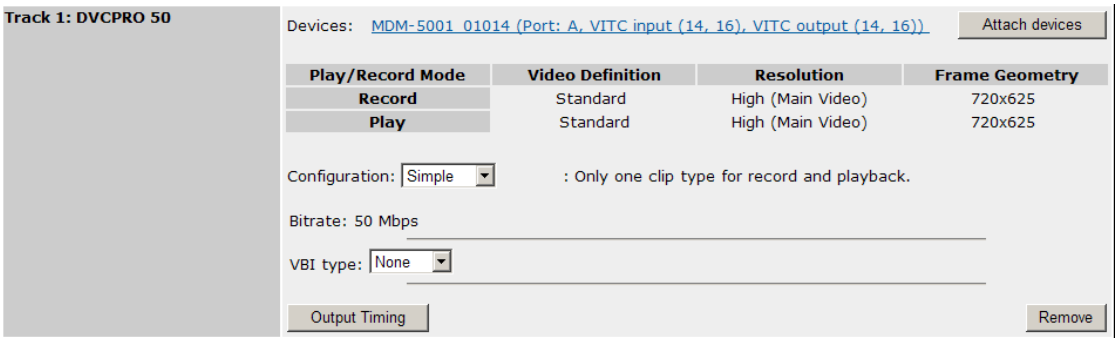


Figure 39. Creating a DVCPRO 50 Player—Simple Configuration

If you select **Simple**, the Player records and plays back a single type of clip only. No other configuration is necessary. Please continue to **Step 5**.

- The **Advanced** configuration shown in **Figure 40** programs a DVCPRO 50 Player that records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips.

  NOTE: For an MediaDeck Module to switch between DV/DVCPRO and MPEG clips or MPEG and DV/DVCPRO clips, the Player must be reset for the new format. Stop the Player, eject the clip(s) from the timeline and load the new format clips. The Player is now reset for the new format.

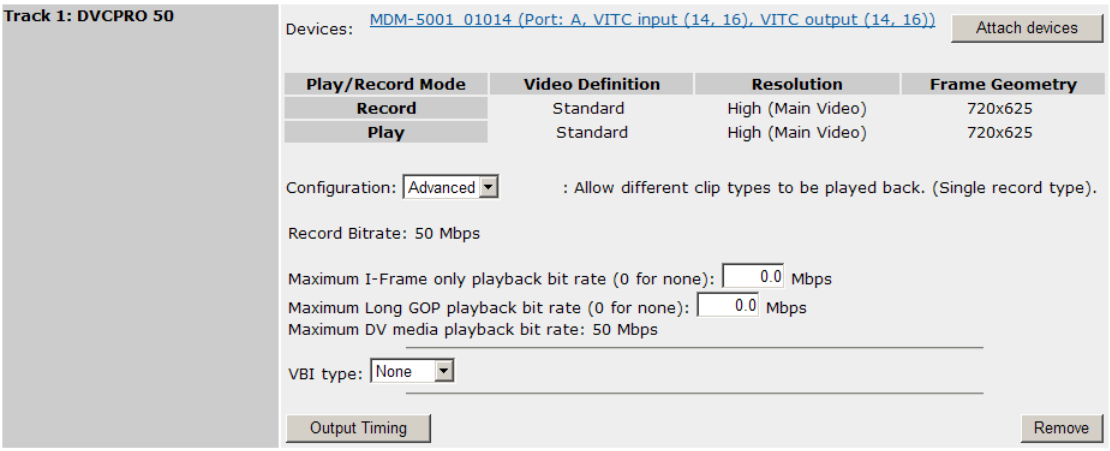


Figure 40. Creating a DVCPRO 50 Player—Advanced Configuration

If you select **Advanced**, the Player records a single type of clip but plays back *different types* of DV, DVCPRO, or MPEG clips. Configure as follows according to Player mode:

- **Play only** or **Play and Record** mode:
  - Set the I-Frame playback rate in the **Maximum I-Frame only playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no I-Frame playback, enter 0.
  - Set the Long GOP playback rate in the **Maximum Long GOP playback bitrate...** field. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For no Long GOP playback, enter 0.
  - Select the clip type from the **Maximum DV media playback bitrate...** drop-down menu. Select **None** if no DV media types are to be played back. Select **25 Mbps** for DV 25 or DVCPRO media types. Select **50 Mbps** for DV 25, DVCPRO, or DVCPRO 50 media types.
- **Record Only** mode: No additional configuration is needed.

5. As required, click **DVCPRO 50** again to add more DVCPRO 50 tracks to the Player. This procedure would be required, for example, if you wanted one Player to handle more than one signal, such as a key signal and a fill signal simultaneously.

   If you added a video track by mistake, click the **Remove** button adjacent to the track.

6. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. To preserve VBI data, you may select **VBI File**.

   If the player is configured to record, a series of eight drop-down boxes appears. Select the lines that you wish to record. A minimum of one must be selected, otherwise the Player cannot be activated.

   Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

7. As required, add an additional video track of the same or different format.

NOTE: From release 4.3, support is provided for Players which have two attached video tracks of the same format (DV25, DV 50, or MPEG 25 I-Frame).

or:

Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating a DVCPRO HD Player

To add a DVCPRO HD (100.0 Mbps) track:

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **DVCPRO HD** to add a DVCPRO HD video track to the Player.
3. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   DVCPRO HD tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5401
   - MediaDeck Module 5501

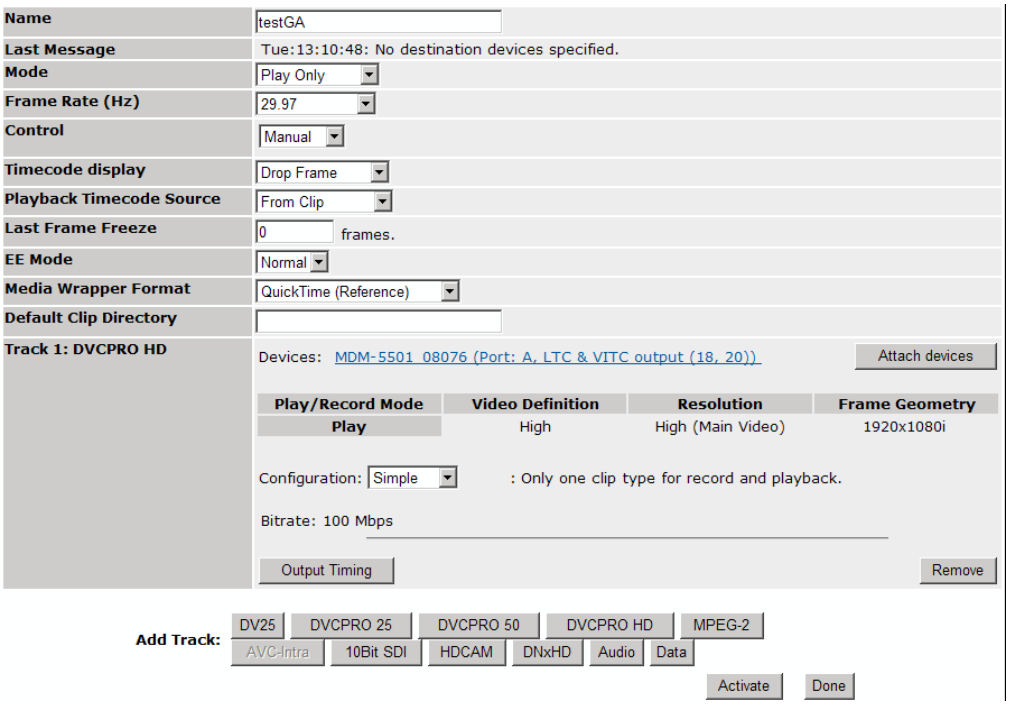


Figure 41. Creating a DVCPRO HD Player

4. If you added a video track by mistake, click the **Remove** button adjacent to the track.
5. As required, add a video track of a *different* format, or continue by adding an audio track.

Creating a DV MPEG SD Player

Use this procedure to create a Player which can play DV and MPEG video tracks back to back.

NOTE: A DV MPEG Player cannot include embedded VBI, however, if the VBI data option is selected —Step 7 on page 72, the Player can play back both separate and embedded VBI, as long as embedded VBI is present.

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. Connect the track to the appropriate MediaDeck Modules. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   DV MPEG SD tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5001
   - MediaDeck Module 5401
   - MediaDeck Module 5501
4. From the **Configuration** drop-down box, select **Advanced Back to Back** as shown below.

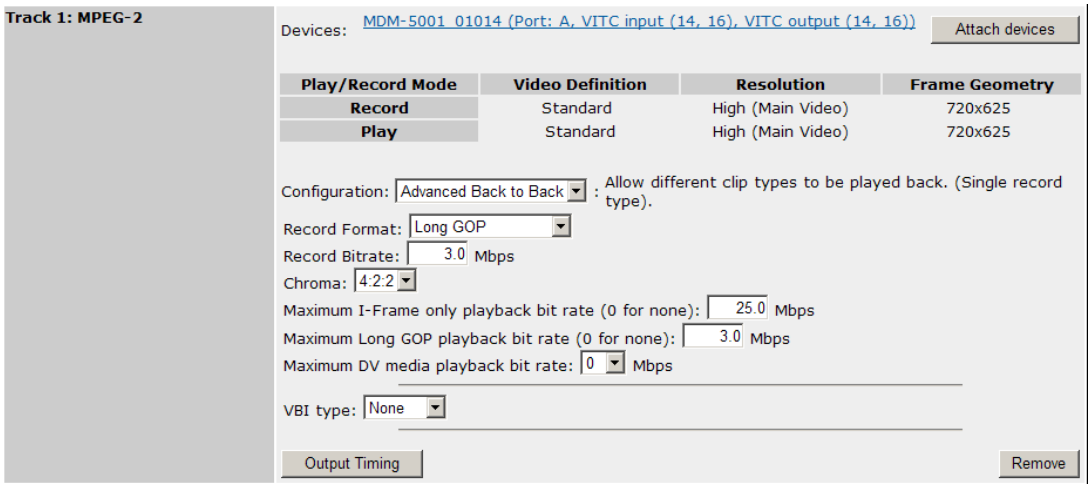


Figure 42. Creating a DV MPEG SD Player

5. From the **Record Format** drop-down box, select from **I-Frame**, **Long GOP**, or **IMX**.

   NOTE: When Long GOP is selected as the record format, you can select **Enable Open GOP** if you wish to record Open GOP.
6. Both **Play Only** and **Play and Record** Player Modes are supported for DV MPEG Players. Depending on the Mode selected, proceed as follows:

   - **Play and Record** mode:
     - From the **Format** drop-down menu, choose the required format: **I-Frame**, **Long GOP**, or **IMX**.

- In the **Bitrate** field specify a valid bitrate for the selected format. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**.
- Select the required **Chroma** setting. Choose from **4:2:2** or **4:2:0**.
- In the **Maximum I-Frame playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
- In the **Maximum Long GOP playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
- In the **Maximum DV media playback bitrate...** drop-down menu, select the maximum bandwidth of DV type media you expect to play back. If using DV 25 or DVCPRO media only, choose **25 Mbps**. If using DVCPRO 50 media, choose **50 Mbps**.

- **Play Only** mode:
  - From the **Format** drop-down menu, select the required format: **I-Frame**, **Long GOP**, or **IMX**.
  - In the **Maximum I-Frame playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
  - In the **Maximum Long GOP playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
  - In the **Maximum DV media playback bitrate...** drop-down menu, select the maximum bandwidth of DV type media you expect to play back. If using DV 25 or DVCPRO media only, choose **25 Mbps**. If using DVCPRO 50 media, choose **50 Mbps**.

7. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. If you want to preserve or play back VBI data, select **VBI File** or **Internal**.

   NOTE: For clips created with non-Omneon equipment, Omneon recommends that you select **Internal**.

   If the player is configured to record, a series of eight drop-down boxes appears. Select the lines that you wish to record. A minimum of one must be selected, otherwise the Player cannot be activated.

   NOTE: For the MediaDeck Module 5220, 5320, 5400, and 5500 series, if you are also configuring VANC for SD video, note that the following selections reduce the number of available VBI lines:

   - If the player frame rate is 29.97 Hz, this reduces available VBI lines by one.
   - If VITC capture is selected from the Attach Devices page, this reduces availble VBI lines by two.
   - Line 21 Closed Captioning reduces available VBI lines by one.

Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

8. If you want to preserve or playback VANC data for SD video, select an option from the **VANC type** drop-down menu. Depending on your wrapper format, you may select **Internal** or **SMPTE 436M Track**.

   IMPORTANT: Avoid selecting VANC for SD video without assistance from Omneon Technical Support.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series for playout with SD material.

   In the **Maximum Number of VANC** data field, enter the desired bytes per frame value. For more information about VANC for SD video, contact Omneon Technical Support.

   VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5320, 5400, and 5500 series only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

9. Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating an MPEG SD Player

Use this procedure to add an MPEG video track (with selectable bitrates) to a Player for SD output. An MPEG Player cannot include embedded audio.

1. Ensure that the first eight steps in **Creating a Player** are complete.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. After all tracks have been added, connect the tracks to the appropriate MediaDeck Modules.

   Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   MPEG tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5001
   - MediaDeck Module 5221 for recording and playing SD IMX or MPEG-2 SD material.
   - MediaDeck Module 5321 for recording and playing SD IMX, or MPEG-2 SD and HD material.

     NOTE: For the MediaPort 5320 series, if you selected **Record Only** or **Play and Record** for the **Mode**, make sure that, in the **Video Definition** drop-down menu, **Standard** is selected.

   - MediaDeck Module 5401 for playing SD IMX or MPEG-2 SD

     For details about Up Conversion or Down Conversion options, refer to step 5 of **Attaching Devices and Setting Conversion Options**

   - MediaDeck Module 5501 for playing SD IMX, or MPEG-2 SD material.

     For details about Up Conversion or Down Conversion options, refer to step 5 of **Attaching Devices and Setting Conversion Options**

NOTE: If the attached MediaDeck Module does not support the selected player settings, then the following message appears: **Specified combination of video parameters is not supported by the attached device**. For a description of valid formats and bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**.

4. From the **Configuration** drop-down box, select between the **Simple** or **Advanced** configuration.

   - The **Simple** configuration in **Figure 43** allows you to design an MPEG Player that records and plays back only a *single type* of MPEG clip.

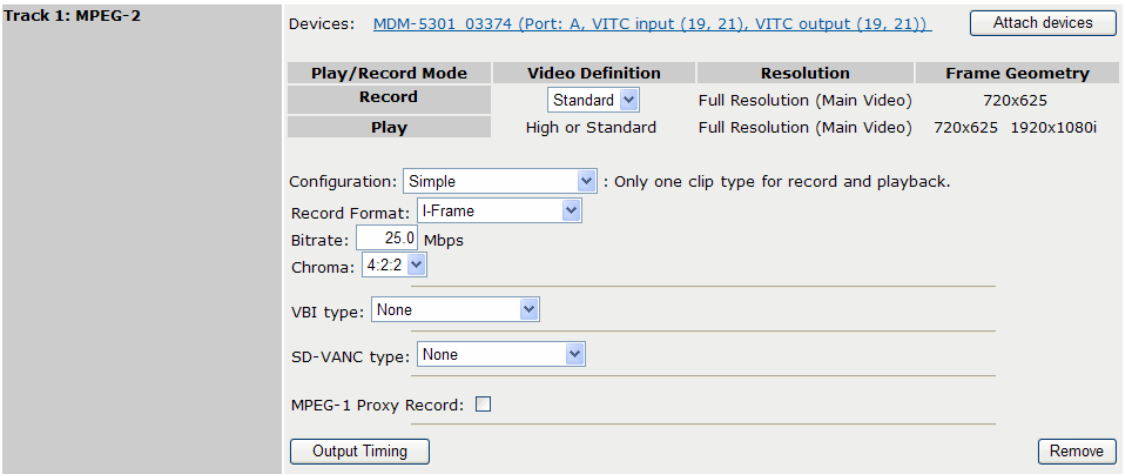


Figure 43. Creating an MPEG SD Player—Simple Configuration

Clip type is selected via the **Format** or **Record Format** field. The bitrate for both the encoded and the decoded clip must be the same.

- The **Advanced** configuration in **Figure 44** allows you to design an MPEG Player that records and plays back *different types* of MPEG and DV clips.

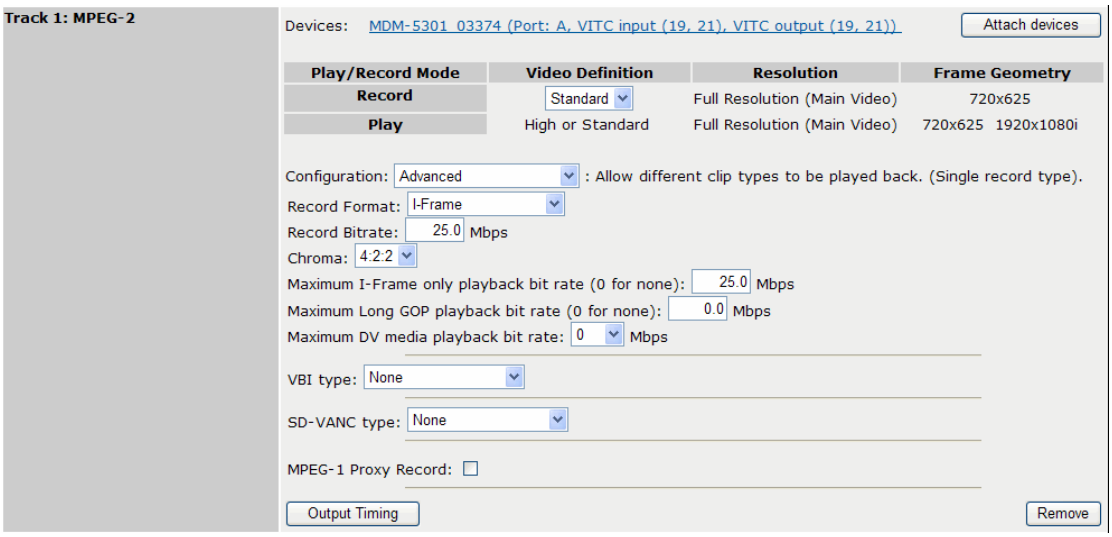


Figure 44. Creating an MPEG SD Player—Advanced Configuration

The encoded clip type is selected via the **Record Format** field, and the decoded clip types are selected via two **Playback Bitrate** fields; one for **I-Frame** only clips and one for **Long GOP** clips. With this configuration, you can play back clips that were encoded at different bitrates.

NOTE: The Advanced configuration page changes, based on the selected Player mode: If "Play and Record" is selected, both the Record Bitrate and Playback Bitrate fields appear. If **Record Only** is selected, only the Record Bitrate field appears. If **Play Only** is selected, only the Playback Bitrate fields appear.

5. Depending on the configuration selected, proceed as follows:

- If you selected **Simple**, in the **Format** or **Record Format** and **Bitrate** fields, choose the required format and specify a bitrate for that format. Continue to **Step 6**. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**.

  NOTE: When Long GOP is selected as the record format, you can select **Enable Open GOP** if you wish to record Open GOP.

- If you selected **Advanced**, your entries now depend on the Player mode:

  - **Play and Record** mode:

    - From the **Format** drop-down menu, choose the required format: **I-Frame**, **Long GOP**, or **IMX**.

      NOTE: When Long GOP is selected as the record format, if you wish to record Open GOP, you can select **Enable Open GOP**.

    - In the **Bitrate** field specify a valid bitrate for the selected format. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**.

- In the **Maximum I-Frame playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
- In the **Maximum Long GOP playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
- In the **Maximum DV media playback bitrate...** drop-down menu, select the maximum bandwidth of DV type media you expect to play back. If using DV 25 or DVCPRO media only, choose **25 Mbps**. If using DVCPRO 50 media, choose **50 Mbps**.

- **Record Only** mode:
  - In the **Record Format** and **Bitrate** fields, choose the required format and specify a bitrate for that format.

    NOTE: When Long GOP is selected as the record format, if you wish to record Open GOP, you can select **Enable Open GOP**.

- **Play Only** mode:
  - In the **Maximum I-Frame playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
  - In the **Maximum Long GOP playback bitrate...** field, enter the desired maximum decoding bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
  - In the **Maximum DV media playback bitrate...** drop-down menu, select the maximum bandwidth of DV type media you expect to play back. If using DV 25 or DVCPRO media only, choose **25 Mbps**. If using DVCPRO 50 media, choose **50 Mbps**.

6. Select the required **Chroma** setting. Choose from **4:2:2** or **4:2:0.**
7. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. If you want to preserve or play back VBI data, from the **VBI Type** drop-down menu, select either **Internal** or **VBI File**.

   NOTE: For clips created with non-Omneon equipment, Omneon recommends that you select **Internal**.

   Using the eight drop-down VBI line selection boxes, select the lines that you wish to record. A minimum of one line must be selected.

   NOTE: For the MediaDeck Module 5220, 5320, 5400, and 5500 series, if you are also configuring VANC for SD video, note that the following selections reduce the number of available VBI lines:

   - If the player frame rate is 29.97 Hz, this reduces available VBI lines by one.
   - If VITC capture is selected from the Attach Devices page, this reduces availble VBI lines by two.

- Line 21 Closed Captioning reduces available VBI lines by one.

Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

8. If you want to preserve or playback VANC data for SD video, select an option from the **VANC type** drop-down menu. Depending on your wrapper format, you may select **Internal** or **SMPTE 436M Track**.

   IMPORTANT: Avoid selecting VANC for SD video without assistance from Omneon Technical Support.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series for playout with SD material.

   In the **Maximum number of VANC data** field, enter the desired bytes per frame value. For more information about VANC for SD video, contact Omneon Technical Support.

   VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5320, 5400, and 5500 series only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

   NOTE: Depending on the attached MediaDeck Module and the MediaDeck Module settings, an option for **MPEG-1 Proxy Record** (for 'Record Only' or 'Play and Record' players) may be available. For information about recording proxies, see **Recording Proxies**.

9. As required, add an additional video track of the same or different format.

   or

   Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating an MPEG HD Play only Player

Use this procedure to add an MPEG video track (with selectable bitrates) to a Player for HD output. Note that an MPEG Player cannot include embedded audio.

To create an MPEG HD play only Player:

1. Ensure that the first six steps in **Creating an MPEG SD Player** are complete.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

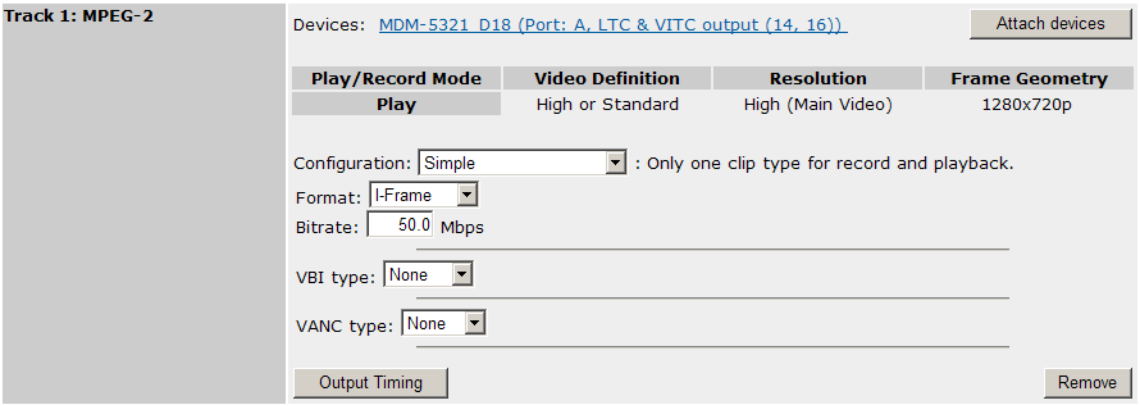
   MPEG tracks may be connected to the following MediaDeck Modules for HD playout:

   - MediaDeck Module 5321
   - MediaDeck Module 5401

     To select Up Conversion or Down Conversion options, refer to step 6 of **Attaching Devices and Setting Conversion Options**.

- MediaDeck Module 5501

  To select Up Conversion or Down Conversion options, refer to step 6 of **Attaching Devices and Setting Conversion Options**.



4. If you want to preserve or play back VBI data, select an option from the **VBI Type** drop-down menu: **Internal**, **Omneon VBI Data**, or **SMPTE 436M Track** (options will vary based on wrapper format).

   NOTE: For clips created with non-Omneon equipment, Omneon recommends that you select **Internal** or **SMPTE 436M** Track.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5400, and 5500 series with playout.

5. If you want to preserve or playback VANC data, select an option from the **VANC Type** drop-down menu. Depending on your wrapper format, you may select **Internal** or **SMPTE 436M Track**.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series with playout.

   In the **Maximal number of bytes of VANC data per frame** field, enter the desired value. For more information about VANC, refer to “About Omneon’s VANC Implementation” in the *Omneon SystemManager User’s Guide*.

   NOTE: VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5320, 5400, and 5500 series only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

6. If you wish to adjust Output Timing, click the **Output Timing** button. For more information, refer to “Adjusting Output Timing” in the *Omneon SystemManager User’s Guide*. Otherwise continue to the next step.

7. As required, add an additional video track of the same or different format or: continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

   NOTE: Since release 4.3, support is provided for Players which have two attached video tracks of the same format (MPEG 25 I-Frame).

Creating an MPEG HD Record Only Player

Use this procedure to add an MPEG video track to a Player for HD ingest.

To create an MPEG HD record only player:

1. Ensure that the first eight steps in **Creating a Player** are complete. Make sure the **Mode** is set to **Record Only**.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. From the **Record Format** drop-down box, select the media format to use. Choose between **I-Frame**, **Long GOP**, **IMX**, or a preset format. The following preset formats can be used to create clips, which can be edited by non-linear edit software on your own computer. Make sure to select the correct wrapper type required by your non-linear edit software.

   Preset formats include:

   - **HDV 720**. This format automatically enters a bitrate of **19** Mbps and a chroma of **4:2:0**.
   - **XDCAM EX for NLE**. This format automatically enters a bitrate of **35** Mbps and a chroma of **4:2:0**.
   - **XDCAM HD for NLE**. This format allows you to select between bitrates of **18**, **25**, **35**, and **50** Mbps. For 18, 25, and 35 Mbps, a chroma of **4:2:0** is automatically entered. For **50** Mbps, a chroma of **4:2:2** is entered.

   The available formats vary depending on the the selected Mode, Frame Rate, and Configuration.
4. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

   MPEG HD tracks can be recorded by the following MediaDeck Modules:

   - MediaDeck Module 5321

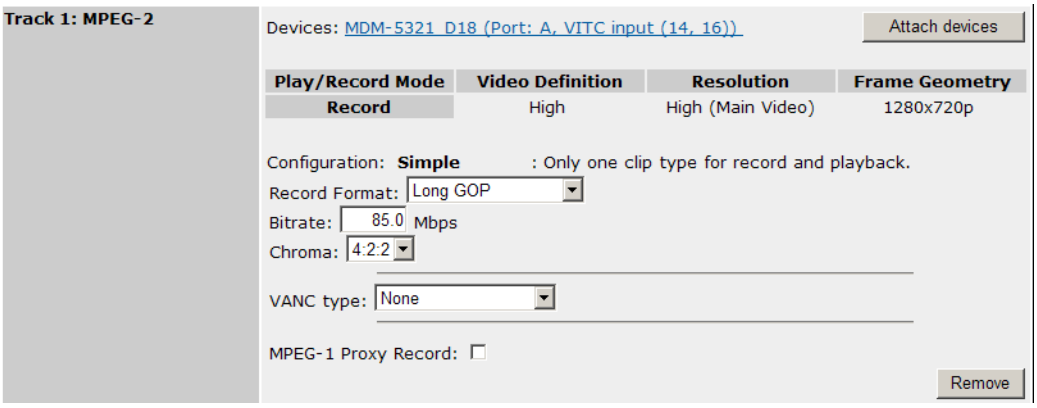


Figure 45. Creating an MPEG HD Record Only Player

5. If the video definition of the track is Standard or both High and Standard, the **VBI Type** drop-down menu will appear. If you want to preserve or play back preserve VBI data, select either **Internal**, **Omneon VBI Data**, or **SMPTE 436M Track** (options will vary based on wrapper format).

For clips created with non-Omneon equipment, Omneon recommends that you select **Internal** or **SMPTE 436M Track**.

NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series with playout.

Using the eight drop-down VBI line selection boxes, select the lines that you wish to record. A minimum of one line must be selected.

Note that the VBI line selection only affects recording. When clips are played back, all VBI lines that were previously recorded will be inserted into the outgoing signal.

6. If you want to preserve or playback VANC data, from the **VANC Type** drop-down menu, select **Internal** or **SMPTE 436M Track**.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5400, and 5500 series with playout.

   In the **Maximal number of bytes of VANC data per frame** field, enter the desired value. For more information on VANC, refer to "About Omneon's VANC Implementation" in the *Omneon SystemManager User's Guide*.

   NOTE: VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5320, 5400, and 5500 series. Adjusting the number of bytes for other MediaDeck Modules is not supported.

   NOTE: Depending on the attached MediaDeck Module, the option for **MPEG-1 Proxy Record** may be available. For information on recording proxies, see **Recording Proxies**.

7. As required, add a video track in MPEG format, or continue by adding an audio track. Note the following point regarding audio tracks:

   NOTE: AES3 elementary streams must comply with SMPTE 302M (one Packetized Elementary Stream (PES) packet per frame, one 302 header per PES packet).

   Refer to **Adding Audio Tracks** for general instructions on selecting audio tracks.

About Recording and Playing Back XDCAM HD Clips

You can record XDCAM HD compatible clips by using the MediaDeck Module 5321. These MediaDeck Modules have a multirate MPEG-2 HD encoder that can encode video at the following ranges: I-Frame at 50-100 Mbps and Long-GOP at 18-85 Mbps. They can support either the 4:2:0 (main) or 4:2:2 (studio) compression profiles. Refer to **Creating an XDCAM HD or XDCAM EX Player** for set up instructions.

To create an XDCAM HD player, which is RDD9 compliant (making it interoperable with Sony HDCAM-HD devices), follow the instructions in **Creating an XDCAM HD-RDD9 Player**.

Creating an XDCAM HD or XDCAM EX Player

To create an XDCAM HD or XDCAM EX player:

1. Ensure that the first eight steps in **Creating a Player** are complete. Make sure the **Mode** is set to either **Record Only** or **Play or Record**.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. From the **Record Format** drop-down box, select the media format to use. Choose between **XDCAM HD for NLE**, or **XDCAM EX for NLE**. The following preset formats can be used to create clips, which can be edited by non-linear edit software on your own computer. Make sure to select the correct wrapper type required by your non-linear edit software.
   - **XDCAM EX for NLE**. This format automatically enters a bitrate of **35** Mbps and a chroma of **4:2:0**.
   - **XDCAM HD for NLE**.
     - If you have selected a frame rate of 25 or 29.97, then you can select between bitrates of **18**, **25**, **35**, or **50**. Bitrates of 18, 25, and 35 enter a chroma of **4:2:0**. Bitrate of 50 enters a chroma of 4:2:2.
     - If you have selected a frame rate of 50 or 59.94, then this format automatically enters a bitrate of **50** and a chroma of **4:2:2**.

   NOTE: The available formats vary depending on the selected Mode, Frame Rate, and Configuration.
4. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions. XDCAM HD tracks may be connected to the following MediaDeck Modules:
   - MediaDeck Module 5321
5. In the **Configuration** drop-down menu, select either **Simple** or **Advanced**:
   - The **Simple** configuration in **Figure 46** allows you to design an MPEG Player that records and plays back only a *single type* of MPEG clip.

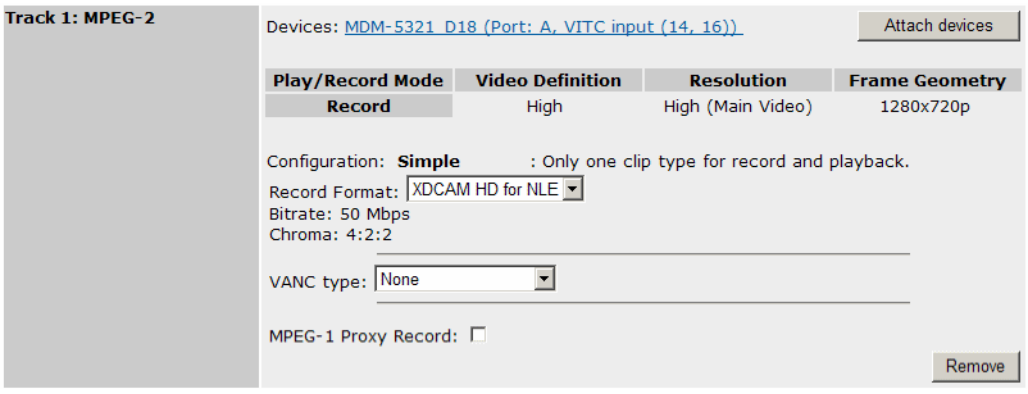


Figure 46. Creating an XDCAM HD Player—Simple Configuration

Clip type is selected using the **Format** or **Record Format** field. The bitrate for both the encoded and the decoded clip must be the same.

- The Advanced configuration in **Figure 47** allows you to design an MPEG Player that records and plays back *different types* of MPEG and DV clips.

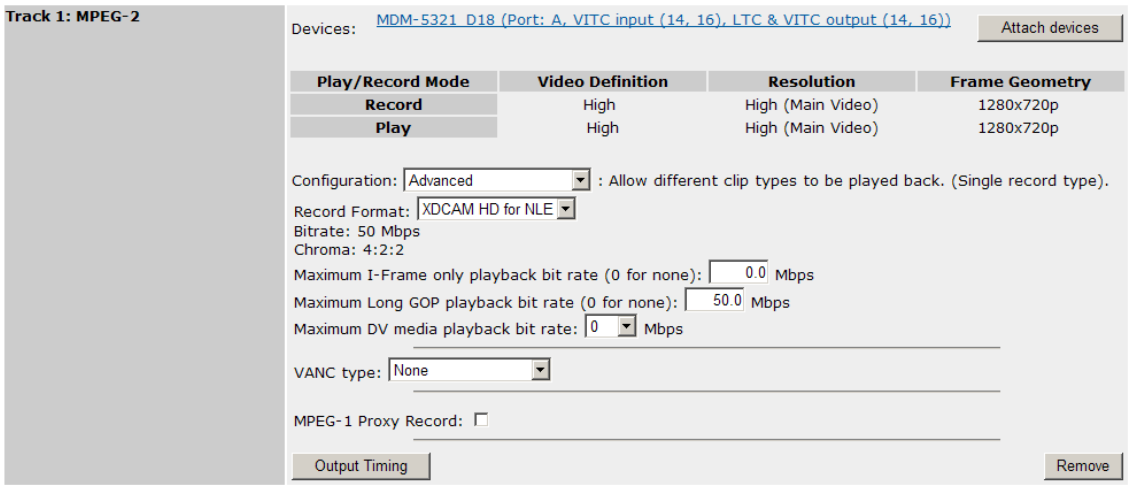


Figure 47. Creating an XDCAM Player—Advanced Configuration

The encoded clip type is selected using the **Record Format** field, and the decoded clip types are selected using two **Playback Bitrate** fields; one for **I-Frame** only clips and one for **Long GOP** clips. With this configuration, you can play back clips that were encoded at different bitrates. However, by supporting different playback bitrates, the Player utilizes a larger IEEE 1394 bandwidth.

IMPORTANT: The Advanced configuration screen changes, based on the selected Player mode: If "Play and Record" is selected, both the Record Bitrate and Playback Bitrate fields appear. If "Record Only" is selected, only the Record Bitrate field appears. If "Play Only" is selected, only the Playback Bitrate fields appear.

6. Depending on the configuration selected, proceed as follows:

- If you selected **Simple**, enter a valid bitrate for the selected format. Note that your options may vary depending on previous selections. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**.
- If you selected **Advanced**, your entries now depend on the Player mode:
  - **Play and Record** mode:
    - In the **Maximum I-Frame playback bitrate...** field, leave the value as 0.
    - In the **Maximum Long GOP playback bitrate...** field, enter a valid bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.
    - In the **Maximum DV media playback bitrate...** drop-down menu, leave the value as 0.
  - **Record Only** mode:
    - In the **Record Format** and **Bitrate** fields, make sure the required format and bitrate for that format is entered. See step 3.

7. Select the required **Chroma** setting. Choose from **4:2:2** or **4:2:0**. In most cases, this setting will be automatically entered.

8. If you want to preserve or playback VANC data, from the **VANC Type** drop-down menu, select **Internal** or **SMPTE 436M Track**.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series with playout.

   In the **Maximal number of bytes of VANC data per frame** field, enter the desired value. For more information about VANC, refer to "About Omneon's VANC Implementation" in the *Omneon SystemManager User's Guide*.

   NOTE: VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5321 only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

   NOTE: Depending on the attached MediaDeck Module and the MediaDeck Module settings, an option for **MPEG-1 Proxy Record** (for 'Record Only' or 'Play and Record' players) may be available. For information about recording proxies, see **Recording Proxies**.

9. As required, add an additional video track of the same or different format.

   or:

   Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Creating an XDCAM HD-RDD9 Player

To create an RDD9 compliant XDCAM HD player (interoperable with Sony XDCAM-HD devices), follow the instructions in this section.

XDCAM HD-RDD9 Player Restrictions

Note the following restrictions with XDCAM HD-RDD9 players.

- This player is only available in a simple configuration, meaning it will record and play back only a single type of MPEG-2 clip.
- This player type only allows one MPEG-2 video track. Once the MPEG-2 video track appears, buttons for all other video tracks are grayed out.
- The only available audio file type is .wav.
- Audio channels are recorded with 1 channel per file
- If the bit rate for the video is 18, 25, or 35 Mbps, then the record sample size for the audio track is set to 16 bps. If the bit rate for the video is 50 Mbps, then the record sample size for the audio track is set to 24 bps.

To create an XDCAM HD-RDD9 player:

1. Ensure that the first eight steps in **Creating a Player** are complete.
   - Make sure the **Mode** is set to either **Record Only** or **Play or Record**.

2. From the **Media Wrapper Format** drop down menu, select **MXF OP1a (Internal, XDCAM HD-RDD9)**. This automatically adds an MPEG-2 video track and a .wav audio track.

3. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions. XDCAM HD-RDD9 tracks may be connected to the following MediaDeck Modules:

   - MediaDeck Module 5321

   Figure 48 shows an XDCAM HD-RDD9 player.

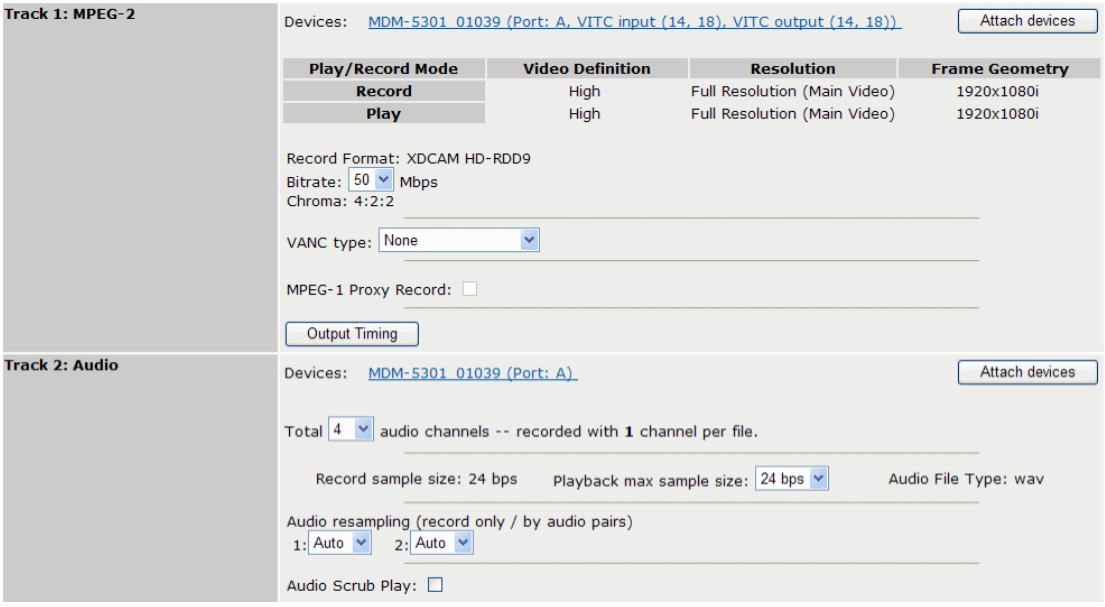


Figure 48. Creating an XDCAM HD-RDD9 player

NOTE: To play Final Cut Pro-exported XDCAM-HD 422 50 Mb clips and record clips editable by Final Cut Pro, Omneon recommends that you create two separate players using the Simple configuration: one player for record set at 50 Mbps, and another player for play out, with the bit rate set high enough to account for any variances in the exported file (60 Mbps or above).

4. If it is not already specified, in the **Bitrate** drop down box, specify the required bitrate.

   The **Chroma** is determined automatically by the bit rate setting. A bit rate of 18, 25, and 35 Mbps results in chroma: 4:2:0. A bit rate of 50 Mbps results in chroma: 4:2:2.

5. If you want to preserve or playback VANC data, select an option from the **VANC Type** drop-down menu. Depending on your wrapper format, you may select **Internal** or **SMPTE 436M** Track.

   NOTE: SMPTE 436M is only available for MXF clips, and is only supported on the MediaDeck Module 5320, 5220, 5400, and 5500 series with playout.

   In the **Number of VANC data** field, enter the desired bytes per frame value. For more information about VANC, refer to “About Omneon’s VANC Implementation” in the *Omneon SystemManager User’s Guide*.

   NOTE: VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5321 series only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

NOTE: Depending on the attached MediaDeck Module and the MediaDeck Module settings, an option for **MPEG-1 Proxy Record** (for 'Record Only' or 'Play and Record' players) may be available. For information about recording proxies, see **Recording Proxies**.

6. As required, add an additional audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks. For information on restrictions for audio tracks on XDCAM HD-RDD9 players., refer to **XDCAM HD-RDD9 Player Restrictions** in this section.

Creating an HDV 720 Player

To create an HDV 720 Player:

1. Ensure that the first eight steps in **Creating a Player** are complete. Note the following:
   - Make sure the **Mode** is set to either **Record Only** or **Play or Record**.
   - Make sure the **Frame Rate** is set to either **50** or **59.94**.
2. Click **MPEG-2** to add an MPEG video track to the Player.
3. From the **Record Format** drop-down box, select the **HDV 720** format. This preset format automatically enters a bitrate of **19 Mbps** and a chroma of **4:2:0**.
4. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions. XDCAM HD tracks may be connected to the following MediaDeck Modules:
   - MediaDeck Module 5321
5. In the **Configuration** drop-down menu, select either **Simple** or **Advanced**:
   - The **Simple** configuration in **Figure 49** allows you to design an MPEG Player that records and plays back only a *single type* of MPEG clip.

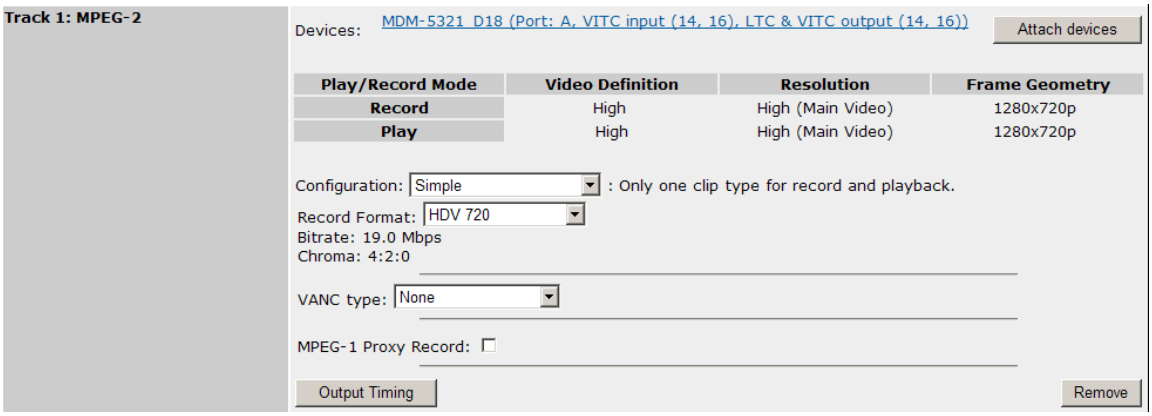


Figure 49. Creating an HDV 720 Player—Simple Configuration

Clip type is selected using the **Format** or **Record Format** field. The bitrate for both the encoded and the decoded clip must be the same.

- The **Advanced** configuration in **Figure 50** allows you to design an MPEG Player that records and plays back *different types* of MPEG and DV clips.

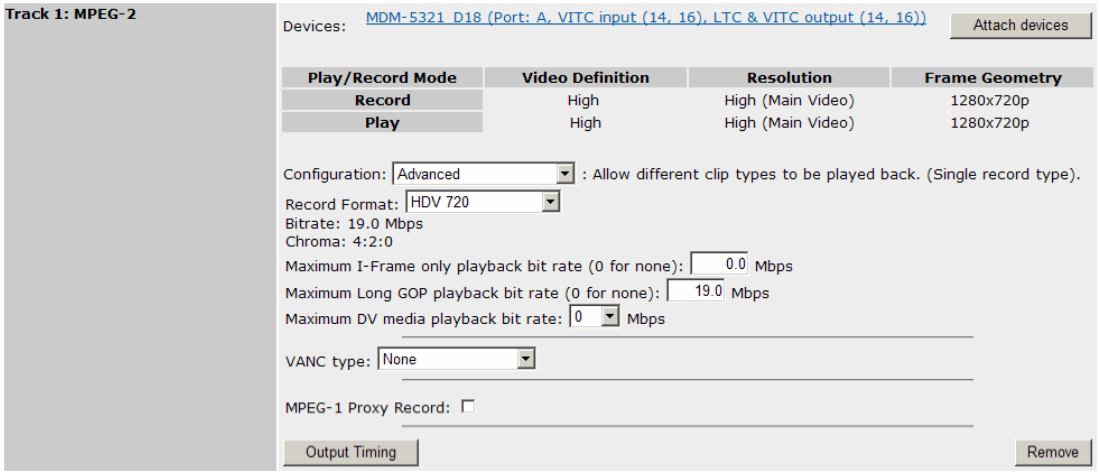


Figure 50. Creating an HDV 720 Player—Advanced Configuration

The encoded clip type is selected using the **Format** or **Record Format** field, and the decoded clip types are selected using two **Playback Bitrate** fields; one for **I-Frame** only clips and one for **Long GOP** clips. With this configuration, you can play back clips that were encoded at different bitrates. However, by supporting different playback bitrates, the Player utilizes a larger IEEE 1394 bandwidth.

IMPORTANT: The available fields in the Advanced configuration change according to the selected Player mode: If “Play and Record” is selected, both the Record Bitrate and Playback Bitrate fields appear. If “Record Only” is selected, only the Record Bitrate field appears. If “Play Only” is selected, only the Playback Bitrate fields appear.

6. Depending on the configuration selected, proceed as follows:

7. If you selected **Simple**, continue to step 8.

   - If you selected **Advanced**, your entries now depend on the Player mode:

     - **Play or Record** mode:

       - In the **Maximum I-Frame only playback bitrate...** field, enter a valid bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.

       - In the **Maximum Long GOP playback bitrate...** field, enter a valid bitrate. For a description of valid bitrates for your MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. Clips with bitrates below the entered value can also be played.

       - In the **Maximum DV media playback Bitrate...** field, leave the value as None.

     - **Record Only** mode. Make sure **HDV 720** is selected (see step 3) and continue to the next step.

8. If you want to preserve or playback VANC data, select an option from the **VANC Type** drop-down menu. Depending on your wrapper format, you may select **Internal**.

   In the **Maximal number of bytes of VANC data per frame** field, enter the desired value. For more information about VANC, refer to "About Omneon's VANC Implementation" in the *Omneon SystemManager User's Guide*.

   NOTE: VANC capture adjustments (number of bytes) can be controlled for the MediaDeck Module 5321 only. Adjusting the number of bytes for other MediaDeck Modules is not supported.

9. As required, add an additional video track of the same or different format.

   NOTE: From release 4.3, support is provided for Players which have two attached video tracks of the same format (MPEG 25 I-Frame).

   or:

   Continue by adding an audio track. Refer to **Adding Audio Tracks** for instructions on selecting audio tracks.

Recording Proxies

A proxy is a low-resolution version of recorded video content. The MediaDeck Module 5320 and 5220 series allow you to record proxies to your MediaDeck system. For each of the MediaDeck Module 5320, and 5220 series, you can have two channels configured and enabled to record proxies.

In order to configure a player to record proxies, the attached MediaDeck Module must first be set for Proxy mode. Once the MediaDeck Module and attached player is configured to record proxies, when the player records, it will simultaneously write a proxy file to the **proxy.dir** directory located in the main clip directory, which is **clip.dir** by default. Proxy files will retain the same base name as the source clip and use the extension **.mpg**.

Note that in order to enable the proxy feature, any players configured for audio scrub must be deactivated due to bandwidth constraints. Perform the following procedures in the order listed below.

Configuring your MediaDeck Module to Record Proxies

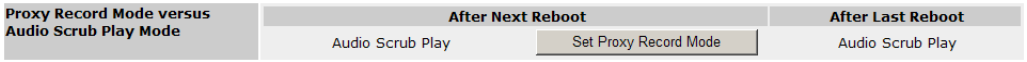
To configure your MediaDeck Module to record proxies:

1. From the **System Diagram** page, click the icon for the MediaDeck Module you will use to record proxies. Its **MediaDeck Module Properties** page appears.
2. Under **General Information**, scroll to the **Proxy Record Mode versus Audio Scrub Play Mode** section.

   This section will show either **Proxy Record** mode enabled or **Audio Scrub** mode enabled. They cannot both be enabled at the same time. If the status under **After Next Reboot** and **After Last Reboot** shows **Proxy Record** then continue to **Configuring a Player to Record Proxies**.

   If the status shows **Audio Scrub Play** then do the following:

a. Click **Set Proxy Record Mode**.



A warning message appears indicating that all players attached to this MediaDeck Module which are configured for Scrub Audio must be deactivated before you record proxies, otherwise their performance will be affected. Click **OK**.

b. If you have players that are configured for Audio Scrub, deactivate those players at this time. Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling**.

c. Restart the MediaDeck in order for the changes to take affect. Refer to **Rebooting the Omneon MediaDeck**.

d. Continue to **Configuring a Player to Record Proxies**.

Configuring a Player to Record Proxies

To configure a player to record proxies:

1. Follow the first 9 steps in **Creating a Player** to create an **MPEG Record Only** player or **Play and Record** player **(**SD or HD).

2. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions. The following MediaDeck Modules support proxies: MediaDeck Module 5320 and 5220 series.

   NOTE: When attaching the MediaDeck Module 5320 or 5220 series, you may select either Channel A or Channel B as the Connection Port.

3. Follow the instructions to add an audio track. Refer to **Adding Audio Tracks**. Once you have added an audio track, the check box for **MPEG-1 Proxy Record** will be enabled (see **Figure 51**).

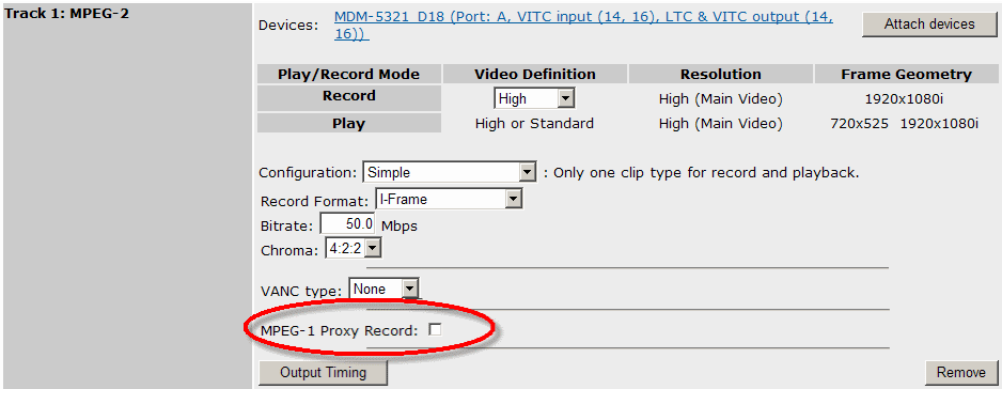


Figure 51. MPEG-1 Proxy Record check box

4. Select the **MPEG-1 Proxy Record** check box.

   An MPEG-1 track, identified as a **Low Resolution Proxy**, will appear below the audio track (see **Figure 52**).

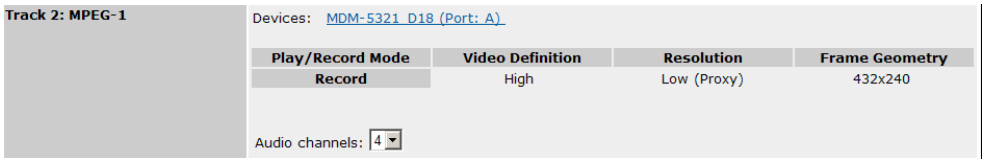


Figure 52. Low Resolution Proxy

By default, the proxy track shows the same number of audio channels as the audio track for this player. This number can be changed but may not exceed 8 channels.

5. Activate the player. Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling**.

   When used to record, this player will simultaneously write a proxy file to the **proxy.dir** directory located in the main clip directory, which is **clip.dir** by default. Proxy files will retain the same base name as the source clip and use the extension **.mpg**.

Adding Audio Tracks

Audio tracks can be added to any Player (except Data Players), in addition to the default "interleaved" audio tracks that are present only in DV, DVCPRO and DVCPRO 50 Players. These tracks can be recorded in **.aiff** or **.wav** format. Note the following important points regarding interleaved audio:

- DV and DVCPRO video files (**.dv**) by default include 2 channels of interleaved audio.
- DVCPRO 50 video files (**.dv**) by default include four channels of interleaved audio.

Refer to **About AES/EBU Audio and Interleaved Audio** for additional information.

- HDCAM (**.hdcam**) video files do not include interleaved audio.
- MPEG (**.mpg**) video files do not contain interleaved audio. When an MediaDeck Module 5001 is used, you can select audio from either AES/EBU inputs or the audio embedded within the SDI input stream. This selection is performed on the **Attach Devices** page. An MPEG Player requires a separate audio track in either case.

Use **Figure 53** for reference during the procedure.

Figure 53. Configuring an Audio Track

To add a separate audio track to a Player:

1. On the **Edit Player** page, click the **Audio** button to add an audio track.
2. Connect the Audio track to a MediaPort. Refer to **Attaching Devices and Setting Conversion Options** for instructions.
3. In the **Total** drop-down box, choose the total number of audio channels that you wish to record in the *entire* track.
4. In the **Recorded with** drop-down box, choose the number of audio channels that you wish to record in each file. Select between 1, 2, 4, 6 or 8 channels per file. Note that not all choices are available, depending upon your selection in the **Total** drop-down box.

   Refer to **About Audio Track Combinations** for additional information on what possibilities are offered in these settings.
5. In the **Sample size** drop-down box, choose between 16-bit or 24-bit samples.

   The sample size variable only applies to the data recorded in the audio files on the Omneon server. It does not apply to the audio data ingested or played out of the Omneon MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for details on controlling the Omneon MediaDeck Module's audio I/O format.
6. In the **Audio File Type** drop-down box, choose between **.aiff** or **.wav** formats. Select the appropriate file type, based on your individual requirements. There is no difference in performance between the two file types.
7. The **Number of Language Tag Rules** field appears if you have enabled **Player Track Tagging** from the SystemManager **Options** page. This field allows you to apply language tag rules for the playout of audio files associated with the audio tracks of a particular Player. For information about adding, editing, or copying track tags, refer to the "MediaDirector Basic Configuration" chapter in the *Omneon SystemManager User's Guide*.
8. The **Audio Resampling** section appears in all players attached to a MediaDeck Module. The number of drop-down boxes changes dynamically, depending upon your selection in the **Total** drop-down box.

   For each audio pair:

   - Choose **Auto** to record normal PCM audio data, or correctly flagged non-PCM data (e.g., Dolby AC-3, Dolby E). Normal PCM audio data will be re-sampled so that it is clock-synchronized with video. Non-PCM data will be passed unchanged.
   - Choose **None** to force audio resampling **off**. Use this selection if your playback equipment does not properly tag non-PCM data.
9. If you added an audio track by mistake, click the **Remove** button adjacent to the track.

   This concludes the Audio Format section of the Player creation process. Continue to **Attaching Devices and Setting Conversion Options**. Refer to **About Selectable Audio Tracks** and **About Audio Track Combinations** for additional important audio track information.

   NOTE: An advanced feature is available that allows you to configure a single Player with multiple audio tracks. In this configuration, each audio track is associated with its own individual MediaDeck Module. Refer to "Creating Multiple Audio Track Players" in the *Omneon SystemManager User's Guide* for details.

NOTE: Spectrum cannot record audio simultaneously from multiple MediaPorts into a MPEG-2 MXF OP1a track at 29.97/59.94 Hz. When recording this wrapper format format and frame rate, all audio must come from a single MediaPort. This limitation does not apply to other wrapper formats or frames rates.

About Selectable Audio Tracks

Note the following important points regarding separate audio tracks:

- All separate audio files associated with a single audio track must have the same number of channels, sample size and file format.
- When recording Dolby E or Dolby AC3, do not configure the Player's audio track as single-channel files. All channels must be recorded with a minimum of two channels per file. If you record as a single-channel file, the Dolby data will be corrupted.
- Each separate audio file may hold 1, 2, 4, 6, or 8 channels.
- Players must be configured to match the maximum expected bandwidth of clips to be played on that output. If a clip exceeds the maximum expected bandwidth, during playback the Player will fail — producing either silence or a reduced number of audio tracks limited by the Player.
- Back-to-back playout of mixed audio formats (**.aiff** or **.wav**) is supported.

About Audio Track Combinations

Following is a list of all possible file combinations that may be created:

- 1, 2, 3 or 4 mono or stereo files
- 1 or 2 four-channel files
- 1 six-channel file
- 1 eight-channel file

NOTE: While recording supports creating files of 1, 2, 4, 6, or 8 channels the choices are constrained by a) a maximum of 4 files allowed per audio track, and b) the number of channels per file must evenly divide into the total number of audio tracks enabled. For example: If 6 or 8 channels are selected, the choice for 1 channel files does not appear, since that would mean creating 6 or 8 files (greater than the limit of 4). If 6 channels are selected, the choice for 4 channels does not appear, since 4 does not evenly divide into 6.

Configuring Audio Scrub

Audio scrub mode provides a higher quality audio output, helpful to video editors and operators when jogging or shuttling through content. Audio scrub mode is supported on the MediaDeck Module 5501, 5321, and 5221 series.

The audio scrub feature works for up to four channels of audio. When scrub mode is enabled, regardless of how the audio tracks are grouped, the first four channels are scrubbed and the remaining channels are muted.

In order to configure a player with audio scrub, the attached MediaDeck Module must first be set for Audio Scrub Mode. Note that in order to enable the Audio Scrub feature, any players configured for

Proxy Record must first be deactivated due to bandwidth constraints. The two modes cannot be configured at the same time.

Perform the following procedures in the order listed below.

Configuring your MediaDeck Module for Audio Scrub

NOTE: If you are using the MediaDeck Module 5401 or 5501, continue to **Configuring a Player for Audio Scrub**.

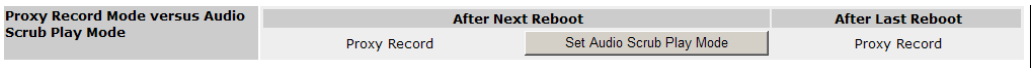
To configure your MediaDeck Module for Audio Scrub:

1. From the **System Diagram** page, click the icon for the MediaDeck Module you will use to play audio scrub material. Its **MediaDeck Module Properties** page appears.
2. Under **General Information**, scroll to the **Proxy Record Mode versus Audio Scrub Play Mode** section.

   This section will show either **Proxy Record** mode enabled or **Audio Scrub** mode enabled. They cannot both be enabled at the same time. If the status under **After Last Reboot** and **After Next Reboot** shows **Audio Scrub Play Mode** then continue to **Configuring a Player for Audio Scrub**.

   If the status shows **Proxy Record** then do the following:

   a. Click **Set Audio Scrub Play Mode**.



   A warning message appears indicating that all players attached to this MediaDeck Module which are configured for Proxy Record must be deactivated before you activate players configured for Audio Scrub, otherwise their performance will be affected. Click **OK**.

   b. If you have players that are configured for Proxy Record, deactivate those players at this time. Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling**.

   c. Restart the MediaDeck Module in order for the changes to take affect. Refer to **Rebooting the Omneon MediaDeck**.

   d. Continue to **Configuring a Player for Audio Scrub**.

Configuring a Player for Audio Scrub

To configure a player for Audio Scrub:

1. Follow the first 9 steps in **Creating a Player** to create an **MPEG Play Only** or **Play and Record** player **(**SD or HD).
2. Connect the track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions. The following MediaDeck Modules support audio scrub: MediaDeck Module 5320, 5220, 5400, and 5500 series.
3. Follow the steps in **Adding Audio Tracks** to add an audio track.

4. Attach the audio track to the appropriate MediaDeck Module. Refer to **Attaching Devices and Setting Conversion Options** for instructions.

5. The audio track includes the **Audio Scrub Play** check box (see **Figure 54**).

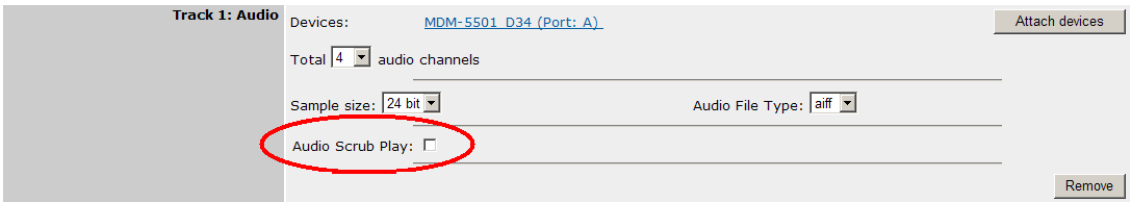


Figure 54. Audio Scrub Play check box

6. Click the **Audio Scrub Play** check box.

NOTE: If the check box for Audio Scrub Play does not appear, double-check that you have followed the steps in **Configuring your MediaDeck Module for Audio Scrub**.

7. Activate the player. Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling**.

About Audio Scrub Rates and Behavior

Once a player has been enabled for audio scrub, the output audio is scrubbed whenever the player is operating between 1/16th and 2x play, forward or backward. Those regions are shown in green in **Figure 55**.

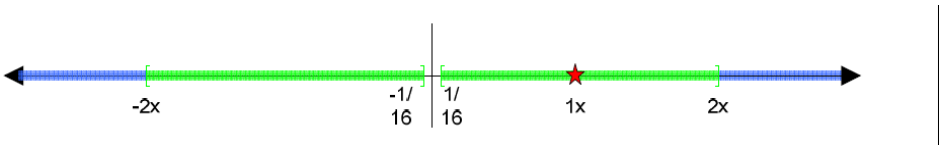


Figure 55. Audio Scrub Rates

Above 2x forward or below -2x backward, the player reverts to “CD audio”, which is the same off-speed audio behavior used for non-audio scrub players. Those regions are shown in blue. Below 1/16th (for example, at 1/32nd), the player is muted rather than reverting to CD audio.

The red star in **Figure 55** marks the special case of normal, 1x playback. If the player jumps directly to 1x from a non-scrubbable rate (such as paused or greater than 2x), it will leave scrub mode and revert to normal audio play with all channels.

Attaching Devices and Setting Conversion Options

NOTE: This section includes important information for setting up conversion or down conversion options.

To connect a Player to a device:

1. Ensure that the first 9 steps in **Creating a Player** are complete.
2. For each track, click the **Attach Devices** button (within each track section) to display the **Attach Devices** page as shown in **Figure 56**.

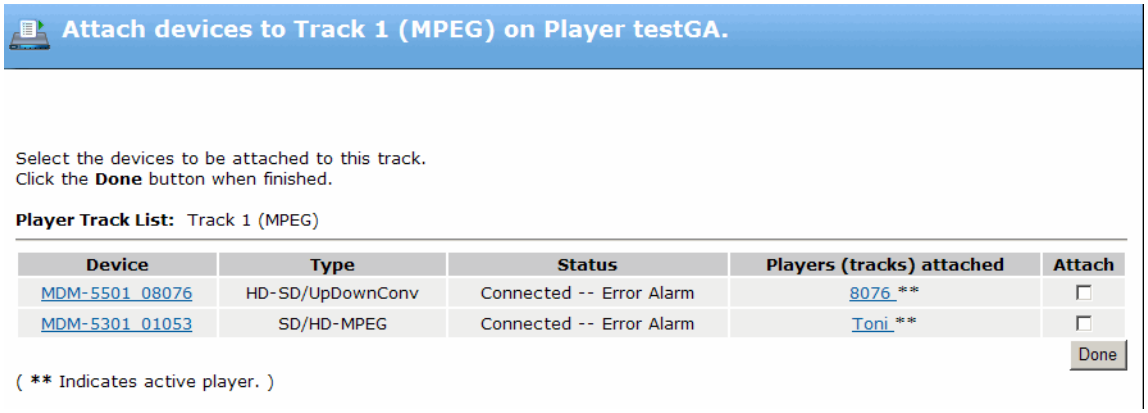


Figure 56. Attaching Devices

3. In the **Attach** column, click the check box adjacent to the device (**MediaDeck** or **Third Party Device**) that you wish to connect. The name of the current Player will appear in the **All players attached to this device** column. Repeat this selection for any other listed devices that you want to attach to this track.
4. The **Channel** column displays the available channels for attaching MPEG tracks. Click the drop-down arrow to select a different channel from the default.
5. If you are working with a record-capable Player, in the **Recording Device** column**,** click the radio button for the *one device* (MediaDeck Module or Third Party Device) that you want to use as the source of media during recording.
6. When attaching video tracks to the MediaDeck Module 5320 series for recording HD content at frame rates of 25 or 29.97 Hz, the **Horizontal Sample Rate** column appears. Select the sample rate (either **1920** or **1440**) that applies to the content you are recording.

   NOTE: The information in Step 7applies only to the MediaDeck Module 5500 or 5400 series. For all other MediDeck Modules, continue to step 8.

7. (For the MediaDeck Module 5500 and 5400 series MediaDeck Modules only) Make the following selectios for Up Conversion or Down Conversion:

a. (For MediaDeck Module 5501 only) In the **Video Output Format** column, select the desired output format for your video content. Refer to **Figure 57**.

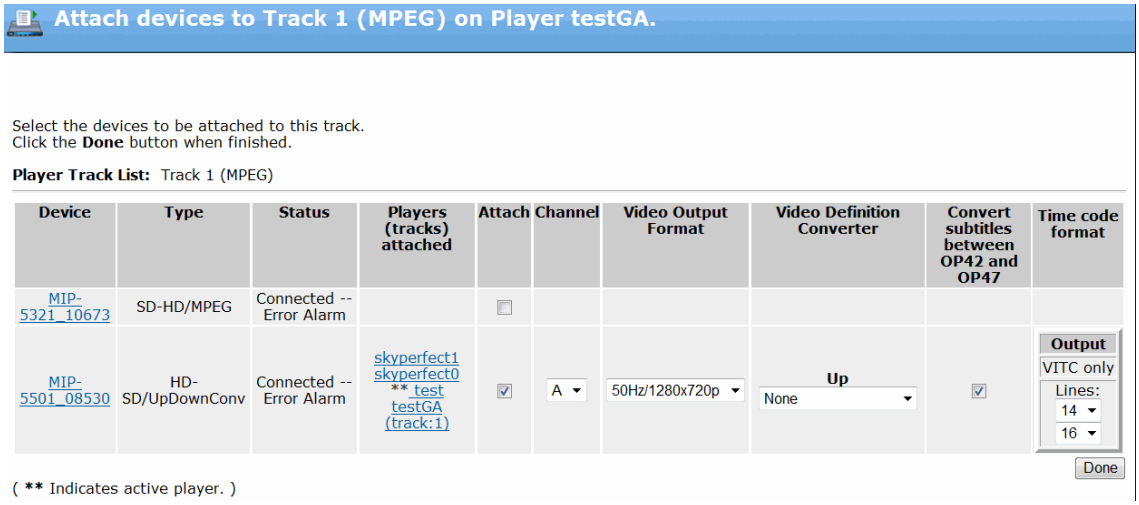


Figure 57. Up/Down Conversion options

b. In the **Video Definition Converter** column, select the appropriate up and down conversion option by reviewing the following information.

- **Up**: This menu displays aspect ratio adjustment options when frames are being up converted from SD to HD. Click the drop-down arrow to select from the following:
  - **None:** Specifies that no up conversion adjustment should take place.
  - **Internal, Pillar:** Specifies that black bars should be inserted on the sides as necessary to fill the screen.
  - **Internal, Crop:** Specifies that the top and bottom of frames should be cropped and black bars should be inserted on the sides as necessary to fill the screen. When a frame is too large horizontally, the sides of the frame should be cropped and black bars inserted on the top and bottom to fill the screen.
  - **Internal, Full:** Specifies that black bars should be inserted above and below the frame to maintain the aspect ratio of the original source (usually a picture of 16:9 aspect ratio or wider).
  - **Internal, Anamorphic:** Specifies that frames should be stretched horizontally and vertically to fill an entire 16:9 aspect ratio HD screen.
- **Down**: This column displays aspect ratio adjustment options when frames are being down converted from HD to SD. Click the drop-down arrow to select from the following:
  - **None:** Specifies that no down conversion aspect ratio adjustment should take place.
  - **Internal, Crop:** Specifies that the top and bottom of the frame should be cropped and black bars should be inserted on the sides as necessary to fill the screen. When a frame is too large horizontally, the sides of the frame are cropped and black bars are inserted on the top and bottom to fill the screen.

- **Internal, Letter:** Specifies that when a frame fails to fill a screen vertically, black bars should be inserted above and below the frame to maintain the original aspect ratio of the original source (usually a picture of 16:9 aspect ratio or wider).
- **Internal, Full:** Specifies that black bars should be inserted above and below the frame to maintain the aspect ratio of the original source (usually a picture of 16:9 aspect ratio or wider).
- **Internal, Anamorphic:** Specifies that frames should be compressed horizontally and vertically to fit into a 4:3 aspect ratio SD screens.

Refer to **Figure 58** and **Figure 59** for a visual representation of frame output for each of the aspect ratio options.

c. The **Convert subtitles between OP42 and OP47** checkbox allows you to convert subtitles or teletext that use the OP42 and OP47 standards. If you wish to convert subtitles or teletext that use these standards, click this checkbox.

8. If you are working with an audio track and the device is capable of embedding and de-embedding audio in the SDI signal, a drop-down box will appear in the **Audio Embedding** column. Note that this column only appears for AES/EBU tracks, or for all DV tracks without an accompanying AES/EBU track.

   Choose the desired embedding option:

   - **None** — Audio information is transmitted and received on the MediaDeck Module's AES/EBU connectors only.
     - For recording, audio will not be de-embedded from the SDI input signal. It will instead be recorded from the AES/EBU connectors.
     - For playback, audio will not be embedded in the SDI output signal. It will instead be played out from the AES/EBU connectors.
   - **Embedded** — The MediaDeck Module uses audio data that is embedded in the SDI signal for recording and playback.
     - For recording, audio will be de-embedded from the SDI input signal. Any signal on the AES/EBU connectors will be ignored.
     - For playback, all eight audio channels (at full 24-bit resolution) will be embedded in the SDI output signal.
   - **Limited** — The following actions occur:
     - For recording, all audio data will be de-embedded from the SDI input signal. Signals on the AES/EBU connectors will be ignored.
     - For playback, the MediaDeck Module only embeds two pairs of audio channels (at 20-bit resolution) into the SDI output signal.

9. If the Player is record capable, the Player's **Default Record Timecode Source** is "**External**," and the recording device is capable of recording LTC timecode, in the time code **Input Drop-down Box**, select either **LTC only** or **VITC only**.

   - Select "**LTC only**" to accept LTC input over the MediaDeck Module's LTC input connector.

- Select "**VITC only**" and the desired Line number to read VITC from the MediaDeck Module's SDI input connector.

10. If the Player is play capable, the Player's **Default Play Timecode Source** is "**External**," select either **LTC only** or **VITC & LTC**.
    - Select "**LTC only**" to output LTC only to the MediaDeck Module's LTC output connector.
    - Select **VITC & LTC** and the desired Line number to insert time code into those lines on the MediaDeck Module's SDI output connector.

      NOTE: For the MediaDeck Module 5321, and 5221, the output timecode options that you select on the **Attach Devices** page apply to the channel that you have selected in the **Assignable LTC Output** field of the **MediaDeck Module Properties** page for the attached MediaDeck Module. Refer **Viewing Omneon MediaDeck Properties**, for a description of the **Assignable LTC Output** field.

11. Click **Done** to return to the **Edit Player** page. At this point, the Player's selected track is connected to the selected Device(s). The device(s) will be listed in the track section.
12. Repeat the entire connection procedure starting with **Step 2**, for each additional track that you wish to connect.

About Up Conversion or Down Conversion Options

To perform Up Conversion or Down Conversion, follow the steps provided in **Attaching Devices and Setting Conversion Options**. Note that for some video content, which contains AFD information, the aspect ratio conversion options are contained within the clip. For more information about AFD support, refer to **About AFD Support** in the *Omneon SystemManager User's Guide*. The following diagrams illustrate the frame output for up or down conversion.

Figure 58 displays frame output associated with each Up Conversion Aspect Ratio option.

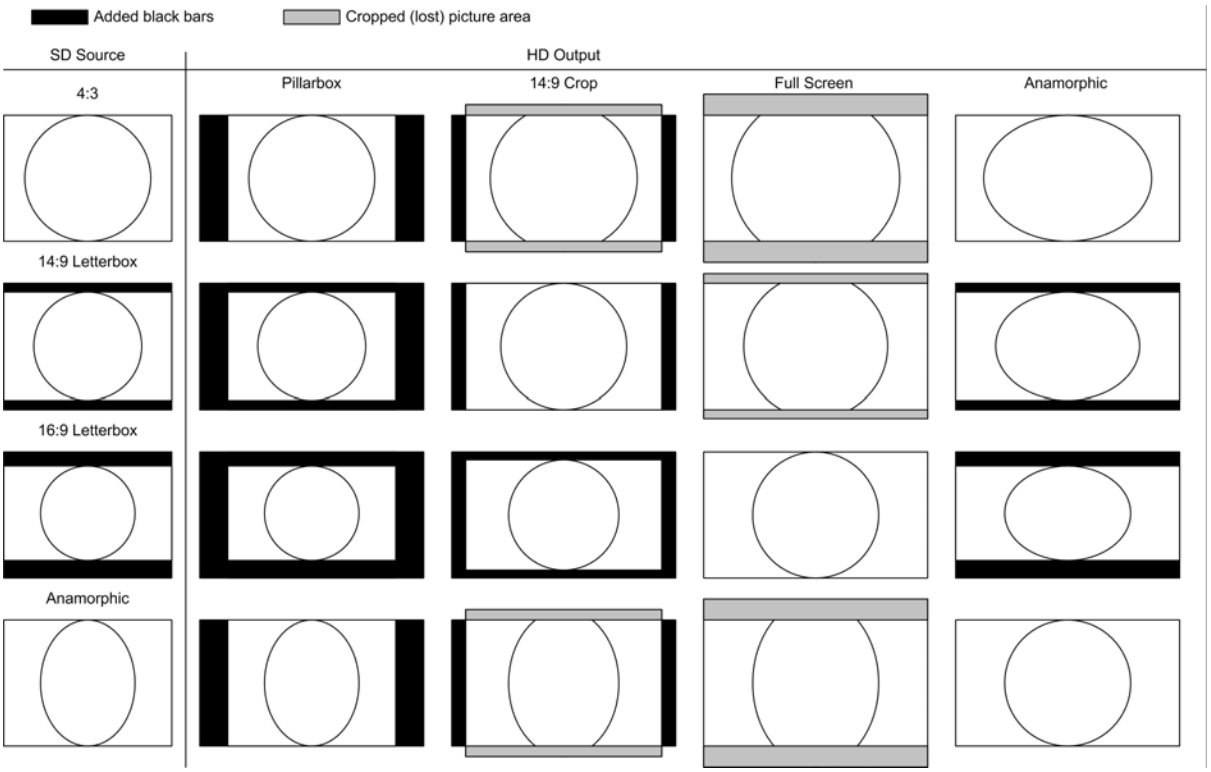


Figure 58. High Definition Up Conversion Aspect Ratio Results

Figure 59 displays frame output associated with each Down Conversion Aspect Ratio option:

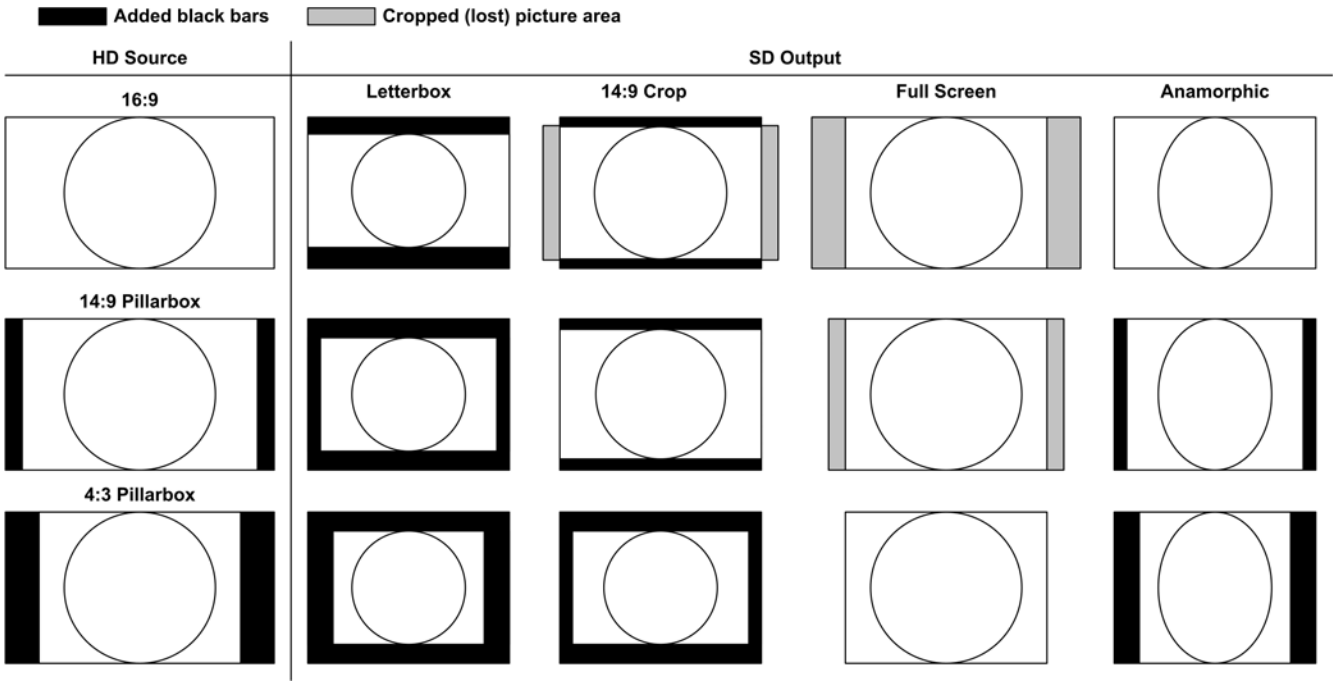


Figure 59. High Definition Down Conversion Aspect Ratio Results

Player to Player Dubbing

To dub from one player to another using the Player-to-Player Dubbing feature:

1. From the **Player List** page, ensure that the player you wish to use as your Source player is shown as **Inactive**, and that the player you wish to use as your Target player is also shown as **Inactive**.
2. Click the **Edit** link for the Source player to open the **Edit Player** page. Then scroll to the bottom of the page to locate the **Player-to-Player Dubbing Configuration** section, as shown in **Figure 60**.

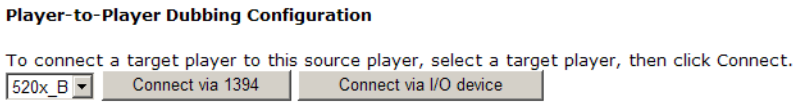


Figure 60. Connecting to a Target Player

3. Using the drop-down box, select the Target player. Then, depending on your system configuration, click either **Connect via 1394** or **Connect via I/O device**.
4. Activate the Source player by clicking the **Activate** button at the bottom of the Edit Player page. This will also activate the Target player.

   The **Player Properties** page for both the active Source and Target players will display a message indicating the Source and Target players, inlcuding a hyperlink to each player (see **Figure 61**).

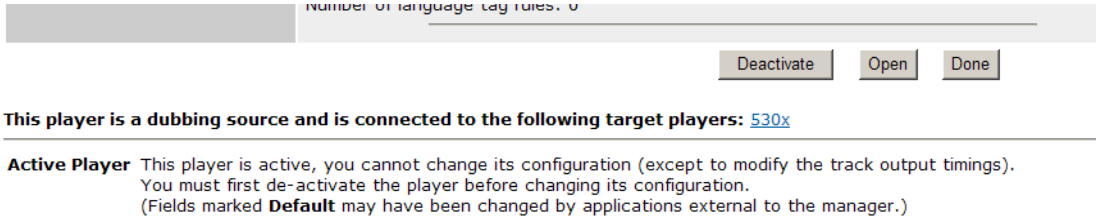


Figure 61. Player-to-Player Dubbing Status Message

The **Player List** page will also indicate which player is a Source and Target.

Disconnecting Devices

To disconnect devices from tracks on a Player:

1. To disconnect devices, ensure that the Player is deactivated first.

   Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling** for instructions.
2. On the **Edit Player** screen, locate the track that you want to disconnect, and click the **Attach Devices** button to display the **Attach Devices** screen.

3. On the **Attach Devices** screen, clear the box in the **Attach Device** column for the device(s) that you want to disconnect. Note that you can disconnect one device and leave others connected.
4. Click **Done** to return to the **Edit Player** screen.
5. Repeat steps 2 and 3 for other tracks that you wish to disconnect.
6. Click **Done** to return to the **Player List**.

Changing the Player State: Activating and Deactivating, Enabling and Disabling

In previous releases of SystemManager, activating a player allowed you to use that player for playing or recording, and only one player could be activated per MediaPort channel at a time. With release 5.19, in order to use a player to play or record, you must activate it and enable it as well using the **Activate and Enable** button on the Edit Player page or the **Enable** button or link on the Player List page.

With this functionality, and the latest release of Spectrum, you can activate multiple players per MediaPort channel at a time, allowing an automation system to switch between players and enable or disable a player as needed.

Note the following important points:

- An activated player can be either enabled or disabled. You may have several players activated per MediaPort channel at a time but ONLY ONE can be enabled.
- A player must be activated and enabled in order to play or record. A disabled player cannot be used.
- This release includes an **Activate as disabled** button on the Edit Player page, which sends the player definition to the Spectrum device but does not enable the player. This may be useful if you are using an automation system to automatically enable different players at different times.
- If a player state has been changed by some means other than SystemManager (for example by automation or by using the player API), SystemManager will not detect that change until you click on the **Refresh Player List** button on the Player List page.

Activating and Deactivating Players

Use one of the following methods to activate or deactivate a player:

- To activate from the **Player List** page, click the **Enable** hyperlink for the desired Player, or select multiple Players and click the **Enable Selected** button. This activates and enables the selected player(s). If the Player cannot be activated, an **Error Message** appears that details the reasons.

  NOTE: Only one player can be activated and enabled per MediaPort channel at a time.

- To activate from the **Edit Player** page, click **Activate and Enable** or **Activate as disabled** at the bottom of the page.

  Clicking **Activate as disabled** sends the player definition to the Spectrum device. This may be useful if you are using an automation system to automatically enable different players at different times.

- To deactivate a Player from the **Player List** page, click the **Deactivate** hyperlink for the desired Player, or select multiple Players and click the **Deactivate Selected** button.
- To deactivate a Player from the **Edit Player** page, click the **Deactivate** button at the bottom of the page.

Enbling and Disabling Players

Use one of the following methods to enable or disable a player:

- To enable a player from the **Player List** page, click the **Enable** hyperlink for the desired Player, or select multiple Players and click the **Enable Selected** button. This activates and enables the selected player(s). If the Player cannot be enabled, an **Error Message** appears that details the reasons.

  NOTE: Only one player can be activated and enabled per MediaPort channel at a time.

- To enable a player from the **Edit Player** page, click **Activate and Enable** at the bottom of the page.
- To disable a Player from the **Player List** page, click the **Disable** hyperlink for the desired Player, or select multiple Players and click the **Disable Selected** button.
- To disable a Player from the **Edit Player** page, click the **Disable** button at the bottom of the page.

Deleting Players

To delete a Player:

1. On the **Player List**, ensure that the Player to be deleted have been deactivated.

   Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling** for instructions.

2. Once deactivated, click the **Delete Hyperlink** for the desired Player, or select multiple Players and click **Delete Selected**. A warning dialog appears.
3. Click **OK** to delete the Player(s).

Editing a Player

To edit (or modify) a Player that has already been created:

1. On the **Player List**, ensure that the Player that you wish to edit has been deactivated.

   Refer to **Changing the Player State: Activating and Deactivating, Enabling and Disabling** for instructions.

2. Click the **Edit Hyperlink** to display the **Edit Player** screen.
3. Follow the procedures beginning with step 7 in **Creating a Player**.

Additional Player Information

For additional information on player configuration, refer to the “Player Configuration” section in the *Omneon SystemManager User’s Guide*. Additional topics include:

- Viewing Player Properties
- Adjusting Output Timing
- Creating Multiple Audio Track Players
- Moving Players
- Viewing a Player’s Settings and Attached Devices
- Allowing Players to be Enabled or Disabled by Automation
- About the Player Utility
- About Omneon’s VANC Implementation
- About AFD Support
- About Omneon Timecode Behavior
- About “Cue-to-Timecode” with VDCP Control

CHAPTER 4
Installing and Using ClipTool™

This section provides installation and operation instructions for the Windows version of ClipTool™. Choose from the following:

- **ClipTool Installation**
- **ClipTool Operation**

ClipTool Installation

Choose from the following topics:

- **About Choosing ClipTool for your Application**
- **Windows ClipTool Installation**

About Choosing ClipTool for your Application

Windows ClipTool is recommended for:

- PCs in which ClipTool is frequently launched from the SystemManager application (faster loading).
- Installations where **Clip Dubbing** is performed using ClipTool.

Windows ClipTool Installation

Use the following steps to install (or re-install) the Windows ClipTool on a PC running Windows 95 (or later). The PC must be a Pentium II (or better) with a minimum 32MB RAM and a minimum 2MB hard disk space available. The PC must be connected via Ethernet to your facility's LAN.

To install Windows ClipTool:

1. Uninstall the existing ClipTool application if it is already installed. This allows you to update to the latest ClipTool version.
   - Click **Start > Settings > Control Panel**. In the **Control Panel** dialog box double click the **Add/Remove Programs** icon.
   - In the **Add/Remove Programs** dialog box:
     - Click **Change or Remove Programs** in the left-hand left-hand column.

- Select **ClipTool** in the **Installed Programs** column and click **Change /Remove**.

- Remove all instances of the ClipTool shortcut from the desktop.

2. Log on to the Omneon SystemManager application.
3. Click the **Home** tab to display the **Options** page.
4. Click the **Tool Installation** icon to display the **Tool Installation** page.

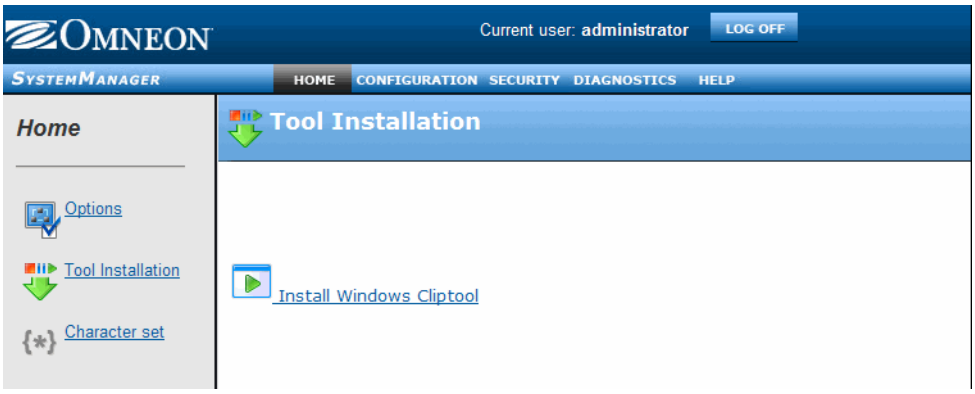


Figure 62. Installing Windows ClipTool

5. If this pop-up message appears:

   "C:\\Temp\Temporary Internet Files\Content IE_5\XXXX\CTInstall[1].exe."

   Clear Internet Explorer's temporary files cache on the SystemManager Platform as follows:

   - Go to the **Internet Explorer Tools** tab and click **Internet Options**.
   - In the **Internet Options Window**, click the **General** tab.
   - In the **Temporary Internet Files** section, click the **Delete Files** button.
   - In the **Delete Files Window**, check the box to **Delete All Offline Content**, then click **OK**.
   - Retry the ClipTool installation from step 4.

6. Click **Install Windows ClipTool** to display the **File Download** dialog box.

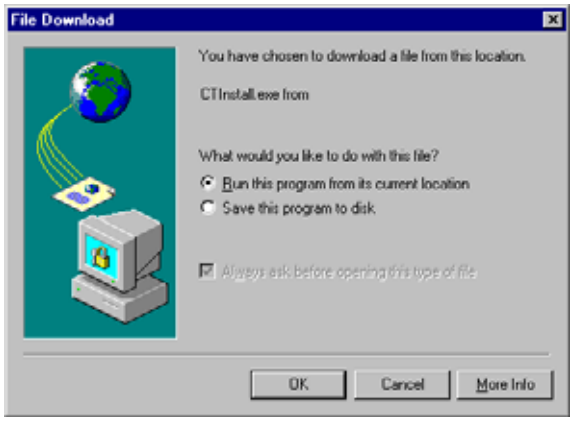


Figure 63. File Download

Ensure that **Run the program from its current location** is selected.

7. Click **OK** to display the **Security Warning** dialog box.

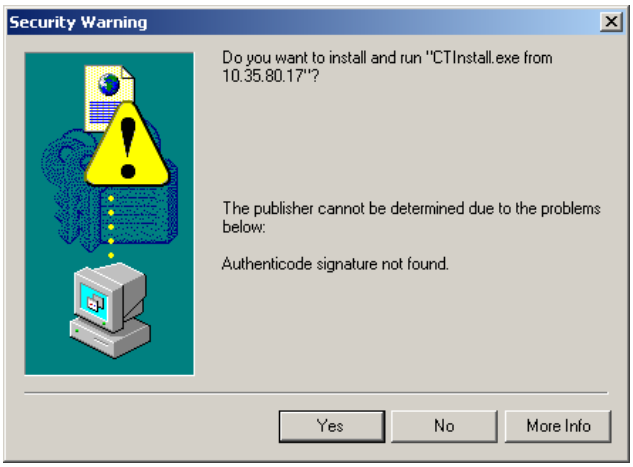


Figure 64. Security Warning

8. Click **Yes** to display the **Welcome** dialog box.
9. Click **Next** to display the **Choose Destination Location** dialog box. Leave the default destination directory as it is (recommended) or click **Browse** and select a different destination.

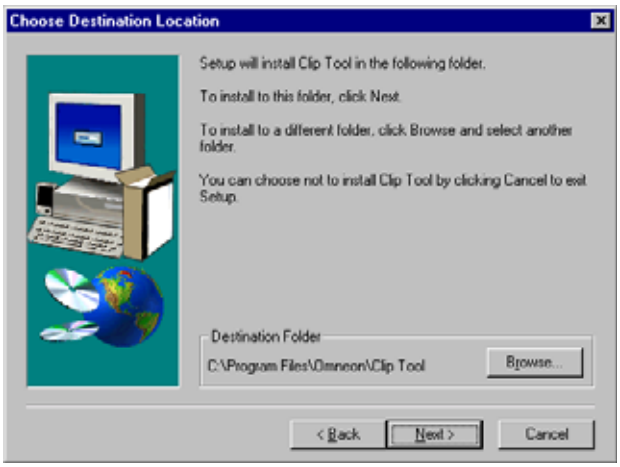


Figure 65. Choose Destination Location

10. Click **Next** to display the **Select Program Folder** dialog box. Leave the default folder **Omneon Clip Tool** as it is (recommended) or choose a different folder.

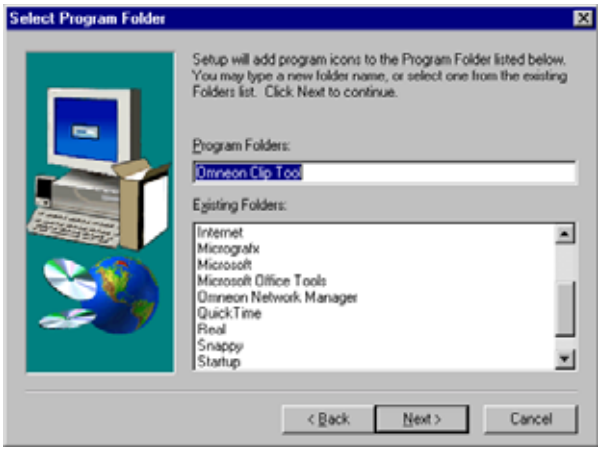


Figure 66. Select Program Folder

11. Click **Next** to begin copying files.
12. When copying has completed, click **OK** in the **Information** dialog box.
13. In the **ClipTool Profiles** dialog box (which remains open on your desktop), copy the ClipTool shortcut to the desktop using the standard copy/paste method.

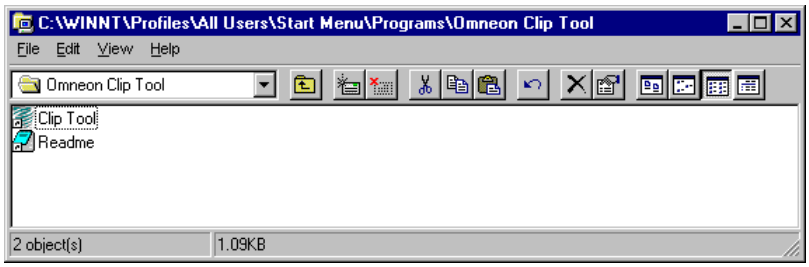


Figure 67. Copying the ClipTool Shortcut

This completes the Windows ClipTool installation procedure.

14. Click **Done** to complete the procedure. Note that shortcuts have been installed as follows:

    For Windows PCs:

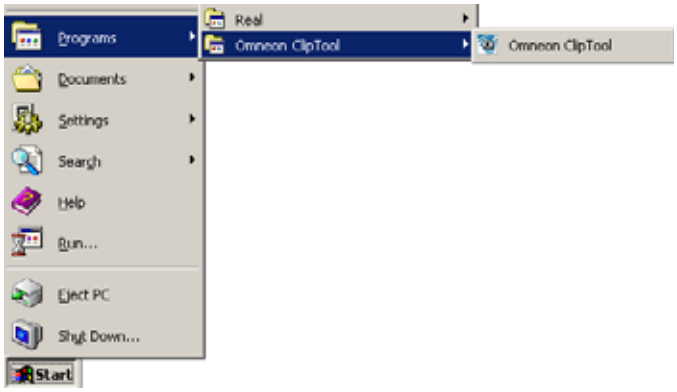


Figure 68. ClipTool Shortcut

ClipTool Operation

Choose from the following topics:

- **Using Windows ClipTool**
- **About Clip Dubbing and Clip Dubbing Restrictions**

Using Windows ClipTool

Choose from the following topics:

- **About Windows ClipTool**
- **Launching Windows ClipTool**
- **Customizing a ClipTool Shortcut**
- **About Windows ClipTool Main Window**

- **About Windows ClipTool Clip Status Area**
- **About Windows ClipTool Menus**
- **About Windows ClipTool Editing Area**
- **About Windows ClipTool Transport Controls**
- **About Windows ClipTool Clip Management Area**
- **Loading Clips for Playback**
- **Deleting Clips**
- **Recording Clips**
- **About Playout while Recording**
- **About Windows ClipTool Keyboard Shortcuts**

NOTE: The following terms are interchangeable within SystemManager:

- **MediaDeck information is sometimes displayed as MediaDirector information.**
- **MediaDeck Module information is sometimes displayed as MediaPort information.**
- **MediaDeck Storage information is sometimes displayed as MediaStore information.**

About Windows ClipTool

The Windows ClipTool is a software component that provides a graphical user interface to monitor and control Players. You can install and launch Windows ClipTool on any computer that has TCP/IP connectivity to the SystemManager and Omneon MediaDeck. The Windows ClipTool can monitor any Player's operation, and manually control the Players through a VTR-like control panel.

The ClipTool window provides four basic categories of clip control:

- **Transport Control Functions** (such as Play, Stop, Record, and Shuttle)
- **Clip Management Functions** (such as Create Clip, Delete Clip and View Clip List)
- **Display Functions** (such as displaying frame count and Player status)
- **Editing Functions** (such as Mark In, Mark Out and Clear Marks)

Players do not need to have ClipTools running for them to work. (Automation systems can control Players, for example.) If you exit from the Windows ClipTool or start a new one, it does *not* affect the Player; only explicit actions do.

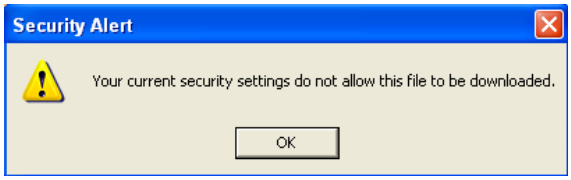
NOTE: The Windows ClipTool application has been pre-installed on the SystemManager platform. However, remember that Windows ClipTool can be installed on any PC that is connected to the Omneon MediaDeck and SystemManager via TCP/IP. Refer to **About Windows ClipTool Keyboard Shortcuts** for installation instructions.

Launching Windows ClipTool

Windows ClipTool must be assigned to a specific Omneon MediaDeck host and a specific Player. You can run multiple ClipTools simultaneously on a PC, but a new ClipTool window is required for each Player.

Keep the following important points in mind:

- If you launch ClipTool by clicking the **Open** hyperlink from the **Player List page** (in the SystemManager application), the **MediaDirector/Player** dialog box is bypassed. This occurs because on the **Player List**, you are, by default, selecting a valid Player that is *already* attached to an Omneon MediaDeck.
- If this is the *first time* that you click the **Open hyperlink**, you will see a dialog box *similar* to the installation dialog box. Choose the **Open this file from this location** button, uncheck the **Always Ask** checkbox, and click **OK**. This procedure will not need to be repeated again.
- If you attempt to open ClipTool by clicking the **Open** hyperlink from the **Player List** page, and the following error appears, then security settings in your browser may be preventing ClipTool from being launched.



1. Click **OK**, and then re-open SystemManager by typing the **local IP address** for your SystemManager in the address bar of your browser.
2. Log in to SystemManager.
3. From SystemManager, open the **Player List**, and then click the **Open** hyperlink.

To launch Windows ClipTool:

1. Ensure that Windows ClipTool is properly installed.

   Refer to **ClipTool Installation** for installation instructions.
2. Ensure that audio and video sources (and monitors) are connected to each Omneon MediaDeck Module.
3. Launch Windows ClipTool by clicking **Start > Programs > Omneon Clip Tool > Clip Tool**. When no Omneon MediaDeck is specified, or when the specified Omneon MediaDeck cannot be contacted, the **MediaDirector/Player** dialog box appears.

Figure 69. MediaDirector/Player Dialog Box

When the Omneon MediaDeck host is known, the **MediaDirector Name** field is filled in, the Players on that Omneon MediaDeck host are automatically listed and the focus is set to the **Available Players** box.

4. In the **MediaDirector Name** field, type the current name, DNS name or IP address of the desired Omneon MediaDeck host. To check an Omneon MediaDeck host's *current* name, click the **Configuration** tab in the SystemManager application. The name appears beside the small Omneon MediaDeck icon.

   NOTE: Your system can have multiple Omneon MediaDecks. The ClipTool must be associated with an Omneon MediaDeck host before it can be linked to a Player on that host.

5. With the Omneon MediaDeck host name entered, click the **List Players** button (you can also press **Tab** or **Enter**). The label "**Searching**" appears, after which the list of all *active* players for the selected Omneon MediaDeck host appears in the **Available Players** box.

Figure 70. Choosing a MediaDeck Host and Player

If only one active Player exists, it is selected automatically and the dialog box closes (as if **OK** had been pressed).

6. With multiple Players listed, highlight a Player in the list and click **OK** (or press **Enter**). Arrow keys move the highlight from one Player to the next.

   NOTE: If required, click **Cancel** (or press **Esc**) to cancel the selection of an Omneon MediaDeck and Player, and close the ClipTool application.

   Once an Omneon MediaDeck host and Player have been selected, the dialog box closes and the main ClipTool window appears. Refer to **About Windows ClipTool Main Window** to continue.

Customizing a ClipTool Shortcut

This procedure allows you to place a convenient ClipTool icon (shortcut) on the desktop which when clicked, loads ClipTool *and* calls a specific Player and Omneon MediaDeck host. This method bypasses the **MediaDirector/Player** dialog box.

To customize a ClipTool shortcut:

1. Ensure that Windows ClipTool is properly installed.

   Refer to **ClipTool Installation** for installation instructions.

2. Run Windows "**Notepad**" application (**Start > Programs > Accessories > Notepad**).

3. Type the name (or IP address) of the target Omneon MediaDeck host and Player on a single line, separated by a colon. For example:

   ```
   DIR01046:Sun_Play
   ```

4. On the Notepad **Menu Bar**, click **File > Save As** to display the **Save As** dialog.

5. In the **Save As** dialog box, click the **Desktop** icon in the left-hand column.

6. In the **File Name** field, type a name for this ClipTool's shortcut, followed by the ".player" extension. For example:

   ```
   Sun_Play.player
   ```

7. Click **Save**. This places a ClipTool shortcut on the desktop.

8. Close Notepad by clicking the **X**, or by clicking **File > Exit**.

   When the shortcut is double-clicked, a ClipTool opens with the specified Omneon MediaDeck host and Player. To edit the shortcut, right-click it on the desktop, then click **Open With > Notepad**. This launches the Notepad application and allows you to change the shortcut's attributes.

   NOTE: When using non-English character sets, you should save the file as UTF-8.

   The previous procedure uses the default clip directory, as set in the SystemManager on the **Edit Player** page (in the **Default Clip Directory** field). If you want to override the default clip directory in the ClipTool shortcut, and enter a different "specific" clip directory, add the directory's name to the ".player" file (as created above in step 3). For example:

   ```
   DIR01046:Sun_Play/fs1/news.dir
   ```

   This shortcut, when placed on the desktop, opens the Player "**Sun_Play**" on Omneon MediaDeck **DIR01046**, and specifically selects the "**news.dir**" directory on the "**fs1**" file system, for use with all new and previous clips.

About Windows ClipTool Main Window

Figure 71 illustrates two sample Windows ClipTool **Main Windows** — one with the playlist hidden and the other with the playlist visible.

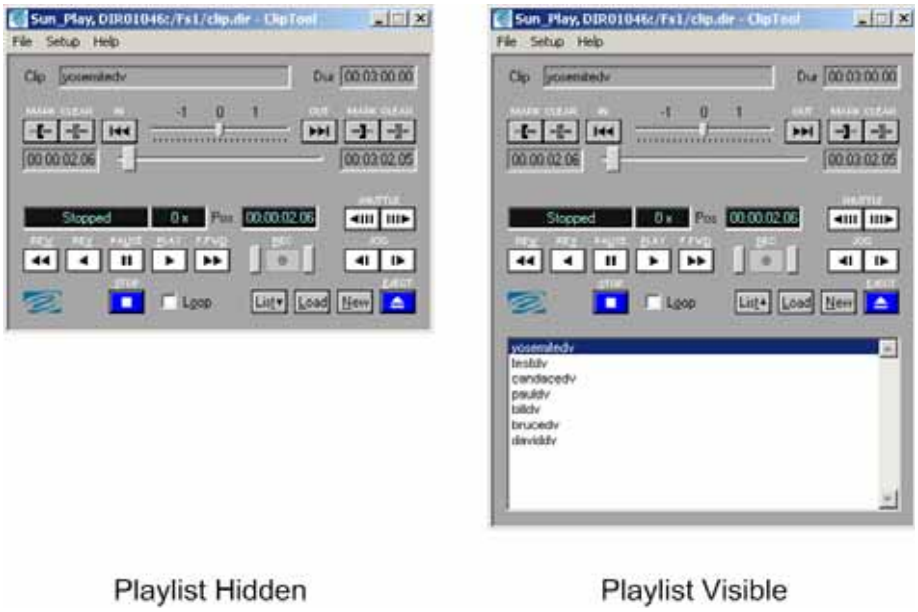


Figure 71. ClipTool Main Window

The Windows ClipTool **Main Window** is a control panel that cannot be resized. The only exception is that by clicking the **List** button, the **Clip List Window** is alternately shown or hidden. The **Clip List Window** contains *this* Player's playlist, with the current active clip highlighted (selected).

Within the **Main Window**, VTR-style controls are labeled for clarity, and all controls have pop-up tooltips. The tooltips describe the control's function, and list any keyboard shortcuts that are *not* already indicated by the GUI. For example, if you place your mouse over the **Stop** button, **Alt+S** is not shown as a pop-up "tooltip." This occurs because the underlined **S** in the **Stop** button's label indicates that pressing **Alt+S** is the keyboard shortcut for the **Stop** button. The tooltip **Shift+Space** is shown because the GUI does not provide this label.

Several fields in the **Main Window** are *time* fields (**Duration**, **In-point**, **Out-point**, and **Position**). They display time either as raw frame counts or as timecode — depending on a user setting.

ClipTool is arranged into four different groups of controls and displays. From top to bottom, these are the **Clip Status Area**, the **Editing Area**, the **Transport Controls**, and the **Clip Management Area**.

About Windows ClipTool Clip Status Area

Figure 72 illustrates a sample **Clip Status Area**.

Figure 72. Clip Status Area

The **Clip Status** area is provided for information, allowing the user to obtain quick status on the current Player, Omneon MediaDeck and Clip. The following areas are included:

- **Title Bar** — Lists the Player name, the selected Omneon MediaDeck and the current directory from which clips will be loaded, and the application name (ClipTool). The directory is also the one in which new clips will be saved.
- **Menu Bar** — Provides three menus for ClipTool functions: **File, Setup**, **Help**.

  Refer to **About Windows ClipTool Menus** for details.
- **Clip Name** — This field lists the name of the currently active clip.
- **Duration —** This field shows the specified duration of the current clip. Note:
  - When recording a clip, the **Duration** is the limiting length for the clip, as specified when the clip was created — it is not the current amount on disk.
  - When a recording is stopped, the **Duration** is adjusted to be equal to the amount recorded.
  - When playing back a recorded clip, this field shows the **Duration** between the clip's in-point and out-point — if any have been set.

    This readout is affected by the **Timecode** and **Frame Count** selections in the **Setup** menu. Refer to **About Windows ClipTool Menus** for details on the **Setup** menu.

NOTE: ClipTool synthesizes non-drop frame timecode from the frame numbers that are embedded in a clip. Timecode always starts at 00:00:00:00. ClipTool does not read the actual timecode in the clip itself unless that information is carried by the first and last recorded frame counts in a clip's information structure.

About Windows ClipTool Menus

This section discusses the three **Menu Bar** headings and their associated functions.

File Menu

Click **File** to display the **File** menu as shown below.

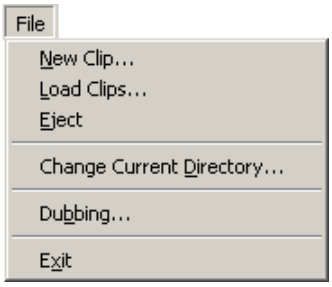


Figure 73. File Menu

- Click **New Clip** to open the **New Clip** dialog box.

  Refer to **Recording Clips** for instructions on recording new clips.

- Click **Load Clips** to open the **Load Clips** dialog box.

  Refer to **Loading Clips for Playback** for instructions on loading clips.

- Click **Eject** to eject all clips in the playlist and place the Player in the **Stopped** mode, showing E-E video.

- Click **Change Current Directory** to display the **Type or Select a Directory** dialog box, a sample of which is shown in **Figure 74**.

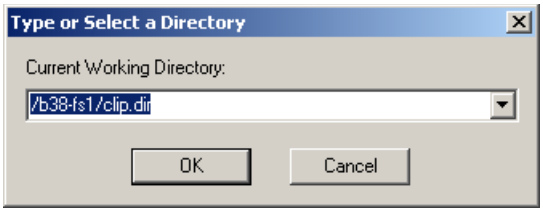


Figure 74. Type or Select a Directory

To change directories, type the desired directory name, or click the drop-down arrow and choose from a list of directories to which you have *already* connected during *this* run of ClipTool. The drop-down box does not retain a list of directories once the ClipTool application is closed.

NOTE: The directory that appears by default depends on the entry in the Default Clip Directory field on the Player's Edit Player **page**.

IMPORTANT: Changing the Player's Clip Directory using ClipTool will not affect the Clip Directory that is used by other ClipTools, nor will it affect the Clip Directory used by control applications (e.g. VDCP, OmniBus, BVW, etc).

- Click **Dubbing** to initiate the clip dubbing procedure, and display the **Choose Recording MediaDirector/Player** dialog box.

  Refer to **About Clip Dubbing and Clip Dubbing Restrictions** for instructions.

- Click **Exit** to exit the Windows ClipTool application.

Setup Menu

Click **Setup** to display the **Setup** menu as shown below.

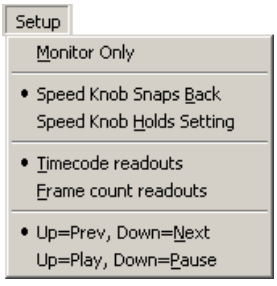


Figure 75. Setup Menu

- Check **Monitor Only** to place the ClipTool in a special mode in which all controls are grayed out. This view-only mode is designed for situations in which you (or others) want to monitor clip activity (such as with an automation system), but also want to prevent accidental clip control. To return to full control, simply uncheck the option.
- Click **Speed Knob Snaps Back** to cause the **Speed Knob** to always snap back to 0 (zero) when it is released.
- Click **Speed Knob Holds Setting** to cause the **Speed Knob** to remain at its current position (and speed) when it is released.

  Refer to **About Windows ClipTool Editing Area** for details on the **Speed Knob**.
- Click **Timecode Readouts** to cause all time-related fields and readouts in the ClipTool to display timecode.
- Click **Frame Count Readouts** to cause all time-related fields and readouts in the ClipTool to display frame counts.
- Click **Up=Prev, Down=Next** to change the behavior of the keyboard's arrow keys:
  - **UP ARROW** — For a single clip in the list, pressing **UP ARROW** jumps to the head of the clip and maintains the current mode (play or pause). For multiple clips, **UP ARROW** jumps to the head of the previous clip in the list and maintains the current mode.
  - **DOWN ARROW** — For single clip in the list, pressing **DOWN ARROW** jumps to the tail of the clip. For multiple clips, **DOWN ARROW** jumps to the head of the next clip in the list and maintains the current mode (play or pause).
- Click **Up=Play, Down=Pause** to change the behavior of the keyboard's ARROW keys:
  - **UP ARROW** — Press to play the current clip in the list.
  - **DOWN ARROW** — Press to pause the current clip in the list.

Help Menu

Click **Help** to display the **Help** menu as follows.

Figure 76. Help Menu

- Click **About ClipTool** to display the **About ClipTool** dialog box, which provides current ClipTool version and copyright information.

About Windows ClipTool Editing Area

Figure 77 illustrates the **Editing Area**.

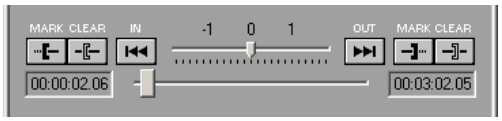


Figure 77. Editing Area

Immediately below the **Clip Status Area**, the **Editing Area** provides tools for marking and trimming clips. On the left-hand side, controls are grouped that affect clip's in-point. On the right-hand side, controls affect clip's out-point. The following controls are included:

- **Mark [In], Mark [Out]** — These two buttons set the clip's in-point and out-point, the starting and ending frames for clip playback. Clicking a **Mark** button sets that point on the clip's current frame. Both the in-point and out-point are *inclusive*; the frames thus marked are the first and last frames to be shown during clip playback.

  NOTE: By contrast, in some editing applications, the out-point is exclusive — that is, the first frame not to be shown. Older linear editors worked this way, but many newer non-linear editors use inclusive out points.

- **Clear [In], Clear [Out]** — Clicking a **Clear** button clears the corresponding marked point. Please note:

  - When no in-point is set, the default in-point is the first frame of the clip and the corresponding **Clear** button is grayed out and disabled.
  - When no out-point is set, the default out-point is the last frame of the clip and the corresponding **Clear** button is grayed out and disabled.
  - The **Time Fields** immediately below the **Mark** and **Clear** buttons show the clip's current in-point and out-point. These fields are affected by the **Timecode** and **Frame Count** selections in the **Setup** menu.

    Refer to **About Windows ClipTool Menus** for details on the **Setup** menu.

- **[Goto] In, Out** — Click a **Goto** button (adjacent to the **Speed Knob**) to jump to the current in-point or out-point, respectively.

- **Speed Knob** — Click and drag the **Speed Knob** to adjust playback speed to any of the following multiples of real time:

  -32, -16, -8, -4, -2, -1, -1/2, -1/4, -1/16, -1/32, 0, 1/32, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8, 16, 32.

- As you click and drag the knob, the **Transport Status** fields update with the new speed. By default, the **Speed Knob** snaps back to zero when released, but it can be set to hold its current setting through the **Setup** menu. The **Speed Knob** also serves as an indicator — it moves to reflect the speed that is set using other ClipTool commands.

  Refer to **About Windows ClipTool Menus** for details on the **Setup** menu.

- **Timeline** — The **Timeline** represents the current "selected area" within the clip — the area between the default (or marked) in-point and out-point. The **Timeline's** handle indicates the point of playback; it moves along its track as the clip progresses. Dragging the handle moves the current clip position. The **Timeline** dynamically adjusts so that the current in-point is always at the left-most limit and the current out-point is at the right-most limit.

About Windows ClipTool Transport Controls

Figure 78 illustrates a sample **Transport Control** area.

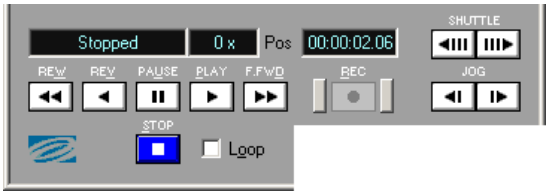


Figure 78. Transport Control Area

ClipTool's transport controls comprise the VTR-style buttons and readouts. Note that most transport controls are grayed-out when no clips are loaded.

The following controls are included:

- **Transport Status** — This readout displays ClipTool's current transport status. Depending upon the current ClipTool mode, the following "status" labels are shown:
  - **Rewind** (-32x to –2x)
  - **Reverse Play** (-1x)
  - **Slow Reverse Play** (-1/2x to -1/32x)
  - **Paused** (0x, still frame shown)
  - **Stopped** (0x, E-E mode)
  - **Slow Forward Play** (1/32x to 1/2x)
  - **Play** (1x)
  - **Fast Forward** (2x to 32x)
  - **RECORDING** (Shown when recording is in progress)
  - **Cued for Record** (Shown when the transport is in the appropriate cued status. This mode is the state set by ClipTool when a new clip is created, allowing recording to commence immediately.)
  - **Cued for Play** (Shown when the transport is in the appropriate cued status. This mode is usually not seen, except when it is set up by another control program, or when ClipTool is preparing to dub the timeline.)
- **Transport Speed** — This readout (to the right of **Transport Status**) shows the current playback speed, from "–32 x" to "32 x."
- **Clip Position —** This readout shows the current frame of the current clip (the frame at the handle's current location). This readout is affected by the **Timecode** and **Frame Count** selections in the **Setup** menu.

  Refer to **About Windows ClipTool Menus** for details on the **Setup** menu.

NOTE: The three readouts (Transport Status, Transport Speed, and Clip Position) display white text on a red background while recording is in progress. The Transport Status field flashes.

- **Shuttle** buttons — ClipTool supports the following transport speeds, as multiples of normal forward play:

  -32, -16, -8, -4, -2, -1, -1/2, -1/4, -1/16, -1/32, 0, 1/32, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8, 16, 32

  - Clicking the left **Shuttle** button changes the Clip's current speed to the next faster *reverse* speed.
  - Clicking the right **Shuttle** button changes the Clip's current speed to the next faster *forward* speed.
  - Clicking a **Shuttle** control while the Player is stopped plays the Clip at –1/32x or 1/32x, respectively.
- **REW** — (Rewind) Plays the clip at –32x.
- **REV** — (Reverse) Plays the clip at –1x.
- **PAUSE** — Plays (pauses) the clip at 0x, presenting a still frame. If no clip is loaded, black is played.
- **PLAY** — Plays the clip at 1x (normal play mode).

IMPORTANT: Clips can only be played back using a Player that has the same configuration as the Player that was originally used for content recording. For example, if a clip was recorded using a DV25 Player, a DV25 "playback" Player must be used to play it out. Note that DV and DVCPRO clips can be played back-to-back because they both use a 25Mbps bitrate.

- **FFWD** — (Fast Forward) Plays the clip at 32x.
- **REC** — (Record) Records a new clip at 1.0x.
- **JOG** buttons — Pauses any playback in progress, and backs up (left **JOG** button) or advances (right **JOG** button) the clip by one frame.
- **STOP** — Stops the playback or recording of a clip, leaving the Player in E-E mode.
- **Loop** — Check the **Loop** checkbox to cause the playlist to restart upon reaching its end, in either direction. In this mode, the clip plays continuously until **Stop** is clicked. Note the Player must be stopped before the Loop mode can be activated.

About Windows ClipTool Clip Management Area

Figure 79 illustrates a sample **Clip Management Area**.

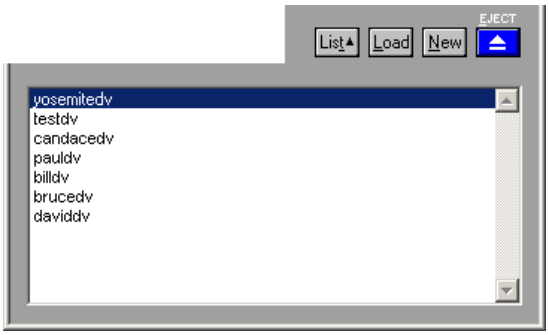


Figure 79. Clip Management Area

The four **Clip Management** buttons allow the user to list clip, load clips, eject clips and create new clips for recording. The following controls are included:

- **List** — Click to alternately show and hide the playlist (within the **Clip List Window**). A small triangle on the button itself points *down* when the playlist is hidden or *up* when the playlist is shown, to indicate the "next window action" when the button is pushed.
- **Load** — Click to open the **Load Clips** dialog box.

  Refer to **Loading Clips for Playback** for instructions on loading clips.
- **New** — Click to open the **New Clip** dialog box.

  Refer to **Recording Clips** for instructions on recording new clips.
- **Eject** — Click to eject all clips in the playlist and place the Player in the **Stopped** mode, showing E-E video.
- **Clip List Window** — This window (when open) shows the clips on the Player's timeline. The current clip is highlighted. You can move the highlight by clicking another clip with the mouse, and change the current clip on the timeline.

Loading Clips for Playback

Click the **Load** button in the **Clip Management Area** (or click **File > Load Clip**) to display the **Load Clips** dialog box, a sample of which is shown in **Figure 80**.

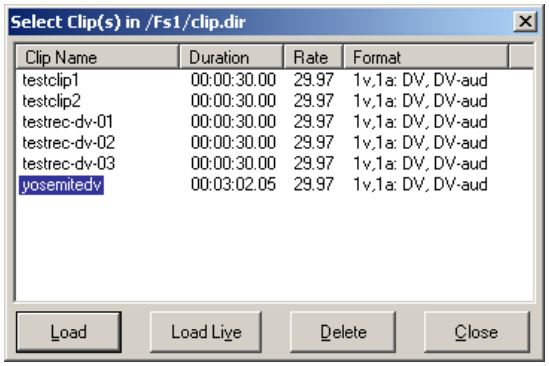


Figure 80. Loading Clips

The **Load Clips** dialog box displays a scrollable, multi-column list of clips in the file system. You can resize the columns by clicking and dragging the boundary between the column headers.

- The **Clip Name** column shows the clip's name.
- The **Duration** column shows the total clip length (regardless of stored in and out-points).
- The **Rate** column shows the clip's frame rate.
- The **Format** column shows how many video and how many separate audio channels are recorded, followed by a list of up to six separate channels' worth of information (such as the selected video format and any associated audio or VBI channels).

The list is arranged in alphabetical order and shows all clips in the current directory (not just the clips that can be loaded in this ClipTool's player). By listing all clips, users can easily see what names have been used (and if desired, what clips they want to delete).

To select clips, several methods are available:

- Use the **Arrow** keys to move the highlight, or simply click the mouse on the desired clip.
- Hold down **Shift** and click to select a continuous range.
- Hold down **Ctrl** and click to select a discontinuous range.

To load the clip(s) in the **Clip List Window**, several methods are available:

- Double-click to enter a single clip.
- **Shift**+double-click to enter a range of clips.
- Press **Enter** to enter a single clip or a range of clips.
- Click the **Load** button to enter a single clip or a range of clips.

NOTE: When multiple clips are selected, they are loaded in alphabetical order. To load clips in a different order, select and load them one at a time. Loading does not close the dialog box.

When clips are loaded, the ClipTool's title bar changes:

- "**<clip name> loaded**" for a single clip
- "**X of Y clips loaded**" for multiple clips (where X is the number of clips successfully attached out of Y total clips selected).

If an error occurs, the clip(s) will not be loaded, and an error message is shown in the Title Bar.

When clips are loaded, all ClipTool buttons are activated except for the **Record** button. The clips can now be played back using the **Transport Controls**.

Additional controls are as follows:

- Click **Load Live** to load a clip with a duration of 24 hours instead of its listed duration. In this manner, a clip that is currently being recorded (a "**live**" clip) can be loaded with an indeterminate out point, allowing it to be played up to (and past) its current length.
- Click **Close** (or press the **Esc** key) to close the dialog box without performing further actions.

Deleting Clips

Use the following steps to delete clips:

IMPORTANT: Use caution when deleting clips. Once deleted, clips are permanently removed from the file system, and cannot be recovered.

1. Click the **Load** button in the **Clip Management Area** to display the **Load Clips** dialog box.
2. In the **Load Clips** dialog box, select the clip(s) that you want to delete. You can select a single clip or a range of clips.
3. Click the **Delete** button. When the **Confirm** dialog box appears, click **Yes** to delete the clip(s), or **No** (or **Cancel**) to cancel the procedure without deleting any clips.

NOTE: If the system is unable to delete a clip, there are two possible reasons. Either the clip's "Protection Bit" has been set by an external application (such as an automation system), or the clip is on a timeline.

Recording Clips

Click the **New** button in the **Clip Management Area** (or click **File > New Clip**) to display the **New Clip** dialog box. The dialog box appears in one of two forms, depending on whether the Windows ClipTool's Time Mode is set to "**Timecode**" or "**Frame Count**" readouts. This selection is performed on the **Setup** menu.

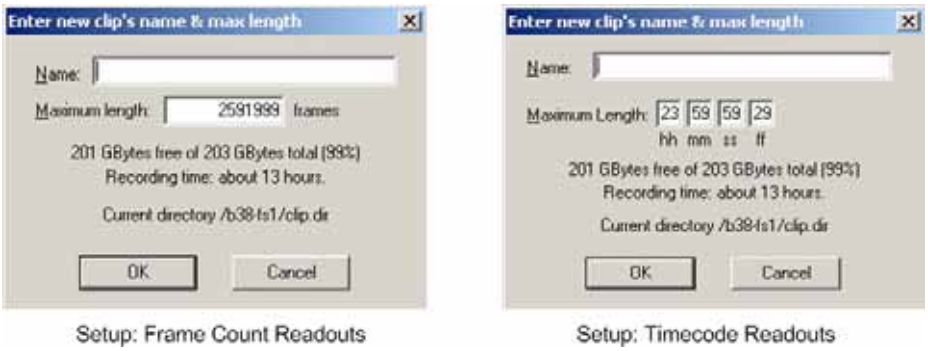


Figure 81. Recording a Clip

Note the following important points:

- The **Name** field is focused when the dialog box is displayed.
- Clip names are limited to 63 characters or less in length.

  Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for proper naming conventions.
- The **Maximum Length** field (in both dialog boxes) is preset to 24 hours minus one frame, but this value can be changed if desired. This setting only limit how much storage can be allocated; if you stop recording before hitting the limit, the clip duration will be set to the amount of material actually recorded.

- Both dialog boxes show the current directory, the amount of free space and total space on the current file system, plus an estimate of the free time available for recording (using the current Player's format). For example, a DV Player will indicate more recording time available than a 10-bit SDI Player will.

To record a clip:

1. Enter the desired clip name.
2. Enter the clip's (estimated) maximum length, or leave the default value.
3. Click **OK** or press **Enter** to accept the new clip name and duration. Click **Cancel** (or press **Esc**) to cancel the dialog box and discard the new clip.
4. When **OK** is clicked, an empty clip is created and attached it to your timeline. The Player is placed in the "**Cued for Record**" mode and the **REC** (Record) button is enabled.
5. Click **REC** to begin recording.
6. Click **Stop** to end the recording.

About Playout while Recording

When using ClipTool, the **Load Live** function allows users to load a clip with an open-ended duration of 24 hours instead of its listed duration. In this manner, a clip that is currently being recorded (a "**live**" clip) can be accessed by a "**Playout**" Player, loaded with an indeterminate out-point, and played back while the recording continues.

System problems can occur in this mode if the playback point (on the "**Playout**" Player) gets too close to the point of recording. In order to avoid problems, note the following important rules:

- If the "**Playout**" Player is on the *same* Omneon MediaDeck host as the "**Record**" Player, do not select a playback point that is within 10 seconds of the record point. Maintain a minimum 10-second safe zone between the playback and record points.
- If the "**Playout**" Player is on a *different* Omneon MediaDeck or host from the "**Record**" Player, do not select a playback point that is within 40 seconds of the record point. Maintain a minimum 40-second safe zone between the playback and record points.

These rules apply to ClipTool, the Omneon API, and any automation system that is controlling a Player.

About Windows ClipTool Keyboard Shortcuts

The following keyboard shortcuts are available with Windows ClipTool

Table 7. ClipTool Window Shortcuts

ClipTool Window Shortcuts	Action
Alt+F4	Exit the ClipTool application
F10, Alt (by itself)	Select first menu
Alt+<underlined character>	Same as pressing the button associated with that character.
ENTER	Accept dialog box settings
Tab	Focus next field
Shift+Tab	Focus previous field
Esc	Cancel dialog box
Ctrl+X	Cut text or timecode entry
Ctrl+C	Copy text or timecode entry
Ctrl+V	Paste text or timecode entry

Table 8. ClipTool Specific Shortcuts

ClipTool Specific Shortcuts	Action
SPACE	Toggles between PLAY and PAUSE. If the Player is stopped, the first SPACE starts PLAY mode, if the clip is in motion SPACE causes a PAUSE. Pressing SPACE in record mode stops recording.
Shift+SPACE	STOPs the playout or recording.
J, K, L	Motion control.
I	Mark In at the current position (set the in-point).
Shift+I	Go to in-point.
Shift+Ctrl+I	Clear in-point.
O	Mark Out at the current position (set the out-point).
Shift+O	Go to out-point.
Shift+Ctrl+O	Clear out-point.
Left, right arrows	Jog back, Jog forward (pause playback; move one frame back, forward). Jogs happen along the entire timeline, crossing clip boundaries as needed.
Shift+left, right arrows	Jog 5 frames back, 5 frames forward.
Ctrl+ left, right arrows	Jog 1 second back, 1 second forward.

ClipTool Specific Shortcuts	Action
Shift+Ctrl+ left, right arrows	Jog 1 minute back, 1 minute forward.
Alt+ left, right arrows	Same as pressing the Left Shuttle and Right Shuttle buttons
Up arrow	Configurable: **Setup** > **Up**=**Play**, **Down**=**Pause**: Plays the current clip. **Setup** > **Up**=**Prev**, **Down**=**Next**: For single clip in list, jumps to head of clip and maintains current mode (play or pause). For multiple clips, jumps to head of previous clip in the list and maintains current mode (play or pause).
Down arrow	Configurable: **Setup > Up=Play, Down=Pause**: Pauses the current clip. **Setup > Up=Prev, Down=Next:** For single clip in list, jumps to tail of clip. For multiple clips, jumps to head of next clip in the list and maintains current mode (play or pause).
PgUp	Jump up: pauses (if the clip is playing) and jumps to the head of the clip, then the head of the previous clip on the next press, etc.
PgDn	Jump down: pauses (if the clip is playing) and jumps to the tail of the clip, then the tail of the next clip on the next press, etc.
Home	Jump home: jumps to the head of the playlist. Playback mode is not changed; playback continues at the same speed after the jump.
End	Jump end: jumps to the head of the last clip, then to end of the playlist. Playback mode is not changed; playback continues at the same speed after the jump.

JKL keys are a common NLE shortcut for motion control:

- Pressing J or L alone works like pressing the left and right shuttle buttons, except that speeds below 1x are not selected. The speeds obtainable are thus -32, -16, -8, -4, -2, -1, 1, 2, 4, 8, 16, and 32, listed as multiples of normal forward play speed.
- Pressing J changes the current speed to the next leftward speed (towards faster reverse speeds), while pressing L changes the current speed to the next rightward speed (towards faster forward speeds).
- When stopped or paused, or in slow play, pressing L starts forward playback at normal speed, while pressing J starts reverse playback at normal speed.
- J and L do not auto-repeat. To speed up or slow down (move to the next speed setting), you must release the key, and then press it again.
- Pressing K pauses the video.

- Pressing J and K in combination, or K and L in combination, causes slow (quarter-speed) playback in reverse or forward respectively. Releasing J or L while K is depressed pauses playback. Releasing K while J or L is depressed starts reverse or forward play at normal speed until K is pressed again or the J or L key is released, at which point playback pauses.

About Clip Dubbing and Clip Dubbing Restrictions

Clip dubbing is a special Windows ClipTool function (configured in the SystemManager) by which you connect a **Source Player** to one or more **Target Players**, and trigger all Players in sync in order to copy the material that is present on the source Player's timeline. The Target "recording" Players may be located on the same Omneon MediaDeck as the Source Player, or on other Omneon MediaDecks.

The following connection can be made between the Source Player and the Target Player:

- Omneon MediaDeck Modules can be used, with a physical (BNC) connection from the output of the source Omneon MediaDeck Module to the input of the target Omneon MediaDeck Module. This configuration allows a format conversion during the dubbing process. For example, if a DV25 clip is the source, an MPEG clip can be recorded on the target. This type of connection can be used on a single Omneon MediaDeck or between multiple Omneon MediaDecks.

During the dubbing process, ClipTool controls a single "gang" comprised of a Source Player (the Player normally controlled by ClipTool) and one or more Target Players that are slaved to the source. The "gang" is invisible to normal ClipTool operations, and consumes no processing time unless dubbing is in progress. When a dub is made, only the Source Player's status is reflected in the ClipTool's user interface.

A gang may be specified before ClipTool is started. This function is performed in the SystemManager application, in the **Clip Dubbing Section** of the **Edit Player** page.

The "preset" gang may have an arbitrary number of Target Players in it, and this gang will be used whenever dubbing is invoked. If no gang was specified prior to startup, ClipTool asks the user for a single Recorder to connect for dubbing, when the dub function is requested.

Note the following important points:

- ClipTool's dubbing function simply records the current contents of the Source Player's timeline onto the ganged Target Players.
- The source timeline may include one clip or a sequence of clips (for DV and non-Long GOP MPEG clips). For Long GOP MPEG clips, only one clip may be dubbed at a time.
- You can dub to identically named clip(s) on the Target Player(s), or the entire timeline may be dubbed to a single new clip on the Target(s). If there are multiple clips on the Source timeline in the latter case, the dub can be thought of as compiling a new clip from edited segments of existing clips. In this way, ClipTool serves as a simple, cuts-only editor.

When dubbing is invoked, ClipTool performs a series of important tests:

- Are all Recorders connected, communicating, and enabled for recording?

  Dubbing cannot proceed if any communication or connection function fails, or cannot be performed.

- Do all gang members reside on the same Omneon MediaDeck, or share the same timecode reference?

  If all gang members are on the same Omneon MediaDeck, they can all be triggered on the same reference frame count. If all share the same reference timecode, they can all be triggered frame-accurately. If neither condition is met, frame-accurate recording cannot be guaranteed. ClipTool will refuse to dub unless the gang has a common reference, or all members reside on the same Omneon MediaDeck.

- Are all gang members running at the same frame rate?

  All ganged Players must be running at the same frame rate for correct dubbing.

- Are there any duplicate clip names in the timeline?

  If clips are to be dubbed to clips of the same name on the destinations, only one clip (or clip segment) of a given name may be present on the target timeline, otherwise the first dub to that name will be overwritten by the following dub of that name.

  Multiple copies of a clip may still reside on the source timeline, as long as you dub that timeline to a single target clip with a *new name*. For example, if you have an hour-long sports clip that contains many highlights, you can place multiple instances of it (each with the same name) on the source timeline. You can then trim heads and tails on each clip to isolate desired highlights. The resulting "edited" version can be dubbed to a Target Player, but the target clip must have a different name than the source clips.

- Do any destination names conflict with the names of existing clips?

  ClipTool will not allow you to overwrite existing clips. If clips are found on the target players' file systems that have the same names as source clips, a warning is issued. This rule applies both to the names of the source clips and to names specified by the user. ClipTool only allows you to dub clips with non-conflicting names.

  For example, if you want to convert a DV clip named "Omneon" to an SDI clip named "Omneon," the system will not permit it if the source and target files are in the same file system. In this case, rename the target clip to perform the dub.

- Do the Target Players have enough space available to record the timeline?

  ClipTool compares the length of the source timeline with the "free time" reports from each of the Target Players. If any of the targets fall short of the required time, ClipTool will warn the user. Dubbing, however, may still proceed because the "free time" estimate is a dynamic number that changes depending on the actions of many file system processes. The user can also cancel the dub and make adjustments accordingly.

Once all the tests have been passed, dubs proceed in real time. ClipTool shows the source Player in play mode. All controls other than **Stop** are disabled, and the **Transport Status** readout displays a red label that alternates between "**DUBBING**" and the current transport mode.

Dubbing proceeds until the source timeline has completed. Dubbing is halted if ClipTool loses contact with any Source or Target Player, if any error is reported, if the Source Player stops playing, if any Target Player stops recording, or if any targets report "no free space" left. Click **Stop** at any time to halt the dub prematurely. Upon conclusion of the dub, all Target Players are stopped and their timelines are ejected. A dialog box displays a summary of the actions taken.

About Clip Dubbing Restrictions

When using the clip dubbing feature in Windows ClipTool or when performing dubbing using the Omneon API, note the following:

- All Players concerned should have Omneon MediaDeck Modules attached (and the Omneon MediaDeck Modules should be connected to each other for the dub).

Dubbing Clips with Windows ClipTool

Use the following steps to dub clips with Windows ClipTool:

1. If you elect to dub via physical I/O devices, all physical (BNC) connections are the user's responsibility — the SystemManager does not handle them. Format conversion *is* allowed in this configuration. As required, connect cables between the Source Omneon MediaDeck Module's output and the Target Omneon MediaDeck Module's input.
   - If you elect to use multiple targets, they must be on different active file systems.
2. Pre-select Target Player(s) using the SystemManager:
   d. Select the desired Omneon MediaDeck host, and navigate to the **Player List**.
   e. Select (or create) the Target Player that you want to use. If the Target Player already exists, click the **Edit Hyperlink** to display the **Edit Player** page. If the Player is new, the **Edit Player** page will be automatically accessed when you enter the new Player name.
   f. Assign the desired audio and video formats to the Target Player.
   g. If you are performing dubbing via physical I/O devices, connect the tracks on the Target Player to the appropriate devices.
   h. For both types of clip dubbing, ensure that the Player is inactive.
   i. Repeat this step to create additional targets — on the same Omneon MediaDeck (only if you elect to dub via physical I/O devices), or on a different Omneon MediaDeck for both types of clip dubbing.
3. Pre-select a Source Player using the SystemManager:
   j. Select the desired Omneon MediaDeck host, and navigate to the **Player List**.
   k. Select (or create) the Source Player that you want to use.
   l. If the Source Player already exists, click the **Edit Hyperlink** to display the **Edit Player** page. If the Player is new, the **Edit Player** page will be automatically accessed when you enter the new Player name.
   m. Assign the desired audio and video formats to the Source Player.
   n. If you are performing dubbing via physical I/O devices, connect the tracks on the Source Player to the appropriate devices.
4. From the Source Player's **Edit Player** page, you can now configure the Source-to-Target connection:
   - At the bottom of the **Edit Player** page, in the **Target Player** drop-down box, choose the target Player. The SystemManager lists all valid Players (of which it has knowledge) on all Omneon MediaDecks within the Omneon system.

- Click **Connect via I/O Device**. Repeat this step to connect additional targets. The **Player List** will reflect your source and target choices.

NOTE: When the Source-to-Target connection is successful, the name of the Target Player's Omneon MediaDeck appears in each track's list of attached devices.

On the **Player List**, note that the label "**(Source:#)**" appears after the Source Player's status indicator, and label "**(Target)**" appears after the Target Player's status indicator. The # indicates the number of Target Players connected.

5. With all connections complete, activate the Source Player. This action automatically activates all Target Players.

   Refer to "Activating and Deactivating Players" in the *Omneon SystemManager User's Guide* for instructions.

6. On the Player List, click the **Open Hyperlink** to open ClipTool for the selected Source Player.
7. Place one or more clips on the source timeline and trim the clips as required.
8. On ClipTool's **Menu Bar**, click **File** > **Dubbing**. Please note:

   - If you preconfigured your Source and Target "gang" and launched ClipTool from the SystemManager, the **Choose Recording MediaDirector/Player** dialog box does not appear. Please continue with step 9.
   - If the gang was *not* predefined or if you launched ClipTool from the desktop, the **Choose Recording MediaDirector/Player** dialog box appears, asking you to select a Target Player.
   - A sample **Choose Recording MediaDirector/Player** dialog box is shown in **Figure 82**.

Figure 82. Choose Recording MediaDirector/Player

This dialog box allows you to define a gang on the fly for ad-hoc dubbing. Select the desired Target Player (only one may be selected) and click **OK**.

9. The **Dub Timeline Selection** dialog box appears, asking that you choose what action to take on the Target Player(s).

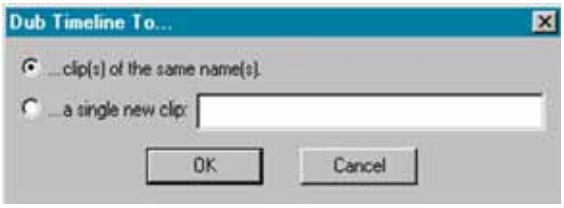


Figure 83. Dub Timeline Selection Dialog Box

- Select **…clip(s) of the same name(s)** to record all source clips to clips of the same name on the Target Player(s). In this mode, source clips will be dubbed to the Target(s) one-for-one. This selection can only be used with Targets residing on another file system.
- Additionally, the marked in-points and out-points will be preserved in the dubs. For example, if a source clip has been trimmed to frames 100-200, then the dubs will all start at frame 100 and end at frame 200.
- Select **…a single new clip** to record the entire source timeline to a single target clip with a name you specify. Fill in the name of the desired target clip.
- In this mode, the entire timeline is recorded to a new clip starting at frame 0. Even if you dub a single clip and specify its existing name as the “new” name, it will start at zero.

10. With your selection made, click **OK**. ClipTool now checks the pending dub operation. If no problems are found, the dub begins. If, however, potential problems are found, the **Dub Preprocessing** dialog box appears, a sample of which is shown in **Figure 84**.

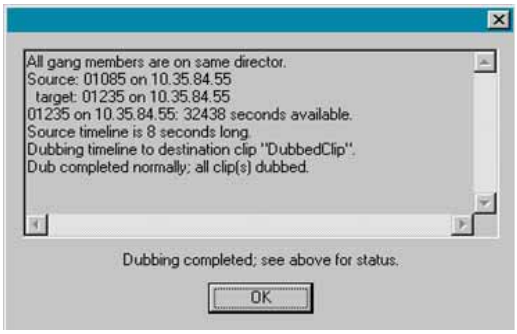


Figure 84. Dub Preprocessing

The scrolling window shows a comprehensive list of status checks, including sync status, the names of the gang members and any possible problems detected. The line of text below the list reports the most pressing problem.

- Click **Cancel** (or press **Enter** or **Esc**) to cancel the dub. **Cancel** is the default selection.
- Click **OK** to proceed with dubbing. ClipTool will also process any conflicts by ejecting source clips with conflicting names. It will then load the target timelines with appropriately named and sized clips in which to record.

When dubbing commences, the Source Player cues at the head of the timeline and the Target Players cue into record. All transport controls other than **Stop** are disabled, and the **Transport Status** readout flashes between the current state and "**DUBBING**."

Figure 85. Dubbing Status Message

Note the following points regarding the dub in progress:

- Use the **List** button to hide and show the clip list, but remember that all other controls (other than **Stop**) are unavailable.
- Press **Stop** to halt the dub. In this case, dubbing stops and the clip currently being recorded on the Target(s) will be incomplete.
- ClipTool monitors the dubbing process and halts on any of the following conditions:
  - The Source or Target Player fails to respond or reports an error.
  - A Target Player runs out of space.
  - The Source Player reports a status other than "**Cued for Play**" or "**Play**".
  - A Target Player reports a status other than "**Cued for Record**" or "**Record**".
  - The end of the playback timeline is reached (normal completion).
  - **Stop** is pressed.

When dubbing ends, the **Dub Information** dialog box appears with a summary of the operations performed and the reason that the dubbing ended.

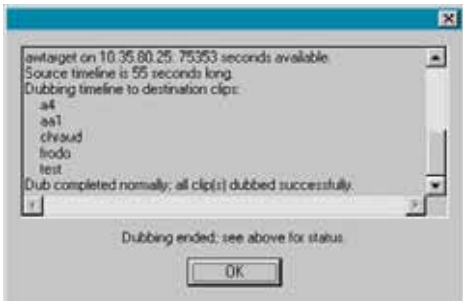


Figure 86. Dub Information Dialog Box

11. Repeat the procedure from step 7 to dub additional clips.

CHAPTER 5
Omneon MediaDeck Configuration

This section provides configuration and operation instructions for the Omneon MediaDeck. Choose from the following:

- **Upgrading Firmware**
- **Omneon MediaDeck Configuration**
- **Omneon MediaDeck Module Configuration**
- **Omneon MediaDeck Storage Configuration**
- **Omneon MediaDeck File System Configuration**

For information on advanced configuration, diagnostics, and SystemManager configuration, refer to the *Omneon SystemManager User's Guide*.

IMPORTANT: The procedures outlined in this section are written for qualified technical personnel, skilled at advanced networking procedures. If you have any questions, please consult with your facility's Information Service staff or contact Omneon **Audio Track Types and Media Wrapper Formats**.

NOTE: The following terms are interchangeable within SystemManager:

- MediaDeck information is sometimes displayed as MediaDirector information.
- MediaDeck Module information is sometimes displayed as MediaPort information.
- MediaDeck Storage information is sometimes displayed as MediaStore information.

Upgrading Firmware

Choose from the following topics:

- **Upgrading MediaDeck Module Firmware**
- **Upgrading Omneon MediaDeck Firmware**
- **Upgrading Disk Drive Firmware**
- **Handling Device Upgrade Failures**
- **Replacing Firmware and PCapps Files**

NOTE: When upgrading the Omneon MediaDeck, ensure that no recording or playback is taking place. Make sure all players are stopped. Also ensure that no file copies or transfers are in progress internally or on the Ethernet port. Upgrade all Omneon MediaDecks at the same time. Before commencing any player or file activity, verify that all Omneon MediaDeck are running the same version of firmware as shown on the SystemManager's **Upgrade Firmware** page under the **Configuration** tab.

NOTE: Prior to upgrading disk drive firmware, in addition to the previous note, stop the file system on every Omneon MediaDeck in your system.

Upgrading MediaDeck Module Firmware

Choose from the following two methods to upgrade MediaDeck Module firmware:

- **Upgrade from the MediaDeck Module Properties Page**
- **Upgrading Omneon MediaDeck Firmware**

IMPORTANT: When upgrading all MediaDeck Module 5xxx series from a pre-5.3 version to 5.3 or higher, you must follow the upgrade procedure, including the restart, *twice* for the units to be fully upgraded and function properly. (Note that it is not necessary to update other components, such as the MediaDeck or disk drive firmware, twice.) Once the MediaDeck Module has been upgraded to 5.3 or later, subsequent upgrades to 5.3 or later may be performed successfully by following the upgrade procedure only once.

NOTE: Before upgrading to the latest version of firmware, check with your automation, archival, and third party software vendors for compatibility information.

Upgrade from the MediaDeck Module Properties Page

This method allows you to upgrade the selected MediaDeck Module only. If you have received a new SystemManager CD-ROM that includes a specific MediaDeck Module upgrade, the **Software Installation** instructions must be followed completely. This ensures that new software is placed properly in the **D:\Upgrades** directory.

To upgrade MediaDeck Module firmware using the MediaDeck Module Properties page:

1. Ensure that no recording or playback is taking place. Ensure that all Players are stopped. Ensure that no file copies or transfers are in progress, internally or on any Ethernet port.
2. Ensure that the most recent release of SystemManager software has been installed.

   Refer to **Verifying Your Release** for instructions.
3. With the SystemManager software properly installed, log on to the SystemManager application.

   Refer to **Logging on to the SystemManager Application** for instructions.
4. Click the **Home** tab, and in the left-hand column, click the small **Firmware Selection** icon to display the **Firmware Selection** page. A check box will appear next to the currently installed firmware version as shown in **Figure 87**.

Figure 87. Selecting the Firmware Version

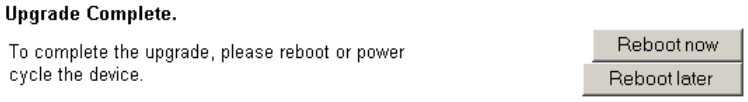
5. Click the radio button for the desired version of firmware. When the **Confirm** dialog appears, click **OK**.

   NOTE: This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

6. Click the **Configuration** tab.
7. Click the **Omneon MediaDeck Module** icon for the Omneon MediaDeck Module whose firmware you want to upgrade. The **MediaDeck Module Properties** page appears.
8. Scroll to the bottom of the page and click **Upgrade Firmware**. The **Upgrade Firmware** page appears.

Figure 88. The Upgrade Firmware Page

9. Click **Upgrade Firmware** to begin upgrading.
10. When the upgrade is complete, the following message and reboot buttons appear.



11. Click **Reboot Now**. The system returns to the **MediaDeck Module Properties** page.

Upgrade MediaDeck Modules from the Upgrade Firmware Page

Use the following steps to upgrade MediaDeck Module firmware using the **Upgrade Firmware** page. This method allows you to upgrade one or more MediaDeck Modules. If you have received a new SystemManager CD-ROM that includes a specific MediaDeck Module upgrade, the **Software Installation** instructions must be followed completely. This ensures that new software is placed properly in the **D:\Upgrades** directory.

To upgrade from the Upgrade Firmware page:

1. Ensure that no recording or playback is taking place. Ensure that all Players are stopped. Ensure that no file copies or transfers are in progress, internally or on any Ethernet port.
2. Ensure that the most recent release of Omneon SystemManager software has been installed.

   Refer to **Verifying Your Release** for instructions.
3. With the SystemManager software properly installed, log on to the SystemManager application.

   Refer to **Logging on to the SystemManager Application** for instructions.
4. Click the **Home** tab, and in the left-hand column, click the small **Firmware Selection** icon to display the **Firmware Selection** page.

5. Click the radio button for the desired version of firmware. When the **Confirm** dialog appears, click **OK**.

   NOTE: This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

6. Click the **Home** tab, and in the left-hand column, click the **Upgrade Firmware** icon to display the **Upgrade Firmware** page.

7. Scroll to the **MediaPorts/MediaDeck Modules** section of the page, shown in **Figure 89**.

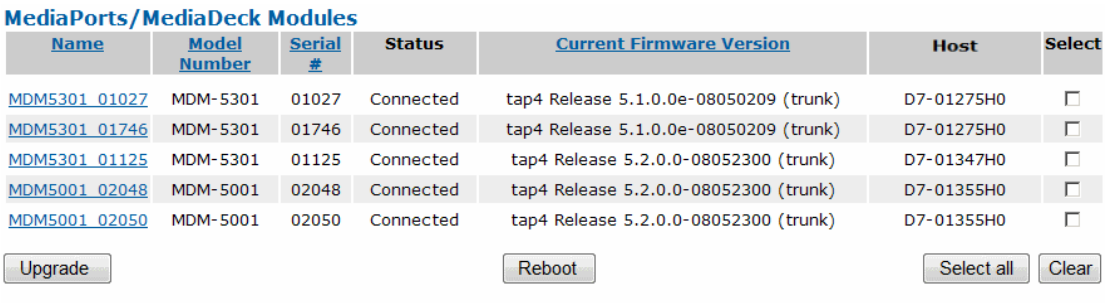
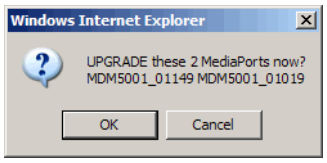


Figure 89. Upgrading the MediaDeck Module Firmware

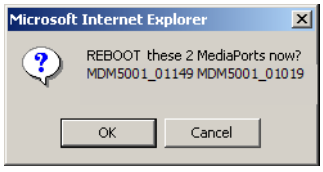
8. Click the **check boxes** for the MediaDeck Modules that you want to upgrade, or (recommended), click **Select all MediaPorts**. You cannot have different MediaDeck Module revisions on the same system.

9. Click the **Upgrade** button. A confirmation dialog appears with a list of the selected Omneon MediaDeck Modules.



10. Click **OK** to upgrade the selected Omneon MediaDeck Modules, or click **Cancel** to exit the procedure safely.

11. When the upgrade process is complete, select the MediaDeck Modules again, and then click the **Reboot** button. A confirmation dialog appears.



12. Click **OK** to reboot the selected MediaDeck Modules or click **Cancel** to exit the procedure safely.

Upgrading Omneon MediaDeck Firmware

Choose from the following two methods to upgrade Omneon MediaDeck firmware:

- **Upgrade from the MediaDeck Properties Page**
- **Upgrade Omneon MediaDeck from the Upgrade Firmware Page**

NOTE: Before upgrading to the latest version of firmware, check with your automation, archival, and third party software vendors for compatibility information.

Upgrade from the MediaDeck Properties Page

Use the following steps to upgrade Omneon MediaDeck firmware. This method allows you to upgrade the selected Omneon MediaDeck only. If you have received a new SystemManager CD-ROM that includes a specific Omneon MediaDeck upgrade, the **Software Installation** instructions must be followed completely. This ensures that new software is placed properly in the **D:\Upgrades** directory.

To upgrade from the MediaDeck Properties page:

1. Ensure that no recording or playback is taking place. Ensure that all Players are stopped. Ensure that no file copies or transfers are in progress, internally or on any Ethernet port.

   Ensure that the most recent release of Omneon SystemManager software has been installed. Refer to **Verifying Your Release** for instructions.

2. With the SystemManager software properly installed, log on to the SystemManager application.

   Refer to **Logging on to the SystemManager Application** for instructions.

3. Click the **Home** tab, and In the left-hand column, click the **Firmware Selection** icon to display the **Firmware Selection** page.

4. Click the radio button for the desired version of firmware. When the **Confirm** dialog appears, click **OK**.

   NOTE: This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

5. Click the **Configuration** tab.

6. Click the icon for the Omneon MediaDeck whose firmware you want to upgrade. The **Physical Configuration** page appears.

7. Click the large picture of the Omneon MediaDeck to display the **MediaDeck Properties** page, then scroll to the bottom and click **Upgrade Firmware**.

   The **Upgrade Firmware** page appears.

Figure 90. The Upgrade Firmware Page

8. Click **Upgrade Device** to upgrade the selected Omneon MediaDeck, or click **Cancel** to exit the procedure. When you click **Upgrade Device**, the message "**Upgrade in Progress**" appears.
9. When the upgrade is complete, the page changes to display two reboot buttons.

10. Click **Reboot Now**. The system returns to the **MediaDeck Properties** page.

Upgrade Omneon MediaDeck from the Upgrade Firmware Page

Use the following steps to upgrade Omneon MediaDeck firmware using the **Upgrade Firmware** page. If you have received a new SystemManager CD-ROM that includes a specific Omneon MediaDeck upgrade, the **Software Installation** instructions must be followed completely. This ensures that new software is placed properly in the **D:\Upgrades** directory.

To upgrade from the Upgrade Firmware page:

1. Ensure that no recording or playback is taking place. Ensure that all Players are stopped. Ensure that no file copies or transfers are in progress, internally or on any Ethernet port.
2. Ensure that the most recent release of Omneon SystemManager software has been installed.
3. With the SystemManager software properly installed, log on to the SystemManager application.

   Refer to **Logging on to the SystemManager Application** for instructions.
4. Click the **Home** tab.
5. In the left-hand column, click the small **Firmware Selection** icon to display the **Firmware Selection** page.

6. Click the radio button for the desired version of firmware. When the **Confirm** dialog appears, click **OK**.

   NOTE: This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

7. Click the **Home** tab.

8. In the left-hand column, click the **Upgrade Firmware** icon to display the **Upgrade Firmware** page, as shown in **Figure 91**.

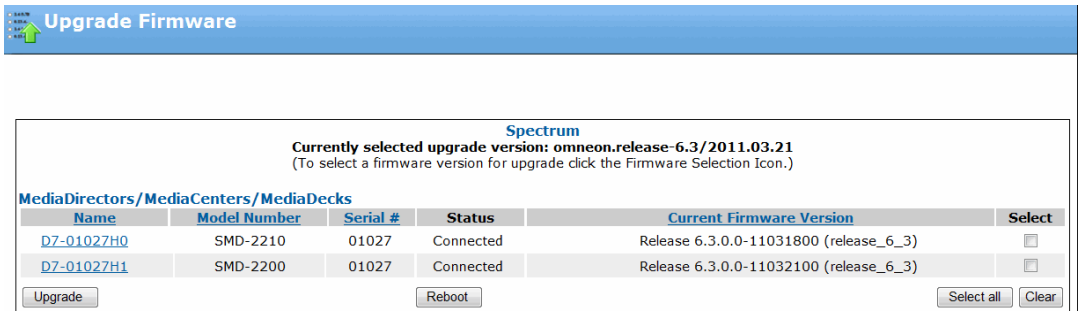
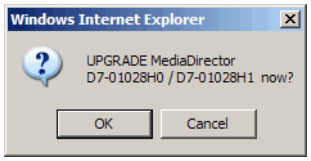


Figure 91. Upgrade Firmware page

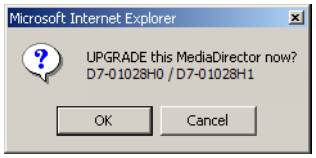
9. In the **MediaDirectors/MediaCenters/MediaDecks** section, click the **check boxes** for the Omneon MediaDecks whose firmware you want to upgrade, or (recommended), click **Select all** . You cannot have Omneon MediaDecks with different revisions on the same system.

   Click the **Upgrade** button. A confirmation dialog appears with a list of the selected Omneon MediaDecks.



10. Click **OK** to upgrade the selected Omneon MediaDecks, or click **Cancel** to exit the procedure safely without upgrading.

11. When the upgrade process is complete, select the Omneon MediaDecks again, and then click the **Reboot** button. A confirmation dialog appears.



12. Click **OK** to reboot the Omneon MediaDecks, or click **Cancel** to exit the procedure safely.

NOTE: Rebooting an Omneon MediaDeck stops playback or recording on the Omneon MediaDeck.

Verifying Disk Drive Firmware

Follow these steps:

1. Go to the **Disk Utilities** page for any connected Omneon MediaDeck.
2. Click the **Upgrade Firmware** button.
3. Compare the **Firmware Rev. Level** and **New Firmware Available** columns for each drive.

   If any drives are running earlier firmware than is available, you must upgrade the disk drive firmware. Refer to **Upgrading Disk Drive Firmware** for detailed instructions.

Upgrading Disk Drive Firmware

Before starting to upgrade disk drive firmware, do the following checks:

- Verify that startup is complete.
- Ensure that the most recent release of Omneon SystemManager software has been installed. Refer to **Verifying Your Release** for instructions.

  If you received a new SystemManager CD-ROM that includes a specific disk drive upgrade, follow the **Verifying Your Release** instructions completely to ensure that new software is placed properly in the **D:\Upgrades** directory.
- Ensure that no recording or playback is taking place.
- Ensure that all Players are stopped.
- Ensure that no file copies or transfers are in progress, internally or on any Ethernet port.

To upgrade disk drive firmware.

1. With the SystemManager software properly installed, log on to the application.

   Refer to **Logging on to the SystemManager Application** for instructions.
2. On **all** Omneon MediaDecks to which the disk drives are attached, stop all playback and recording activities, and stop all file systems.

   Refer to **Omneon MediaDeck File System Configuration** for instructions on stopping the file system.
3. Click the **Home** tab.
4. Click the **Firmware Selection** icon to display the **Firmware Selection** page.
5. Click the radio button for the desired version of firmware. When the **Confirm** dialog appears, click **OK**.

   NOTE: This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

6. Click the **Configuration** tab.
7. Click the **Disk Utilities** icon to display the **Disk Utilities** page for all Omneon MediaDecks.
8. Click the Omneon MediaDeck whose disk drive(s) you want to upgrade. The **Disk Utilities** page for the selected Omneon MediaDeck appears, as shown in **Figure 92**.

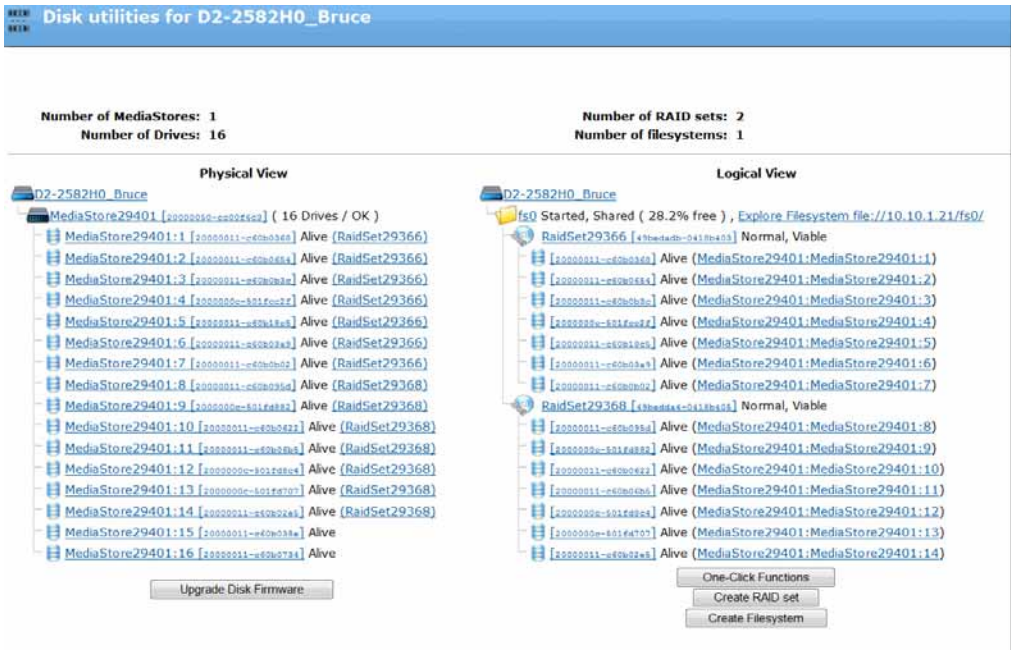


Figure 92. The Disk Utilities Page

9. At the bottom of the page, click **Upgrade Firmware**.

   The **Upgrade Drive Firmware** page for the selected Omneon MediaDeck appears.

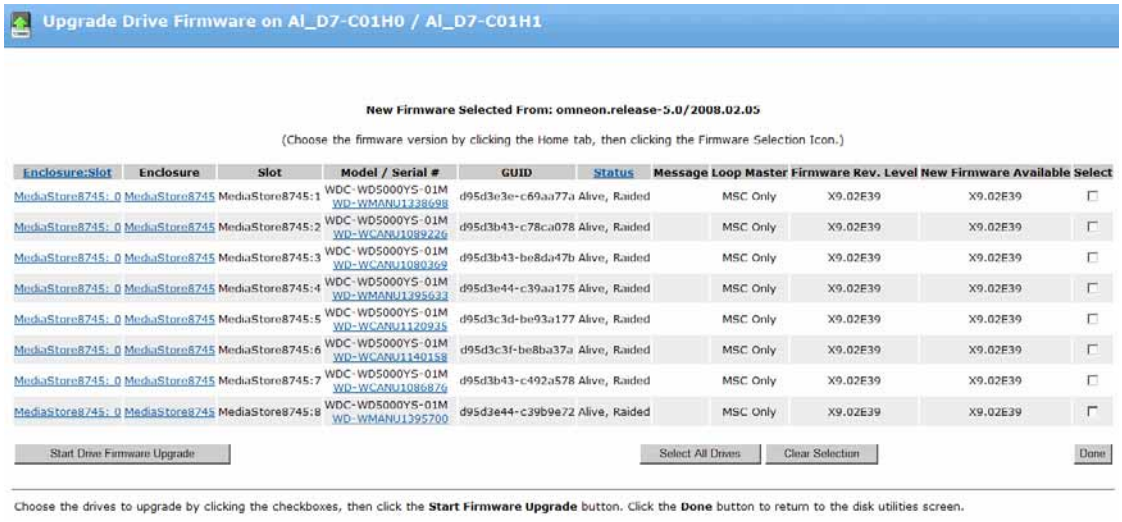


Figure 93. Upgrading the Disk Drive Firmware

10. Click the **check boxes** for the drives whose firmware you want to upgrade, or (recommended) click **Select all Disks**. You cannot have disks with different revisions within a RAID set.
11. Click the **Start Upgrade Firmware** button. The **Upgrade Disk Drives Now?** dialog appears.

12. Click **OK** to upgrade the selected disk drives, or click **Cancel** to exit the procedure safely without upgrading.

Handling Device Upgrade Failures

If a failure occurs when upgrading a device, the SystemManager will generate an **Upgrade Failed** alarm. If an **Upgrade Failed** alarm occurs, the SystemManager will not let you perform another upgrade until the alarm is cleared.

To clear alarms:

1. Click on the **Diagnostic** tab on the SystemManager's menu bar.
2. Click on the **View Alarms** icon in the left-hand column to display the **View Alarms** page.
3. Click the **Clear Alarms** button to clear all the listed alarms.
4. Start another upgrade.

Replacing Firmware and PCapps Files

This section covers firmware files and PCapps (PC Applications) only. Note the following:

- If you were instructed to download and install the SystemManager software, ensure that you have installed the application according to the instructions in the *Omneon SystemManager Installation Guide*.
- If you were instructed to download and install only firmware or PCapps files, start here after downloading software from the server. Technical Support will provide the proper filenames.

Firmware Files

The following table provides a partial list of the firmware files contained in the **D:\Upgrades\[release name]\[timestamp]** directory, along with brief descriptions.

Table 9. List of Firmware Files

File	Description
iop.hex	MediaDirector/MediaDeck firmware
sdh.hex	DV MediaPort/MediaDeck Module firmware
tap1.hex	SDI MediaPort/MediaDeck Module firmware
tap2.hex	MPEG MultiPorts/MediaDeck Module firmware
tap3.hex	Disk firmware
x1.lod	Disk firmware
x2.lod	MediaDirector/MediaDeck firmware
dir2.hex	MediaDirector/MediaDeck firmware

NOTE: Within the filenames **x1.lod** and **x2.lod**, **X1** and **X2** are version numbers that may change. The *.hex file names will remain the same from upgrade to upgrade.

PCapps Files

For your reference, the following table provides a partial list of the PCapps files contained in the **D:\Omneon\bin** directory, along with brief descriptions.

Table 10. List of PCApps Files

File	Description
monitor.exe	This application provides a window that monitors system messages, logs and processes that occur between the Omneon MediaDeck and other Omneon devices.
cliptool.exe	ClipTool application
omnicueservice.exe	Software application that OmniBus uses for system control.
fsmain.exe	A command line program used to issue file system and disk drive commands to Omneon MediaDecks.
flashprog.exe	A command line program to upgrade firmware in MediaDecks.
playerlib.dll	The library containing code to control Players on MediaDecks.
oncrpc.dll	The library containing code which provides basic communication with all Omneon products.
mfc42.dll	The Microsoft library providing basic program functions.

To replace firmware and PCapps files:

1. Unzip the indicated firmware or PCapps files into **D:\Temp**, where D is the Omneon drive. Your password is required. This action creates a new directory within **D:\Temp**.
2. Depending on the type of files you are installing, use the appropriate step below:
   a. If you are replacing firmware files, the new directory will be named with a time-stamp, for example, "**2002.08.24**." Drag this directory into the appropriate "version" directory under the **D:\Upgrades** directory. An example of the directory name is "**D:\Upgrades\omneon.release-2.0**." Continue with step 3.
   b. If you are replacing PCapps files, the new directory will be named "**pcapps**." Open this directory and drag all files inside to the "**D:\Omneon\bin**" directory. Continue with step 3.
3. Start the SystemManager application.

   Refer to **Logging on to the SystemManager Application** for instructions.
4. Select the new firmware version via the SystemManager.

   Refer to "Changing Firmware Version Source Files" in the *Omneon SystemManager User's Guide* for instructions.
5. Upgrade the MediaDeck Module. Go to the **Upgrading MediaDeck Module Firmware** and begin with step 3. When you have completed the entire section, return to this point.
6. Upgrade the Omneon MediaDeck. Go to **Upgrading Omneon MediaDeck Firmware** and begin with step 3. When you have completed the entire section, return to this point.

   This completes the upgrade procedure.

Omneon MediaDeck Configuration

Choose from the following topics:

- **Viewing Omneon MediaDeck Properties**
- **Changing an Omneon MediaDeck Host Name**
- **Changing an Omneon MediaDeck Description**
- **Changing Omneon MediaDeck Clock Reference VITC Lines**
- **Changing the Omneon MediaDeck Time Zone**
- **Changing the Omneon MediaDeck Wink State**
- **Changing Daemon Settings**
- **Rebooting the Omneon MediaDeck**
- **Powering Down the Omneon MediaDeck**
- **Viewing a Snapshot of the Omneon MediaDeck Log**
- **Configuring Monitor for Event Logging**
- **Replacing Omneon MediaDeck Components**

- **Setting IP Addresses through vDHCP**
- **Setting Omneon MediaDeck Static IP Addresses**
- **Changing Logging Variable Settings**

Viewing Omneon MediaDeck Properties

The **MediaDeck Properties** page allows you to check the properties of Omneon MediaDecks and Omneon MediaDeck Storage.

To view MediaDeck Properties:

1. From the **System Diagram** page, click any **Omneon MediaDeck** heading (or icon) to reach the **Physical Configuration** page, as shown in **Figure 94**.

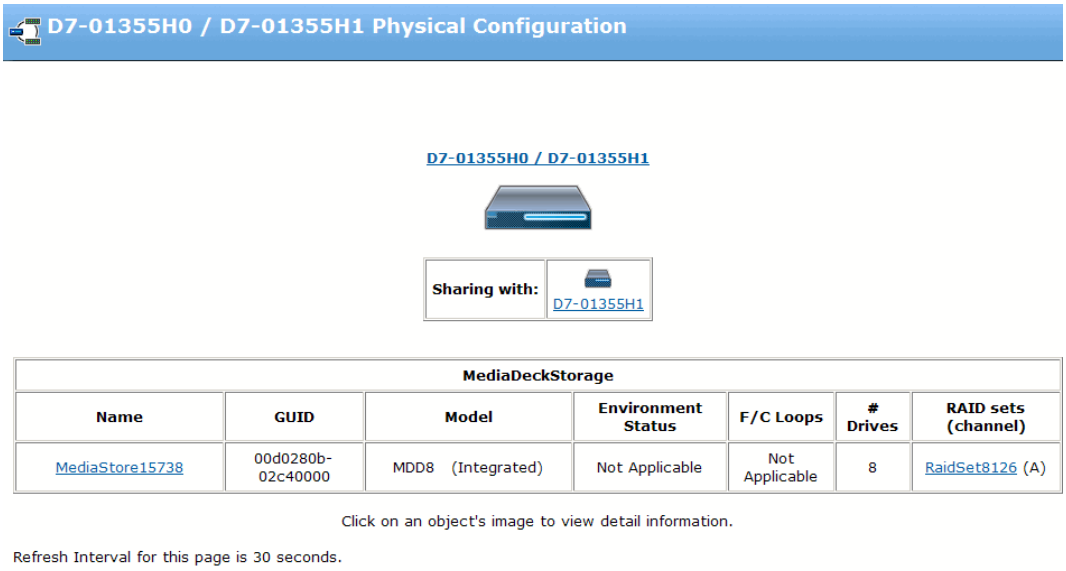


Figure 94. MediaDeck Physical Configuration Page

This page displays the selected Omneon MediaDeck along with the name and model type of the MediaStore (Omneon MediaDeck Storage).

2. Click the picture of the Omneon MediaDeck to display the **MediaDeck Properties** page.

Host Properties

The **Host Properties** section of the **MediaDeck Properties** page is shown in **Figure 95**.

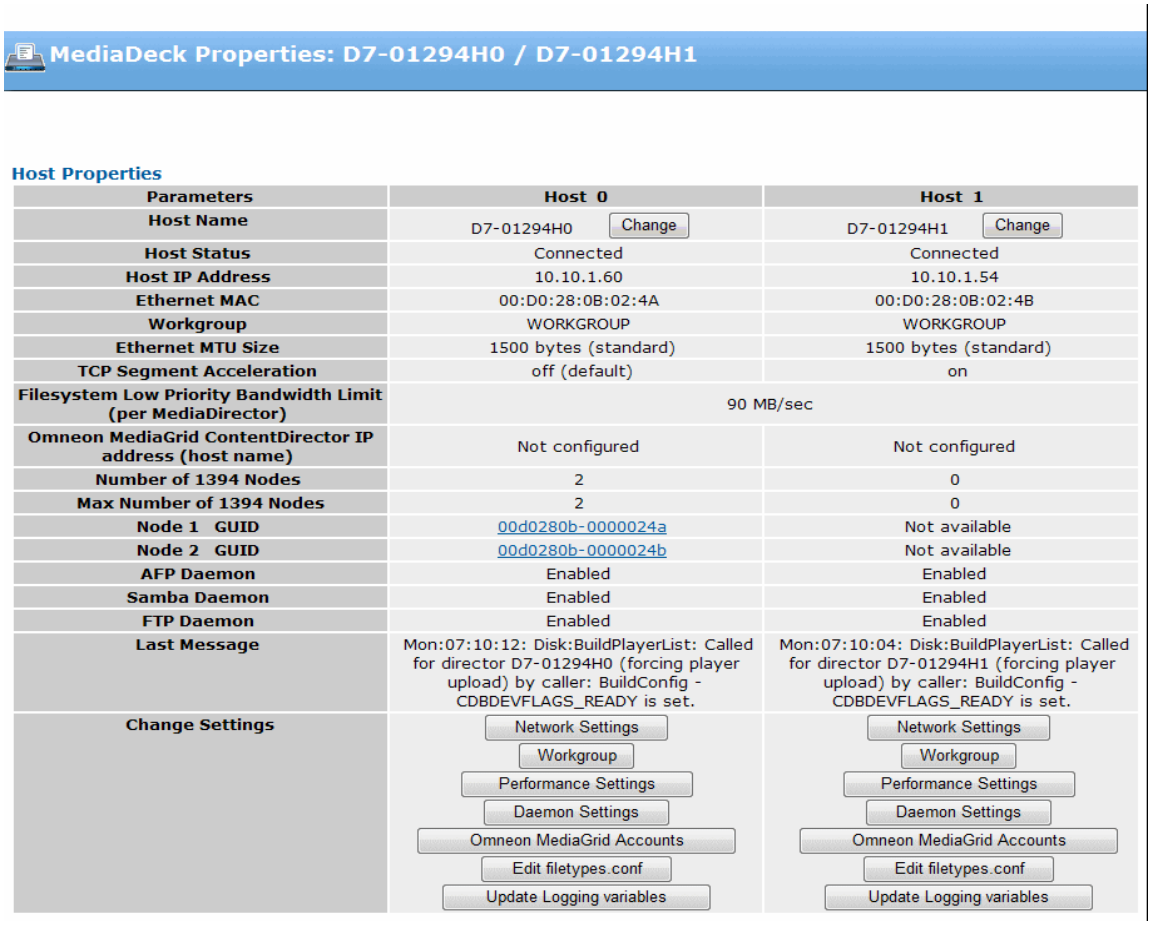


Figure 95. Host Properties

- **Host Name**: This field lists the Omneon MediaDeck's user-assigned host name, which appears in the **System** diagram, page titles and other Omneon MediaDeck-related fields. Click **Change** to open the **Change MediaDirector Name** page, where you can change name of the selected Omneon MediaDeck host. Refer to **Changing an Omneon MediaDeck Host Name** for instructions.

  When you first start the SystemManager, it queries the name from the Omneon MediaDeck. The name defaults to the DNS name, but if that name is unavailable, the Omneon MediaDeck creates a name for itself using its serial number.

  If you change the Omneon MediaDeck host name and there is a DNS name available, the new name will not match the DNS name. However, the Omneon MediaDeck will use the new host name in preference to the DNS name. Note that having different names (internal vs. DNS) may cause confusion when trying to access the Omneon MediaDeck from a PC.

  NOTE: If you are using DNS to name Omneon MediaDecks, do not change the host name using the **Change Name** button.

- **Host Status**: Describes the Omneon MediaDeck's current status, such as "Connected," "Configuring," "Rebooting," "Not Responding," etc. This label also appears adjacent to the Omneon MediaDeck's name in the **System** diagram. Note that it may take up to 30 seconds for the SystemManager application to reflect new Omneon MediaDeck status (for example, when a connection is lost or regained).
- **Host IP Address**: Lists the Omneon MediaDeck's IP address, as assigned by the DHCP server.
- **Ethernet MAC**: Lists the Omneon MediaDeck host's MAC (Medium Access Control) address.
- **WorkGroup**: Lists the name of the host's Workgroup on the network.
- **Ethernet MTU Size**: Shows the maximum size for Ethernet packets.

  NOTE: At this time, Omneon does not recommend changing from the standard packet size of 1500 bytes.

- **TCP Segment Acceleration**: Shows whether hardware acceleration for sending large TCP segments is enabled (ON).

  NOTE: At this time, Omneon does not recommend enabling this feature.

- **Filesystem Low Priority Bandwidth Limit (per MediaDirector)**: Shows the file system low priority bandwidth limit for file system reads and writes of clips.

  NOTE: At this time, Omneon does not recommend changing from the default 45 Mbps.

- **Omneon MediaGrid ContentDirector IP address (Host name)**: (Omneon MediaGrid only) Shows the IP address of a ContentDirector in an Omneon MediaGrid (if any), used to communicate between a Spectrum system and an Omneon MediaGrid system.
- **Number of 1394 Nodes**: Lists the number of IEEE 1394 GUID (Global Unique Identifier) found for this Omneon MediaDeck Host. If this number differs from the Max. Number of 1394 Nodes, this may indicate a hardware problem.
- **Max Number of 1394 Nodes**: Lists the maximum number of nodes available for this Omneon MediaDeck Host.
- **Node GUID**: Lists the IEEE 1394 GUID (Globally Unique Identifier) for each of the Omneon MediaDeck's nodes. By clicking the hyperlink, the **Node Properties** page.
- **AFP Daemon**: Displays the status of the AFP Daemon. This is **Enabled** by default. To disable the AFP daemon, click **Daemon Settings**. Refer to **Changing Daemon Settings** for instructions.
- **Samba Daemon**: Displays the status of the Samba Daemon. This is **Enabled** by default. To disable the Samba daemon, click **Daemon Settings**. Refer to **Changing Daemon Settings** for instructions.
- **FTP Daemon**: Displays the status of the FTP Daemon. This is **Enabled** by default. To disable the AFP daemon, click **Daemon Settings**. Refer to **Changing Daemon Settings** for instructions.
- **Last Message**: Displays the last message received that deals with the indicated Omneon MediaDeck host.

- **Change Settings: Network Settings**: Click to access the **Network Settings** page, which allows you to configure each host's IP address. For instructions on setting static IP addresses, refer to **Setting Omneon MediaDeck Static IP Addresses**.
- **Change Settings: Workgroup**: Click to display the **Change MediaDirector Workgroup** page for the selected host. For more information, refer to "Viewing and/or Clearing Alarms" in the *Omneon SystemManager User's Guide*.
- **Change Settings: Performance Settings**: Click to access the **Change MediaDirector Network/Filesystem Performance Settings** page where you can configure or change a selection of settings including Ethernet MTU Size, TCP Segment Acceleration, and Filesystem Low Priority Bandwidth Limit.
- **Change Settings: Daemon Settings**: Click to change AFP, Samba, or FTP Daemon settings. Refer to **Changing Daemon Settings** for instructions.
- **Change Settings: Omneon MediaGrid Accounts**: Click to access the **Omneon MediaGrid ContentDirector IP Address** page where you can configure or change the IP address of a ContentDirector in an Omneon MediaGrid system. For more information, refer to "Connecting to an Omneon MediaGrid (for Non MCP-2202 MediaDirectors)" in the *Omneon SystemManager User's Guide*.
- **Change Settings: Edit Filetypes.conf**: Click to display the **Edit Filetypes.conf** page for the selected host. Continuing down the page, the same **General Properties** type information appears for all Omneon MediaDeck models.
- **Change Settings: Update Logging variables**: Use only if instructed by Omneon Technical Support. Click to access the **Change Logging Variable Settings** page where you can specify logging settings for your MediaDeck. Refer to **Changing Logging Variable Settings** for more information.

General Properties

The **General Properties** section is shown in **Figure 96**.

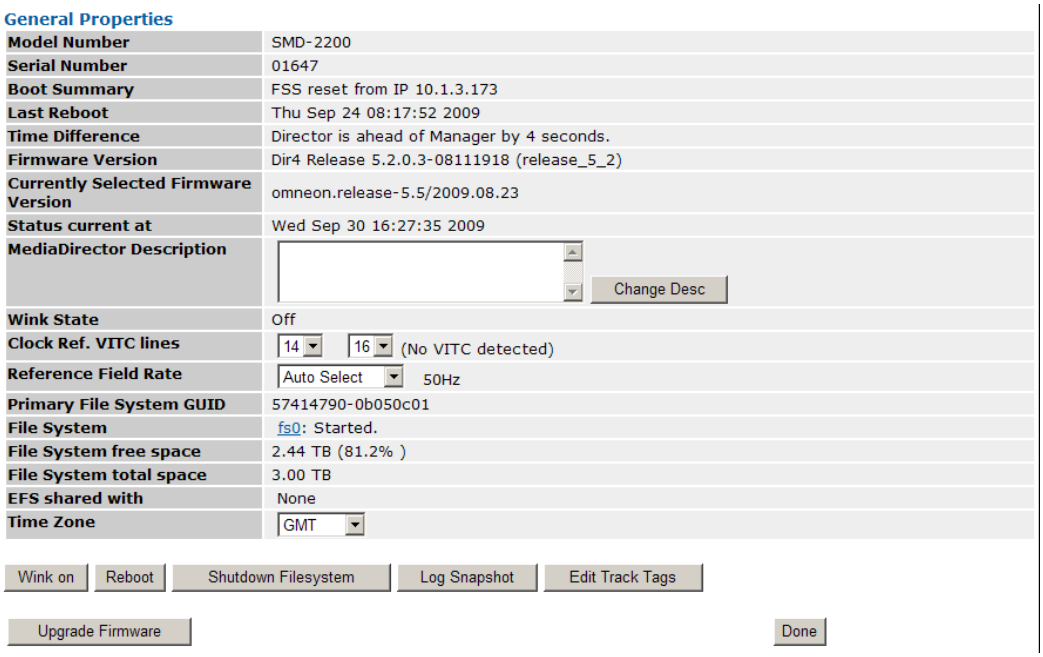


Figure 96. General Properties Section

- **Model Number**: Lists the Omneon MediaDeck's product model number.
- **Serial Number**: Lists the Omneon MediaDeck's serial number.
- **Boot Summary**: Displays the reason why the last reboot of the Omneon MediaDeck occurred.
- **Last Reboot:** Displays the date and time of the last reboot of the Omneon MediaDeck.
- **Time Difference**: Shows the time difference in seconds between the SystemManager clock and the Omneon MediaDeck clock. This is useful when comparing SystemManager logs and monitor logs on a file system.
- **Firmware Version**: Lists the current version of firmware that resides in the Omneon MediaDeck. Refer to **Upgrading Firmware.**
- **Currently Selected Firmware Version**: Lists the firmware version that is selected on the **Firmware Version Selection** page.
- **Status Current at**: Lists the most recent date and time that the page was refreshed. Note that the page is automatically refreshed every 20 seconds.
- **MediaDirector Description**: Displays a scrollable multi-line description of the Omneon MediaDeck. This field is useful for entering data that clarifies the specific Omneon MediaDeck's role in your system, particularly when multiple Omneon MediaDecks are in use.
  - **Change Desc**: Click to change the Omneon MediaDeck's description. Refer to **Changing an Omneon MediaDeck Description** for instructions.
- **Wink State**: Describes the wink state of the Omneon MediaDeck's light bar, either **On** or **Off**. Refer to **Wink (On/Off)** description below for details.

- **Clock Ref. VITC lines**: The two “Clock Reference” drop-down boxes select the TV lines from which the Omneon MediaDeck reads VITC (Vertical Interval Time Code) on the incoming analog reference signal. Each number indicates a video line.

  For proper operation with selected third party automation applications (or when dubbing between Omneon MediaDecks), the two selections (which default to lines **14** and **16**) must match the VITC lines of the reference black connected to the Omneon MediaDeck. Refer to **Changing Omneon MediaDeck Clock Reference VITC Lines** for instructions.

- **Reference Field Rate**: Selects the field rate at which the Omneon MediaDeck runs its internal reference clock.

  When set to **Auto Select** (the default selection) the Omneon MediaDeck runs off of the clock signal that is connected to its reference input BNC. The system chooses 525 or 625 depending upon the analog input signal. The selected rate is displayed beside the box — either 59.94Hz for 525 or 50Hz for 625.

  When set to **Manual**, a second drop-down box appears, allowing the user to choose between 24Hz, 50Hz, 59.94Hz or 60Hz.

  Refer to “Changing MediaDirector Reference Field Rate” in the *Omneon SystemManager User’s Guide* for instructions.

- **Primary Filesystem GUID**: Lists the file system’s GUID (Globally Unique Identifier), as used by the SystemManager platform for network identification purposes.

- **File System**: Displays a link to the Filesystem Utilities page and shows the status of the file system. For information about the Filesystem Utilities page, refer to **Viewing General File System Information**.

- **File System Free Space**: Lists the space available on the file system in bytes, followed by the same value as a percentage of the total. The abbreviation GB stands for gigabytes (1 billion bytes); the abbreviation TB stands for terabytes (1 trillion bytes). Values that appear are the actual value, or the label “Unknown” appears if the file system has not been started.

- **File System Total Space**: Describes the total amount of space available (in bytes) on the file system. Note that if there is more than one file system on the Omneon MediaDeck, the additional file systems can be viewed on the **Disk Utilities** page.

- **EFS shared with**: Does not apply to MediaDecks, only MediaDirectors. For information, see the *Omneon SystemManager User’s Guide*.

- **Time Zone**: Click the drop-down arrow to select the international time zone in which your facility is located. This ensures that the “date” stamp on recorded clips is correct, and also provides assistance for Omneon Technical Support for remote troubleshooting.

- **Wink On / Off (button)**: Click to change the wink state of the Omneon MediaDeck’s light bar. Refer to **Changing the Omneon MediaDeck Wink State** for instructions.

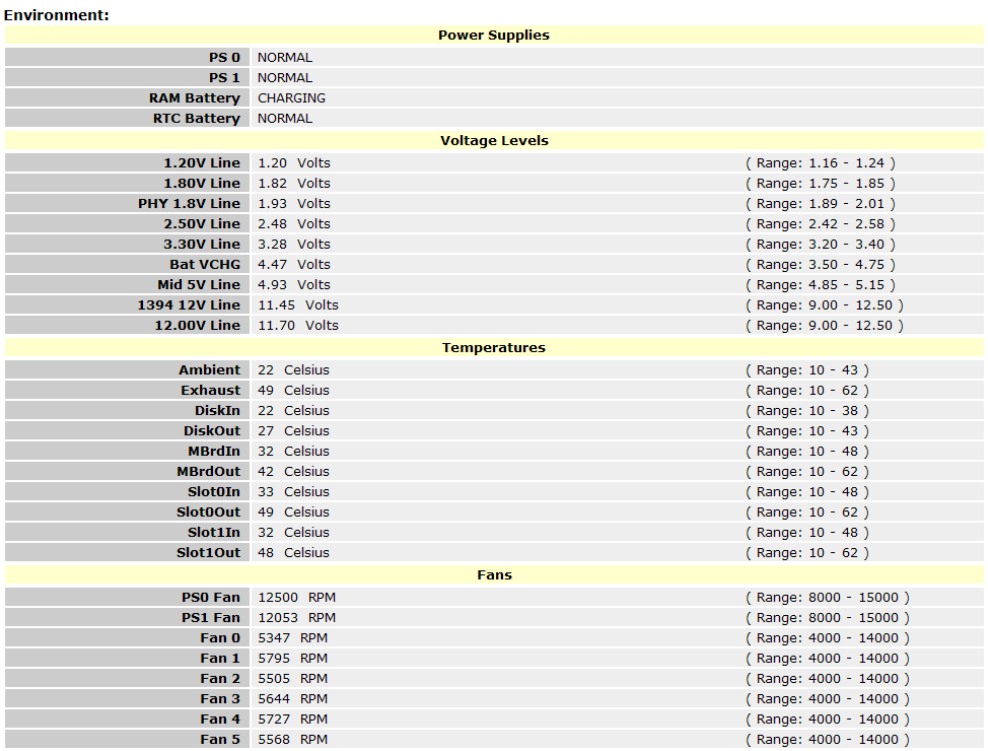
- **Reboot (button)**: Click to reboot the Omneon MediaDeck. Refer to **Rebooting the Omneon MediaDeck** for instructions.

- **Shutdown Filesystem (button)**: Click to shut down the file system.

- **Log Snapshot (button)**: Click to display a snapshot of the Omneon MediaDeck's log, in a separate static window within the Browser. This function is designed for Omneon Technical Support personnel only. Note that this button only appears if you have clicked a single host name (or icon) on the **System** diagram.
- **Edit Track Tags (button)**: Click to add or edit the **Track Tag File** associated with the Omneon MediaDeck. Refer to "Editing Track Tags" in the *Omneon SystemManager User's Guide* for instructions.
- **Upgrade Firmware (button)**: Click to upgrade the Omneon MediaDeck's firmware. Refer to **Upgrading Firmware**.
- **Done (button)**: Click to return to the System Diagram.

Environment

The **Environment** section provides environmental statistics for the Omneon MediaDeck. See **Figure 97**.



Environment:

Power Supplies		
PS 0	NORMAL	
PS 1	NORMAL	
RAM Battery	CHARGING	
RTC Battery	NORMAL	
Voltage Levels		
1.20V Line	1.20 Volts	(Range: 1.16 - 1.24)
1.80V Line	1.82 Volts	(Range: 1.75 - 1.85)
PHY 1.8V Line	1.93 Volts	(Range: 1.89 - 2.01)
2.50V Line	2.48 Volts	(Range: 2.42 - 2.58)
3.30V Line	3.28 Volts	(Range: 3.20 - 3.40)
Bat VCHG	4.47 Volts	(Range: 3.50 - 4.75)
Mid 5V Line	4.93 Volts	(Range: 4.85 - 5.15)
1394 12V Line	11.45 Volts	(Range: 9.00 - 12.50)
12.00V Line	11.70 Volts	(Range: 9.00 - 12.50)
Temperatures		
Ambient	22 Celsius	(Range: 10 - 43)
Exhaust	49 Celsius	(Range: 10 - 62)
DiskIn	22 Celsius	(Range: 10 - 38)
DiskOut	27 Celsius	(Range: 10 - 43)
MBrdIn	32 Celsius	(Range: 10 - 48)
MBrdOut	42 Celsius	(Range: 10 - 62)
Slot0In	33 Celsius	(Range: 10 - 48)
Slot0Out	49 Celsius	(Range: 10 - 62)
Slot1In	32 Celsius	(Range: 10 - 48)
Slot1Out	48 Celsius	(Range: 10 - 62)
Fans		
PS0 Fan	12500 RPM	(Range: 8000 - 15000)
PS1 Fan	12053 RPM	(Range: 8000 - 15000)
Fan 0	5347 RPM	(Range: 4000 - 14000)
Fan 1	5795 RPM	(Range: 4000 - 14000)
Fan 2	5505 RPM	(Range: 4000 - 14000)
Fan 3	5644 RPM	(Range: 4000 - 14000)
Fan 4	5727 RPM	(Range: 4000 - 14000)
Fan 5	5568 RPM	(Range: 4000 - 14000)

Figure 97. Environment Section

Power Supplies

- **PS 0, PS 1**: Describes the state of the indicated power supply.
  - **NORMAL** = the power supply is OK
  - **FAILED-Absent/Unpowered** = the power supply is not delivering power, or is not plugged in.

    - **BAD =** the power supply has a hardware fault and is broken.
- **RAM Battery**: Describes the state of the RAM battery.
    - **NORMAL** = the battery is OK.
    - **CHARGING** = the battery is charging
    - **BAD-Malfunctioning** = the battery is dead or absent.
- **RTC Battery**: Describes the state of the Clock Battery.
    - **NORMAL** = the battery is OK.
    - **BAD-Malfunctioning** = the battery is dead or absent.

Voltage Levels

1.20V Line through 12.00V Line: Displays the combined voltages present on the outputs of the power supply. The values are displayed in volts. The valid ranges are also displayed. Note that these ranges are not user configurable.

Temperatures

NOTE: The values in this section are always displayed in degrees Celsius. The valid ranges are also displayed. Note that the ranges are not user configurable.

- **Ambient:** Displays an approximation of the ambient temperature of the air entering the Omneon MediaDeck.
- **Exhaust**: Displays an approximation of the temperature of the air leaving the Omneon MediaDeck.
- **DiskIn**: Displays the temperature of the air at the front panel of the Omneon MediaDeck
- **DiskOut**: Displays the temperature of the air at the midplane (behind the disk drives) of the Omneon MediaDeck.
- **MBrdIn**: Displays the temperature of the air at the front of the main circuit board of the Omneon MediaDeck.
- **MBrdOut**: Displays the temperature of the air at the rear of the main circuit board of the Omneon MediaDeck.
- **Slot0In**: Displays the temperature of the air at the front of I/O module socket 0 (this socket is located directly above the power supplies).
- **Slot0Out**: Displays the temperature of the air at the rear of I/O module socket 0 (this socket is located directly above the power supplies).
- **Slot1In**: Displays the temperature of the air at the front of I/O module socket 1 (this socket is located directly above the processor module).
- **Slot1Out**: Displays the temperature of the air at the rear of I/O module socket 1 (this socket is located directly above the processor module).

Fans

- **PS0 Fan**, **PS1 Fan**: Lists the speed (in RPM) of the two power supply fans. The valid range is also displayed. Note that this range is not user configurable
- **Fan 0 through Fan 5**: Lists the speed (in RPM) of each of the Omneon MediaDeck fans. The valid range is also displayed. Note that this range is not user configurable.

Changing an Omneon MediaDeck Host Name

Renaming an Omneon MediaDeck may help you locate a particular Omneon MediaDeck host throughout the SystemManager application.

To change an Omneon MediaDeck's host name:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an individual host **Omneon MediaDeck** icon (not the dual host icon) to display the **Physical Configuration** page for the selected Omneon MediaDeck host.
3. Click the Omneon MediaDeck's picture to display the host's **MediaDeck Properties** page.
4. From the **Host Name** field, click the **Change** button to display the **Change MediaDirector Name** page.
5. Type the new name in the text box.

   Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for proper naming conventions.
6. Click **Save** to return to the **MediaDeck Properties** page.

   The new host name now appears in the **System** diagram, in various page titles and in other Omneon MediaDeck-related fields throughout the application.

Changing an Omneon MediaDeck Description

The Omneon MediaDeck description is useful in clarifying a particular Omneon MediaDeck's (or host's) role in your Omneon MediaDeck System.

To change an Omneon MediaDeck's description:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click a dual host or individual host's **Omneon MediaDeck** icon to display the **Physical Configuration** page for the selected Omneon MediaDeck or host.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll down to the **MediaDirector Description** field.
5. Click **Change Desc** to display the **Change MediaDirector Description** page.
6. Type the new description in the text box.

7. Click **Save** to save the description and return to the **MediaDeck Properties** page. The new description appears in the **MediaDirector Description** field.

Changing Omneon MediaDeck Clock Reference VITC Lines

On the **MediaDeck Properties** page, the two "**Clock Reference**" drop-down boxes select the TV lines from which the Omneon MediaDeck reads VITC (Vertical Interval Time Code) on the incoming analog reference signal. For proper operation with selected third party automation applications (or when dubbing between Omneon MediaDecks), the two selections (which default to lines **14** and **16**) must match the VITC lines of the reference black connected to the Omneon MediaDeck.

To change the Omneon MediaDeck's clock reference VITC lines:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll down to the **Clock Ref. VITC Lines** field.
5. Using the two drop-down boxes, choose the two lines on which VITC is carried in the clock reference signal (your house reference) to the Omneon MediaDeck's **REF LOOP** connector.
6. After selecting, wait for a moment while the system checks the reference lines for the presence of VITC.
   - If the label "**VITC Detected**" appears, your choices are correct.
   - If the label "**VITC Not Detected**" appears, the Omneon MediaDeck cannot find VITC on the two selected lines. In this situation, check your VITC generator and verify the line selection, and check the reference connection to the Omneon MediaDeck itself.

Changing the Omneon MediaDeck Time Zone

This procedure allows you to select the international time zone in which your facility is located. This ensures that the "date" stamp on recorded clips is correct, and provides assistance for Omneon Technical Support for remote troubleshooting.

To change the Omneon MediaDeck Time Zone:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll down to the **Time Zone** line.
5. Using the drop-down box, select the time zone in which the Omneon MediaDeck is located.

Changing the Omneon MediaDeck Wink State

Use the following steps to change the Omneon MediaDeck's wink state.

To change the Omneon MediaDeck Wink State:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll to the bottom of the page, and check the **Wink State** line.
5. Change the Omneon MediaDeck's wink state as desired:
   - If **On**, click **Wink Off** to stop winking the Omneon MediaDeck's blue light bar.
   - If **Off**, click **Wink On** to start winking the Omneon MediaDeck's blue light bar.

Changing Daemon Settings

This procedure allows you to enable or disable the daemons for the AFP, Samba, and FTP protocols for each host on your Omneon MediaDeck. Daemon settings provide a layer of security by allowing you to block access to your file system. These settings can also be used to ensure that a host is used exclusively for real-time functionality and not file transfers.

To change the Daemon Settings:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the image of the Omneon MediaDeck to display the **MediaDeck Properties** page.
4. From the **Host Properties** section, next to **Change Settings**, click the **Daemon Settings** button for the desired host. The **Change MediaDirector Host AFP, Samba, and FTP Daemon enable/disable settings** page appears. All daemons are enabled by default.
5. Click the **Enable** or **Disable** check box for the Daemon Setting you wish to change, and then click **Save**.
6. Reboot the Omneon MediaDeck according to the instructions in **Rebooting the Omneon MediaDeck**. In order for Daemon Settings to take effect, the MediaDeck must be rebooted after making any changes.

NOTE: Disabling a Daemon Setting may prevent you from accessing or monitoring your file system with an application such as Windows Explorer or Apple Final Cut Pro.

Rebooting the Omneon MediaDeck

On the **MediaDeck Properties** page, the "reboot" function is a local function that is not associated with the firmware upgrade process. Reboot the Omneon MediaDeck when it is experiencing problems, or if you do not want to reboot the Omneon MediaDeck immediately after a firmware upgrade.

To reboot the Omneon MediaDeck:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll to the bottom of the page and click **Reboot**.
5. When the **Confirmation** dialog appears, click **OK**. The Omneon MediaDeck's status changes to "**Rebooting**," then "**Not Connected**," then "**Configuring**," and finally to "**Connected**." The complete process takes approximately two minutes.

NOTE: You can also reboot one or more Omneon MediaDecks on the Upgrade Firmware page. Refer to **Upgrading Firmware** for details.

Powering Down the Omneon MediaDeck

Before removing power to your Omneon MediaDeck, Omneon recommends that you first stop the file system. Once you reconnect power to your MediaDeck, you must then start the file system again.

To power down the Omneon MediaDeck:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the Omneon MediaDeck's picture to display the **MediaDeck Properties** page.
4. Scroll to the bottom of the **General Properties** section of the page and click **Shutdown Filesystem**.
5. Verify that status shown in the **File System** field changes to **Stopped**.
6. Once you have verified that the file system has stopped, remove power from the Omneon MediaDeck by disconnecting each of its AC cords from their power sources.

   To power your Omneon MediaDeck back on, reconnect the AC cords to their power sources. Once you have powered your Omneon MediaDeck back on, follow the step by step instructions in **Starting the File System** to start your file system and begin using your Omneon MediaDeck.

Viewing a Snapshot of the Omneon MediaDeck Log

The MediaDeck stores log files which can be reviewed at any time using SystemManager. This procedure displays a snapshot of the Omneon MediaDeck's log. This function is used for diagnostic purposes only.

To view a snapshot of the Omneon MediaDeck log:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click an Omneon MediaDeck icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the icon of the Omneon MediaDeck to display the **MediaDeck Properties** page.
4. Scroll to the **General Properties** section of the page and click **Log Snapshot** to display the **View Device Log** page.

Configuring Monitor for Event Logging

In addition to the log files stored on the MediaDeck, Omneon recommends that you also use the Monitor application, installed on the SystemManager platform or client PC, to log activity on the MediaDeck. This way, in the event that the MediaDeck file system is lost, there will still be log files available for diagnostic purposes.

To configure Monitor for event logging:

1. From the SystemManager platform or client PC, navigate to D:\Upgrades\omneon.release-<*release number*>\<*date of release*>\pcapps, and double-click **monitor.exe**. See **Figure 98**.

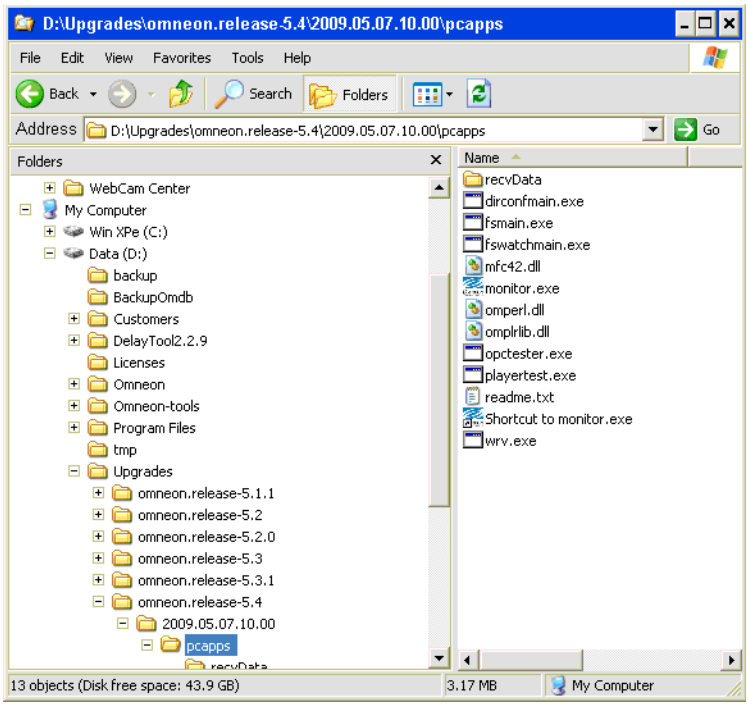


Figure 98. Navigating to Monitor on the SystemManager Platform or client PC

The Monitor application opens.

2. From the Monitor toolbar, click **View**, and then select **Serial Number List**. A list of all the devices connected to the SystemManager appears, as shown in **Figure 99**.

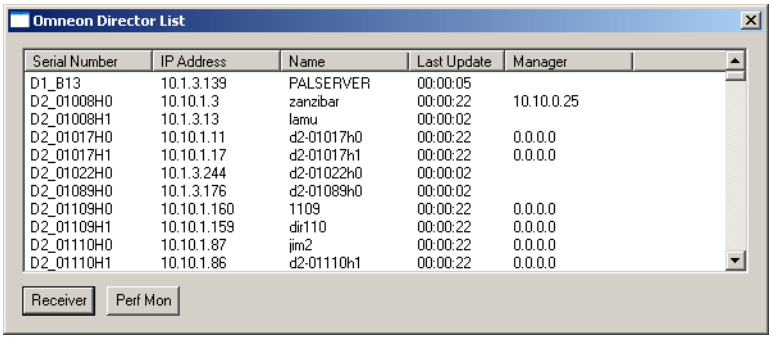


Figure 99. Viewing the Serial Number List

3. Select the MediaDeck that you wish to monitor and click the **Receiver** button. This opens a receiver window for that MediaDeck.

4. To enable logging, from the Monitor toolbar, click **Logging**, and then click **Logging**. The word **(logging)** will appear in the title bar of the receiver window, and if there is activity on the MediaDeck, log messages will begin appearing, as shown in **Figure 100**.

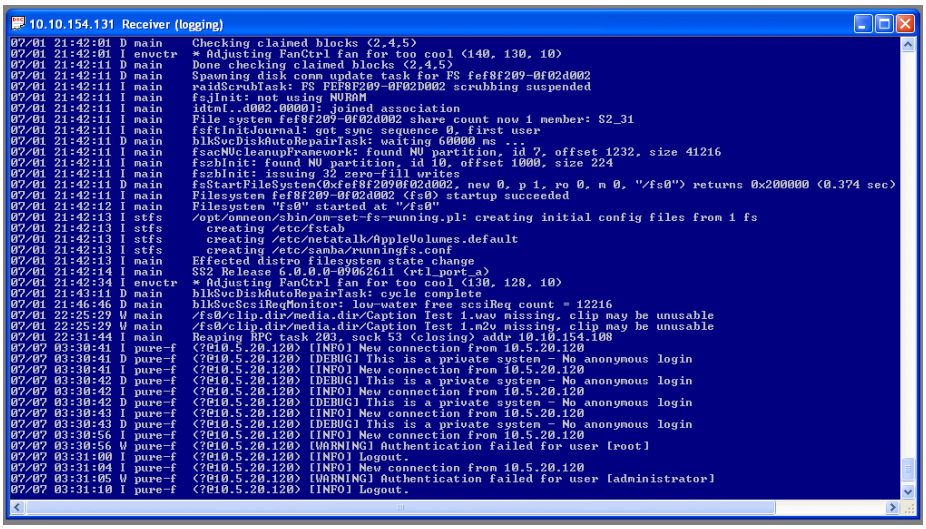


Figure 100. Sample Log Session

5. From the Monitor toolbar, click **Logging**, and then click **Log File Parameters**. This opens a dialog box that allows you to select the maximum size for log files and file system usage. Omneon recommends that you set the following log file parameters: **Max File Size (MBytes)**: **10**, and **Max File System Usage**: **1000**. See **Figure 101**.

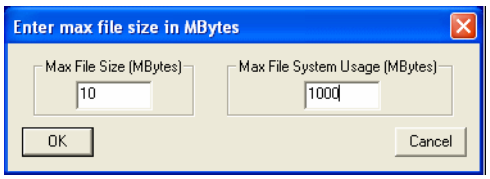


Figure 101. Entering Log File Parameters

The Monitor application can be minimized and left running on your SystemManager platform or client PC. To view log files at any time, from the Monitor toolbar, click **Logging**, and then click **Explore Log Directory**. Log files are labeled by host name.

Replacing Omneon MediaDeck Components

For complete replacement instructions for Omneon MediaDeck components including the bezel, disk drives, power supply, drive cage, I/O modules, processor module, and chassis, refer to the *Omneon MediaDeck Component Replacement Guide* included in your Omneon MediaDeck kit.

Setting IP Addresses through vDHCP

The Internet Protocol (IP) addresses used by Omneon equipment can either be isolated, or part of a customer's existing network. Please note the following important points:

- Consultation with your Information Service (IS) staff or a book on TCP/IP basics is *highly recommended* before this step.
- Because there are security implications, an Internet router might be configured as a firewall to prevent unauthorized access.
- The range of IP addresses assigned to the Ethernet is called an IP *subnet*.

IP address assignment is performed through the **Dynamic Host Configuration Protocol** (DHCP). The Omneon SystemManager Platform runs **Microsoft Windows XP Embedded**. It is preloaded with a third party DHCP server called **vDHCP**. The vDHCP server is installed as a service and starts by default.

If the Omneon equipment is part of an existing network that can provide DHCP service, the third party **vDHCP** server can be turned off. In this case, the customer's network will need to provide the appropriate IP addressing information to the SystemManager and Omneon MediaDeck devices.

Despite the word "Dynamic" in its name, vDHCP should be configured to make the IP addresses as permanent (static) as possible after the initial automatic assignment. This is commonly referred to as IP address "reservation." Setting up an IP address reservation for the Omneon MediaDeck ensures that it obtains the same IP address from the vDHCP server *every time*. Reserving the Omneon MediaDeck's IP address is recommended — but not mandatory.

NOTE: The Omneon MediaDeck includes dual hosts, one for each Ethernet port. Each host must have a unique IP address.

To set up IP address reservations for both Omneon MediaDeck hosts in the vDHCP server:

1. Determine the MediaDeck's IP and Ethernet (or MAC) address(es). To do this, ensure that the MediaDeck is powered on.
2. If the MediaDeck is properly connected within your system and powered on, it has received two addresses from the vDHCP server. To find the IP addresses:
   a. Start the SystemManager application.
   b. Click the **Configuration** tab to display the **Configuration** page.
   c. In the **System** diagram, click a "single" MediaDeck host icon (not the dual host icon) to display the **Physical Configuration** page.
   d. Click the MediaDeck's picture to display the **MediaDeck Properties** page.
   e. At the top of the page, make a note of the selected host's IP address. The vDHCP server has assigned this IP address, but it is a dynamic IP address and not a static or "reserved" one.
   f. Repeat steps **b** through **e** for the additional MediaDecks and/or 2nd MediaDeck host.
3. Launch the vDHCP application by double-clicking the small **vDHCP** icon located in the bottom right corner of the desktop, on the Task Bar.

   The "**vDHCP Settings**" window appears, as shown in **Figure 102**.

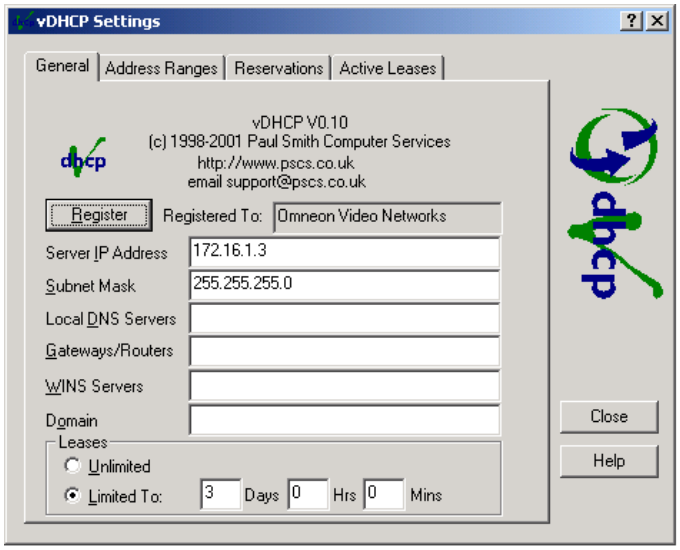


Figure 102. vDHCP Settings — General

4. The Server IP address and Subnet Mask appears automatically. If you are using a Gateway or Router, type the IP address for your Gateway or Router in the **Gateway/Router** field.
5. Click the **Address Ranges** tab.

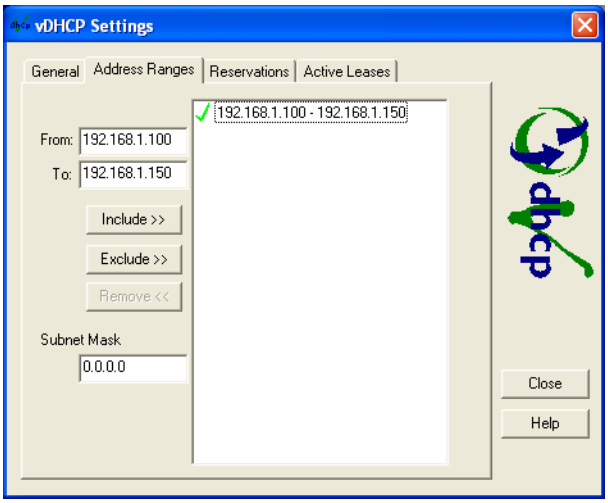


Figure 103. vDHCP Settings — Address Ranges

6. In the **From** and **To** fields, type a valid address range, and then click **Include>>**.
7. Click the "**Active Leases**" tab to display a list of all the IP address leases that have been assigned by the vDHCP server. A sample tab is shown in **Figure 104**.

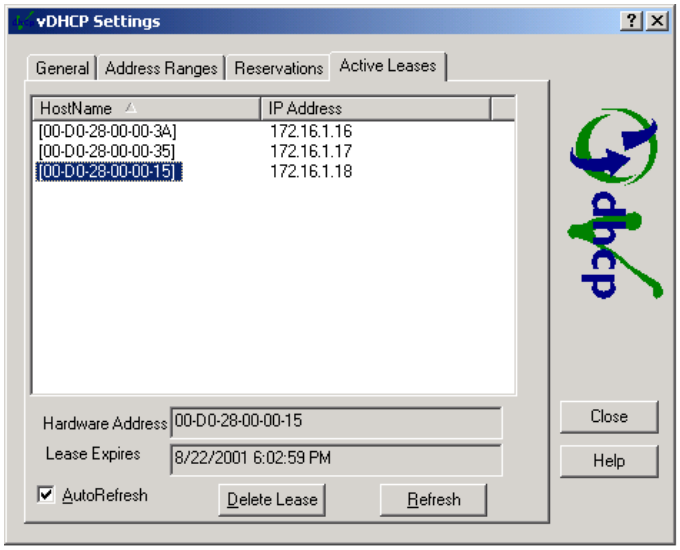


Figure 104. vDHCP Settings — Active Leases

8. In the list, highlight the entry for the first host's IP address. Next, copy (**CTRL+C**) the Ethernet address that appears in the **Hardware Address** field.

   NOTE: It is recommended that you use the host's current IP address for the reservation. If you decide to use another IP address, ensure that the IP address is within the address range specified in the vDHCP UI's "Address Ranges" tab. The range is preceded by a green check mark. In addition, ensure that the IP address that you wish to use does not currently belong to any other device, and that it is not reserved. If required, click the **Help** button on the vDHCP UI for more information about ranges and reservations.

9. Click the **Reservations** tab, a sample of which is shown in **Figure 105**.

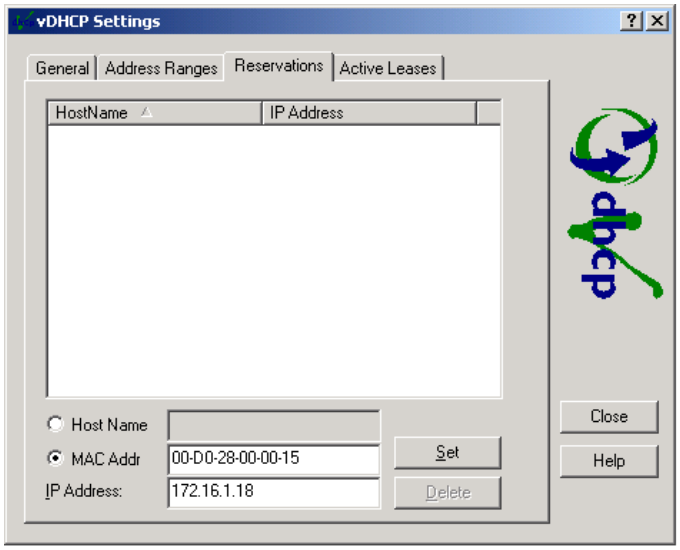


Figure 105. vDHCP Settings — Reservations

At the bottom, click the **Mac Addr** radio button, and paste (**CTRL+V**) in the Ethernet address. Next, click in the **IP Address** field and enter the host's IP address (as you noted in step 2).

IMPORTANT: Check your entries.The Omneon MediaDeck will not function properly if the Ethernet and IP addresses are incorrectly entered.

10. Click the **Set** button to activate the reservation for the selected host.
11. Repeat steps 7 through 10 for the second host.
12. Reboot the Omneon MediaDeck.

    Refer to **Upgrading Firmware** for reboot instructions.
13. As outlined in step 2, navigate to each host's **MediaDeck Properties** page and ensure that the selected host has received the IP address that you just entered on the vDHCP UI's "**Reservations**"

Setting Omneon MediaDeck Static IP Addresses

The **Change IP Settings** page allows you to set static IP addresses for Omneon MediaDeck hosts using the SystemManager.

Omneon strongly recommends DHCP configuration unless static configuration is absolutely necessary. Typically, Omneon MediaDeck hosts receive their IP addresses from the Omneon-supplied vDHCP application that runs on the SystemManager Platform. You may also use your facility's existing DHCP server if available. The host IP addresses are fixed by creating reservations in the DHCP server, which means that they will not change, nor be reissued to another device. The Omneon MediaDeck includes dual hosts, one for each Ethernet port. When planning your IP address allocation, ensure that each Omneon MediaDeck host has two unique IP addresses.

IMPORTANT: The steps in this section are designed for qualified technical personnel, skilled at advanced networking procedures. If you have any questions, please consult with your facility's Information Service staff or contact **Audio Track Types and Media Wrapper Formats**.

CAUTION: When following the procedure below, if you misconfigure any of the IP settings, you risk losing communication with the Omneon MediaDeck; this may require that you contact Omneon Technical Support..

To set static IP addresses of each MediaDeck host:

1. Start the SystemManager application.
2. Click the **Configuration** tab to display the **Configuration** page.
3. In the **System** diagram, click the MediaDeck host icon to display the **Physical Configuration** page.
4. Click the MediaDeck's picture to display the **MediaDeck Properties** page.

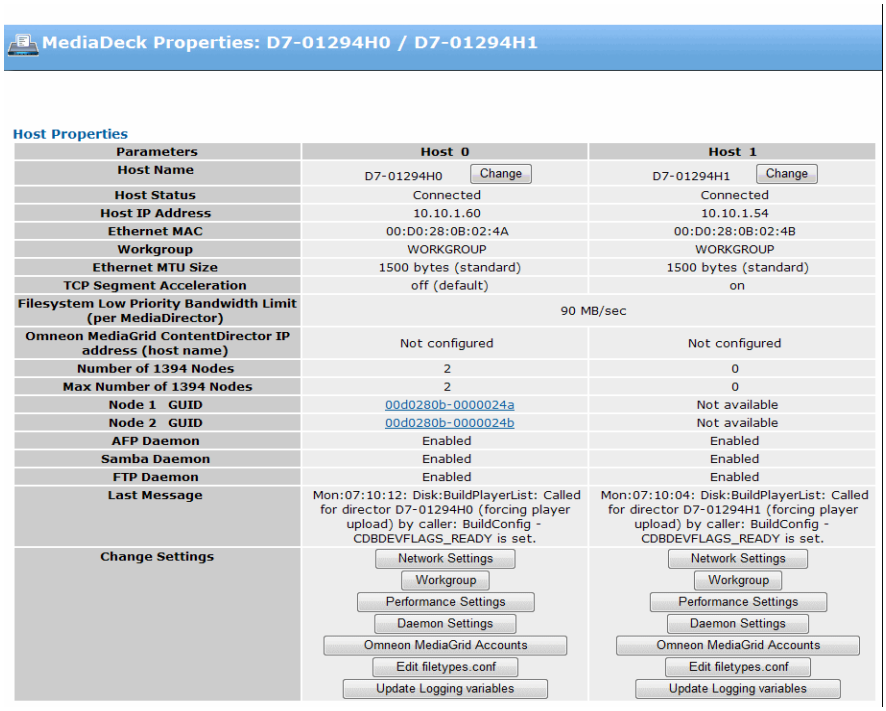


Figure 106. Setting Static IP Addresses

5. In the **Host Properties** section, under **Change Settings**, click the **Network Settings** button for the desired host.

   The selected host's **Network Settings** page appears as shown in **Figure 107**.

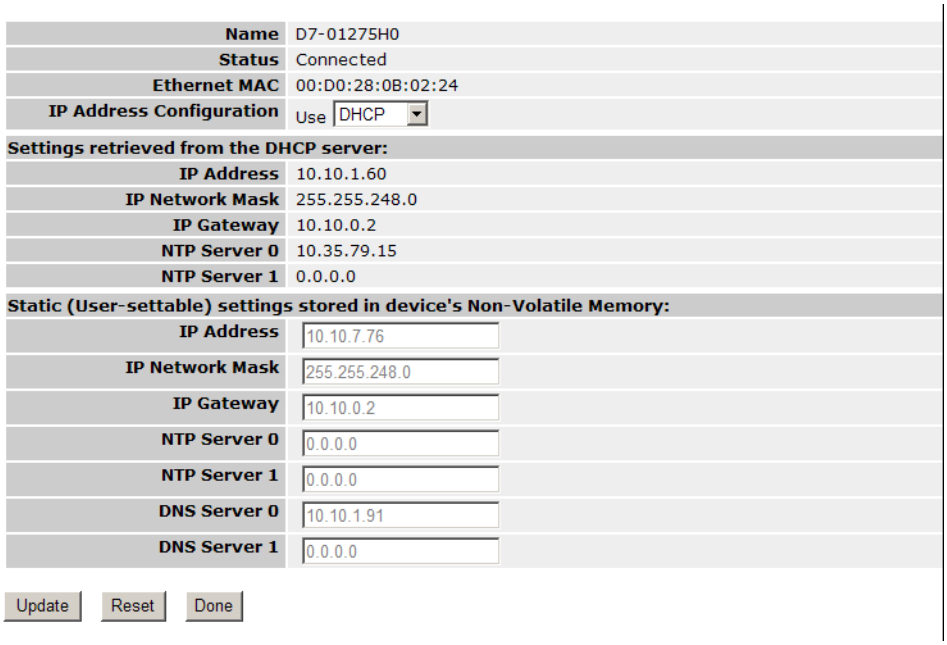


Figure 107. Network Settings Page

6. In the IP Address Configuration pull-down menu, select **Static IP**.

   When **Static IP** is selected, the Omneon MediaDeck uses the IP address that is stored in its non-volatile memory. The non-volatile memory can be set using the fields in the "**Static (User-settable) Settings**" section of the **Change IP Settings** page.

   NOTE: If DHCP is selected, the Omneon MediaDeck looks for a DHCP server on Ethernet and receives its IP address from that. Typically, this is the vDHCP service that is running on the SystemManager platform. This is the default factory configuration. IP values are displayed in the "Settings Retrieved from DHCP Server" section of the Change IP Settings page.

7. Modify the **IP Address**, **IP Network Mask**, and **IP Gateway** fields as desired for the selected host, and depending on the parameters of your local network configuration.

   NOTE: If you selected DHCP in the "IP Address Configuration" drop-down box, these settings are those that apply to the selected Omneon MediaDeck host. These values can be modified by changing setting in the DHCP server, and if you are not using the SystemManager's vDHCP server, see your Network Administrator for assistance.

8. If you have made an error while entering new values, click **Reset** to return all fields on the page to their default state.
9. Click **Update** to enable all changes on the host.
10. Click **Done** to return to the **MediaDeck Properties** page.
11. Repeat steps 2 through 10 for the other Omneon MediaDeck host.
12. Power cycle the Omneon MediaDeck.
13. Ensure that the SystemManager Platform's IP settings permit communication with the new Omneon MediaDeck host settings (the SystemManager must be configured to be on the same subnet as both Omneon MediaDeck hosts).
14. Verify Omneon MediaDeck to SystemManager communication with the new IP settings.

CAUTION: Changing these IP address settings may cause the Omneon MediaDeck to become non-responsive. If this occurs, contact Audio Track Types and Media Wrapper Formats.

NOTE: After changing the Omneon MediaDeck's IP configuration, the SystemManager may display invalid values on the MediaDeck Properties page for five to ten minutes, while it attempts to discover the Omneon MediaDeck at its new IP address. This is expected behavior and the correct values should appear within ten minutes.

Changing Logging Variable Settings

IMPORTANT: Do not change the settings on this page unless directed by Omneon Technical Support.

Logging, or "debug," variables determine which information is included in the MediaDeck log file and enable Omneon Technical Support to troubleshoot issues on a MediaDeck system. The Change Logging Variable Settings page allows you to specify new information to be added to the log file. If

you encounter problems with your MediaDeck system, Omneon Technical Support may ask you to configure this page to help them identify the cause of the issue.

To change logging variable settings:

1. Navigate to the **MediaDeck Properties** page.
2. From the **Change Settings** section, click **Update Logging variables**. The **Change Logging Variable Settings** page appears (see **Figure 108**).

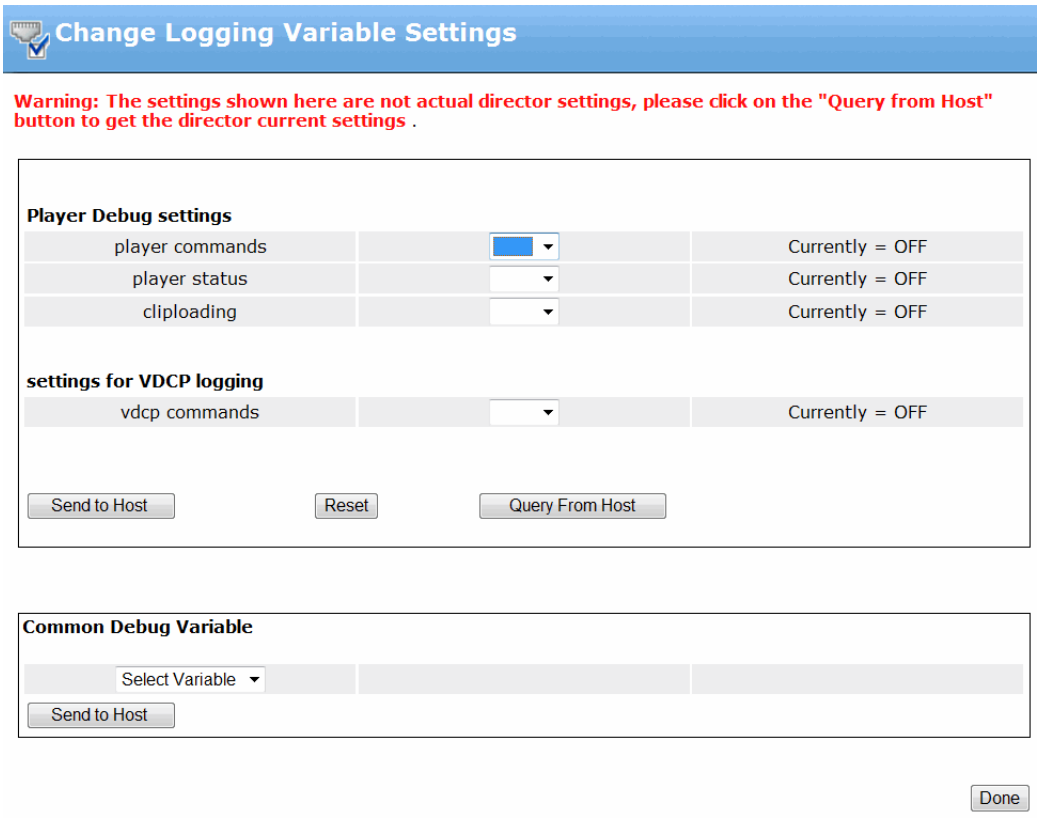


Figure 108. Change Logging Variable Settings

3. Click **Query From Host** to query the logging settings from the host. Once the page refreshes, the current host settings will appear.
4. Modify the following logging settings as instructed by Omneon Technical Support:

   Under **Player Debug settings**:

   - **player commands**: Select **On** to log all player activity.
   - **player status**: Select **On** to log all queries or responses regarding player status.
   - **cliploading**: Select **On** to log all instances of clips being loaded or ejected.

   Under **settings for VDCP logging**:

   - **vdcp commands**: Select **ON** to log all VDCP commands.

5. Click **Send to Host** to send the new settings to the host.
6. Click **Query From Host** and verify that the new settings appear.

   You may click **Reset** at any time to clear the settings on the SystemManager page and query the settings from the host.
7. If instructed by Omneon Technical Support, you may select an option under **Common Debug Variable**. These options may vary. If you are directed to select a variable, Omneon Technical Support will provide the value to enter in the corresponding field.
8. Click **Send to Host** to send the new settings to the host.

Omneon MediaDeck Module Configuration

For complete Omneon MediaDeck Module configuration instructions, refer to the *Omneon SystemManager User's Guide*.

- **Viewing MediaDeck Module Properties**
- **Changing the MediaDeck Module Name**
- **Changing the MediaDeck Module Description**
- **Changing the MediaDeck Module Wink State**
- **Rebooting the MediaDeck Module**
- **Viewing MediaDeck Module Alarms and Events**

Viewing MediaDeck Module Properties

Follow these steps to view MediaDeck Module properties:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click any MediaDeck Module heading (or icon) to reach the **MediaDeck Module Properties** page, shown in **Figure 109**.

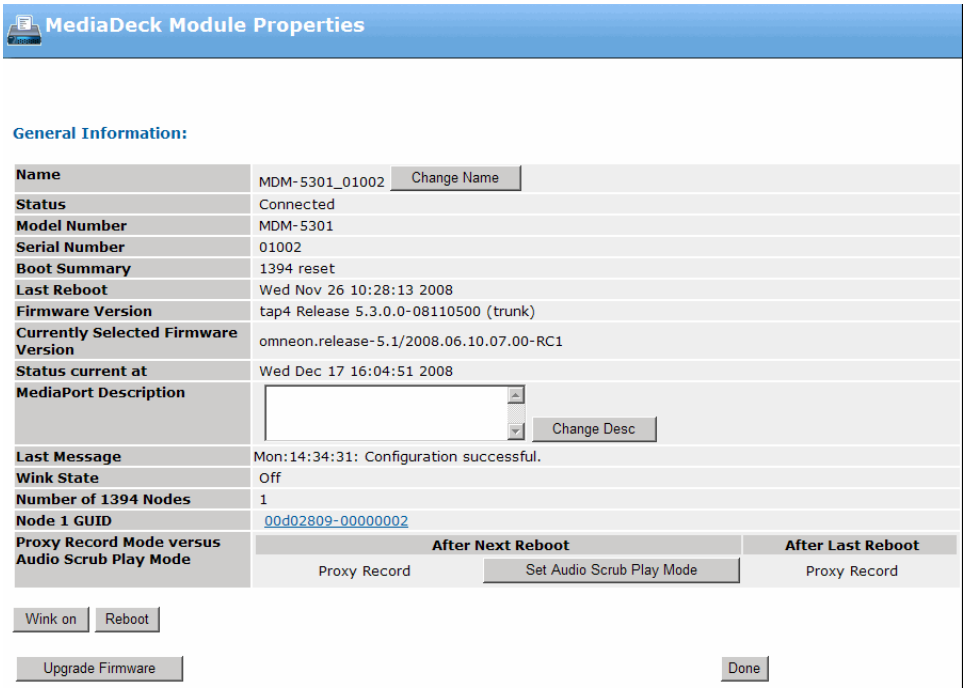


Figure 109. MediaDeck Module Properties

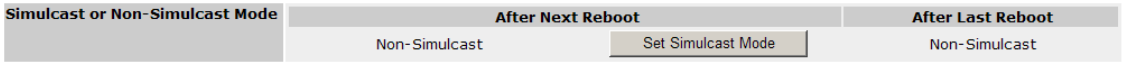
In the **General Information** section you can view:

- **Name**: Displays the user-defined name given to this MediaDeck Module.
- **Change Name**: Click to rename the selected MediaDeck Module. Refer to **Changing the MediaDeck Module Name** for instructions.
- **Status**: Displays the current network status for the selected MediaDeck Module. This field is used primarily for diagnostic troubleshooting.
- **Model Number**: Lists the MediaDeck Module's product model number.
- **Serial Number**: Displays the MediaDeck Module's serial number as set at the factory.
- **Boot Summary**: Displays the reason why the last reboot of the MediaDeck Module occurred.
- **Last Reboot**: Displays the date and time of the last reboot of the MediaDeck Module.
- **Firmware Version**: Lists the current version of firmware that resides in the MediaDeck Module's flash memory.

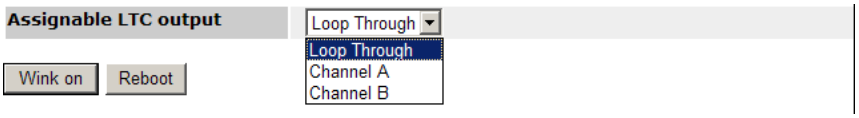
  Refer to **Upgrading MediaDeck Module Firmware.**
- **Currently Selected Firmware Version**: Lists the firmware version that is selected on the **Firmware Version Selection** page.
- **Status current at**: Lists the most recent date and time that the page was refreshed. Note that the page is automatically refreshed every 20 seconds.

- **MediaPort Description**: Displays a scrollable multi-line description of the selected MediaDeck Module. This field is useful for entering data that clarifies the specific MediaDeck Module's role in your system.
- **Change Desc**: Click to change the MediaDeck Module's description. Refer to **Changing the MediaDeck Module Description** for instructions.
- **Last Message**: This line displays the last error message received that deals with file system operation problems, or problems during the periodic file system check.
- **Wink State**: Describes the wink state of the MediaDeck Module's light bar, either **On** or **Off**.

  Refer to the **Wink On/Off** description that follows for details.
- **Number of 1394 Nodes**: For Spectrum systems, lists the number of IEEE 1394 GUID found for this Host.
- **Node GUID**: For Spectrum systems, lists the IEEE 1394 GUID for each of the MediaDirector's nodes. By clicking the hyperlink, the **Node Properties** page appears.
- **Proxy Record Mode versus Audio Scrub Play Mode**: (for the MediaDeck Module 5321, and 5221 only) Displays either **Proxy Record** mode enabled or **Audio Scrub** mode enabled. They cannot both be enabled at the same time. Depending on the current mode, the button will show either **Set Proxy Record Mode** or **Set Audio Scrub Mode**. Click the button to change the status. You must reboot in order for the changes to take affect. For information on recording proxies, refer to **Recording Proxies**. For information on Audio Scrub, refer to **Configuring Audio Scrub**.
- **Simulcast or Non-Simulcast Mode**: (for the MediaDeck Module 5501 only) Displays either **Simulcast** mode or **Non-Simulcast** mode enabled. Click the button to change the status. For information on Simulcast mode, refer to **About Simulcast Mode**.

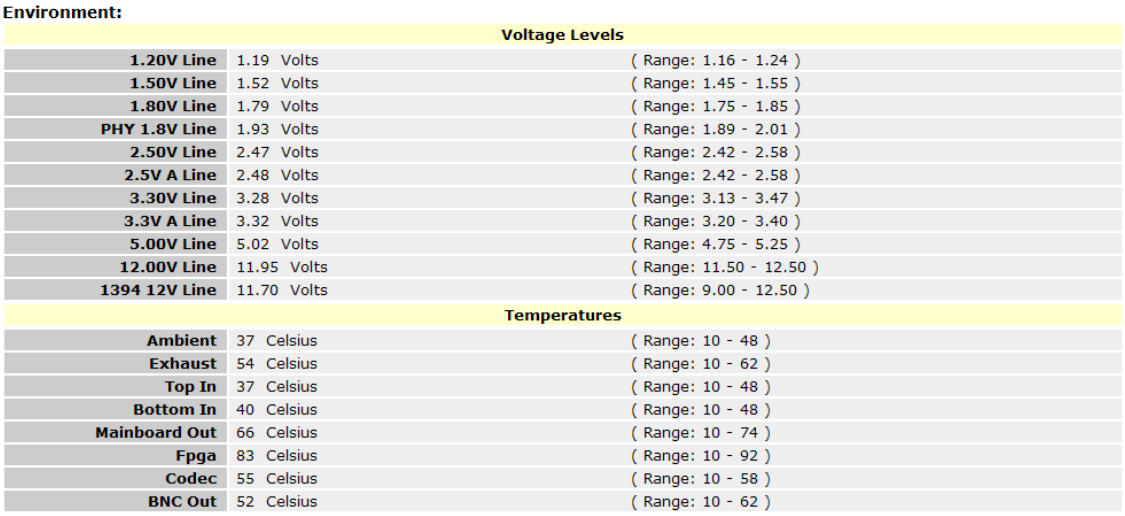


- **Assignable LTC Output**: (for the MediaDeck Module 5320, 5220, 5400, and 5500 series only) Select the channel you wish to use for LTC output, **Channel A**, or **Channel B**, or **Loop Through**.



- **Wink (On/Off)**: Click to change the wink state of the Omneon MediaDeck Module's light bar. Refer to **Changing the MediaDeck Module Wink State** for instructions.
- **Reboot**: Click to reboot this Omneon MediaDeck Module. This function is typically performed after loading new firmware. Refer to **Rebooting the MediaDeck Module** for instructions.
- **Upgrade Firmware**: Click to upgrade the firmware for the MediaDeck Module. See **Upgrading Firmware**.

In the **Environment** section of the **MediaDeck Module Properties** page you can view:



Environment:

Voltage Levels		
1.20V Line	1.19 Volts	(Range: 1.16 - 1.24)
1.50V Line	1.52 Volts	(Range: 1.45 - 1.55)
1.80V Line	1.79 Volts	(Range: 1.75 - 1.85)
PHY 1.8V Line	1.93 Volts	(Range: 1.89 - 2.01)
2.50V Line	2.47 Volts	(Range: 2.42 - 2.58)
2.5V A Line	2.48 Volts	(Range: 2.42 - 2.58)
3.30V Line	3.28 Volts	(Range: 3.13 - 3.47)
3.3V A Line	3.32 Volts	(Range: 3.20 - 3.40)
5.00V Line	5.02 Volts	(Range: 4.75 - 5.25)
12.00V Line	11.95 Volts	(Range: 11.50 - 12.50)
1394 12V Line	11.70 Volts	(Range: 9.00 - 12.50)
Temperatures		
Ambient	37 Celsius	(Range: 10 - 48)
Exhaust	54 Celsius	(Range: 10 - 62)
Top In	37 Celsius	(Range: 10 - 48)
Bottom In	40 Celsius	(Range: 10 - 48)
Mainboard Out	66 Celsius	(Range: 10 - 74)
Fpga	83 Celsius	(Range: 10 - 92)
Codec	55 Celsius	(Range: 10 - 58)
BNC Out	52 Celsius	(Range: 10 - 62)

Figure 110. MediaDeck Module Properties — Environment

Voltage Levels

- **1.2V Line through 1394 12V Line**: Lists the current power supply voltages. This field is used primarily for diagnostic troubleshooting. The valid range is also displayed. Note that this range is not user configurable.

Temperatures

NOTE: The values in this section are always displayed in degrees Celsius. The valid ranges are also displayed. Note that the ranges are not user configurable.

- **Ambient**: Displays the ambient temperature of air entering the Omneon MediaDeck Module.
- **Exhaust**: Displays an approximation of the temperature of the air leaving the Omneon MediaDeck Module.
- **Top In**: Displays the temperature of the incoming air on the top of the MediaDeck Module main board.
- **Bottom In**: Displays the temperature of the incoming air on the bottom of the MediaDeck Module main board.
- **MainBoard Out**: Displays the temperature of the outgoing air at the rear of the MediaDeck Module main board.
- **Fpga**: Displays the temperature of the FPGA device on the MediaDeck Module main board
- **Codec**: Displays an aggregate of the temperatures from the Codec board.
- **BNC Out**: Displays the temperature of the outgoing air from the BNC board.

About Simulcast Mode

Both the MediaDeck Module 5400 and 5500 series are able to play out in simulcast mode, which means they can up-convert and down-convert any mix of SD and HD material to play out simultaneous SD and HD content on a single channel. In simulcast mode, SD video is up-converted to HD SDI video and HD SDI video is down-converted to SD video.

The MediaDeck Module 5400 series operates only in simulcast mode, whereas the MediaDeck Module 5500 series operates in both simulcast mode and non-simulcast mode.

NOTE: Enabling simulcast mode on the MediaDeck Module 5501 reduces the number of playout channels from two to one.

In non-simulcast mode, the module up-converts or down-converts but does not play out simultaneous SD and HD content on a single channel. To switch the MediaDeck Module 5501 from one mode to another, open the **MediaPort Properties** page for the MediaDeck Module 5501 and, in the field for **Simulcast or Non-Simulcast Mode**, click the adjacent button to change the mode**.**

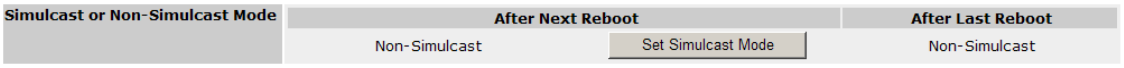


Figure 111. Switching between Simulcast and Non-Simulcast mode

Changing the MediaDeck Module Name

Renaming may help you locate MediaDeck Modules throughout the SystemManager application.

To change the MediaDeck Module name:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click the icon for the MediaDeck Module that you want to rename. Its **MediaDeck Module Properties** page appears.
3. Click **Change Name** to display the **Change MediaPort Name** page.
4. Type the new name in the text box. For proper naming conventions, refer to “About Naming Files and System Elements” in the *Omneon SystemManager User’s Guide.*
5. Click **Save** to return to the **MediaDeck Module Properties** page.

   The new name now appears in the System Diagram, in various page titles, and in other MediaDeck Module-related fields throughout the application.

Changing the MediaDeck Module Description

The MediaDeck Module description is useful in clarifying a particular MediaDeck Module’s role in your Omneon Spectrum System.

To change the MediaDeck Module’s description:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click the icon for the MediaDeck Module whose description you want to change. Its **MediaDeck Module Properties** page appears.
3. Click **Change Desc** to display the **Change MediaPort Description** page.
4. Type the new description in the text box.
5. Click **Save** to save the description and return to the **MediaDeck Module Properties** page. The new description appears in the **MediaPort Description** field.

Changing the MediaDeck Module Wink State

Use the following steps to change the MediaDeck Module's wink state:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click the icon for the MediaDeck Module whose wink state you want to change. Its **MediaDeck Module Properties** page appears.
3. Scroll to the bottom of the page, and check the **Wink State** line.
4. Change the MediaDeck Module's wink state as desired:
   - If currently **On**, click **Wink Off** to stop winking the MediaDeck Module's rear panel status LED.
   - If currently **Off**, click **Wink On** to start winking the MediaDeck Module's rear panel status LED.

Rebooting the MediaDeck Module

Located on the **MediaDeck Module Properties** page, the reboot function is a *local* function that is not associated with the firmware upgrade process. Reboot the MediaDeck Module when it is experiencing problems, or if you do not want to reboot the MediaDeck Module immediately after a firmware upgrade.

To reboot the MediaDeck Module:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click the icon for the MediaDeck Module that you want to reboot. Its **MediaDeck Module Properties** page appears.
3. Scroll to the bottom of the page and click **Reboot**.
4. When the **Confirmation** dialog appears, click **OK**. The MediaDeck Module's status changes to "**Rebooting**," then "**Not Connected**," then "**Configuring**," and finally to "**Connected**." The complete process takes approximately two minutes.

   You can also reboot one or more MediaDeck Modules on the **Upgrade Firmware** page. Refer to **Upgrading MediaDeck Module Firmware.**

Viewing MediaDeck Module Alarms and Events

To view Omneon MediaDeck Module alarms and events:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. Click any MediaDeck Module heading (or icon) to reach the **MediaDeck Module Properties** page.
3. Scroll down to the bottom of the page to view any alarms or events associated with the selected MediaDeck Module as shown in **Figure 112**.

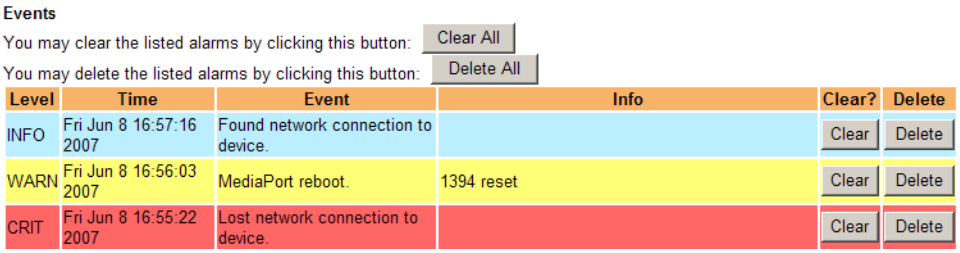


Figure 112. MediaDeck Module Alarms and Events

Omneon MediaDeck Storage Configuration

Choose from the following topics:

- **Viewing Omneon MediaDeck Storage Properties**
- **Changing the MediaStore (MediaDeck Storage) Name**
- **Winking All Drives**
- **Winking One Drive**
- **Viewing Drive Properties**

NOTE: SystemManager sometimes displays MediaDeck Storage information as MediaStore information. There is no separate MediaStore in an Omneon MediaDeck system. Both terms, **MediaDeck Storage** and **MediaStore**, refer to the storage component in an Omneon MediaDeck.

Viewing Omneon MediaDeck Storage Properties

On the **MediaDeck Storage Properties** page you can view properties as well as perform tasks such as labeling the selected Omneon MediaDeck Storage and checking the status of the disks and other components in an enclosure

To view Omneon MediaDeck Storage properties:

1. On the **System** diagram, click any Omneon MediaDeck heading (or icon) to reach the **Physical Configuration** page, shown in **Figure 113**.

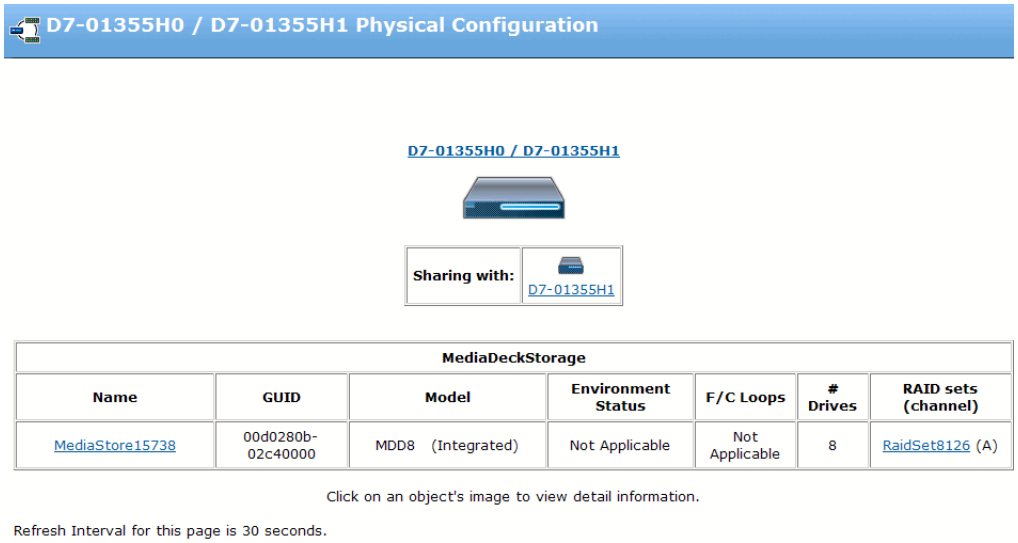


Figure 113. Physical Configuration Page

2. Click the link of the desired MediaStore (Omneon MediaDeck Storage) to display its **MediaDeck Storage Properties** page.

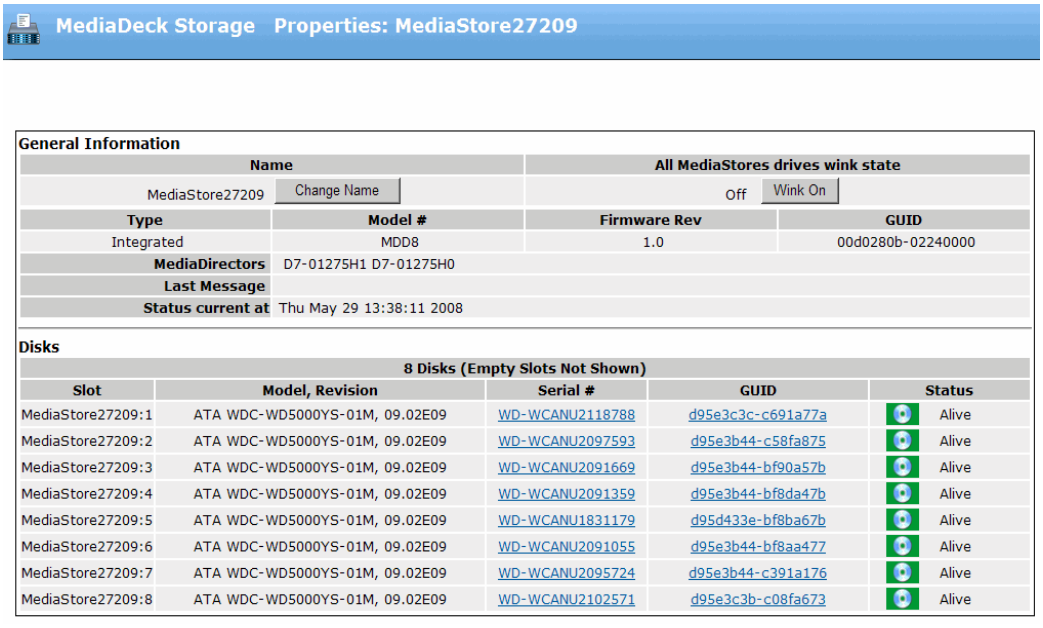


Figure 114. MediaDeck Storage Page

You can view the following properties in the **General Information** section:

- **Name**: Displays a user-definable name given to a physical enclosure.
- **Change Name**: Click to rename an Omneon MediaDeck Storage. Refer to **Viewing Omneon MediaDeck Storage Properties** for instructions.

  All MediaStore drives wink state: Click to change the wink state of all drives on the Omneon MediaDeck Storage. When on, all drive LEDs wink. Refer to **Winking All Drives** for instructions.

  NOTE: Drives that are winked will only wink for 30 seconds.
- **Type**: Indicates the Omneon MediaDeck Storage model type. Current types are MS or MSC models.
- **Model #**: Indicates the Omneon MediaDeck Storage manufacturer's model number.
- **Firmware Rev.**: Lists the firmware level within the Omneon MediaDeck Storage controller unit. This information is used primarily for debugging purposes.
- **GUID**: Displays the Global Unique Identifier for the Omneon MediaDeck Storage. This information is primarily used for debugging purposes.
- **MediaDirectors**: Displays a list of Omneon MediaDecks that are physically connected to the MediaStore.
- **Last Message**: This line displays the last message received that deals with the selected Omneon MediaDeck Storage.
- **Status current at**: Indicates when the currently displayed Omneon MediaDeck Storage enclosure information and status was last obtained.

In the **Disks** section:

- **Slot**: Displays the slot ID, which is the numeric identifier that represents the physical position for each disk drive in the enclosure.
- **Model, Revision**: Displays the manufacturer's model number and firmware revision level for each disk drive in the enclosure.
- **Serial #**: Displays the manufacturer's serial number for each disk drive in the enclosure. Click the serial number hyperlink to access the **Drive Properties** page for the selected drive.
- **GUID**: Displays the Global Unique Identifier for a disk drive in the Omneon MediaDeck Storage. This information is primarily used for debugging purposes.
- **Loop Master**: Displays whether a drive has been upgraded (converted) to the latest drive technology available from Omneon. The following text may appear in this field:
  - **MSC only**: Indicates the particular drive has not been upgraded. As Omneon Spectrum Systems do not support intermixing drives with older drive technology and the latest new technology, drives which are labeled as **MSC only** should undergo the technology conversion process before being mixed with drives which are built on the new technology.
  - **MSC** or **MS**: Indicates the drive has been upgraded to the latest drive technology.
  - **Status**: Displays the current operational status for each disk drive in the enclosure. Click the **Disk Drive** icon to access the **Drive Properties** page for the selected drive

Changing the MediaStore (MediaDeck Storage) Name

Renaming may help you more easily locate MediaDeck Storage throughout the SystemManager application.

To change the MediaDeck Storage name:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. If there is more than one Omneon MediaDeck in your system, make a note of the Omneon MediaDeck to which the specific Omneon MediaDeck Storage is attached. Next, click a single or dual host **Omneon MediaDeck** icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. For the specific MediaStore that you want to change, click its picture to display the **MediaDeck Storage Properties** page.
4. Click **Change Name** to display the **Change MediaStore Name** page.
5. Type the new name in the text box.

   Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for naming conventions.
6. Click **Save** to return to the **MediaDeck Storage Properties** page.

Winking All Drives

Use the following steps to wink all Omneon MediaDeck drives:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. If there is more than one Omneon MediaDeck in your system, make a note of the Omneon MediaDeck to which the specific Omneon MediaDeck Storage is attached. Next, click a single or dual host **Omneon MediaDeck** icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. Click the picture of the MediaStore (Omneon MediaDeck Storage) to display the **MediaDeck Storage Properties** page.
4. At the top of the page, check the **All MediaStore Drives Wink State** line.
5. Change the wink state (for all drives) as desired:
   - If currently **On**, click **Wink Off** to stop winking all drives.
   - If currently **Off**, click **Wink On** to start winking all drives.

NOTE: In order to view the amber status LEDs of the drives being winked, remove the bezel from the front of the Omneon MediaDeck.

Winking One Drive

Use the following steps to wink a single drive:

1. Click the **Configuration** tab to display the **Configuration** page and **System** diagram.
2. If there is more than one Omneon MediaDeck in your system, make a note of the Omneon MediaDeck to which the specific Omneon MediaDeck Storage is attached. Next, click a single or dual host **Omneon MediaDeck** icon to display the **Physical Configuration** page for the selected Omneon MediaDeck.
3. For the specific Omneon MediaDeck Storage whose drives you want to change, click its picture (there may be more than one) to display the **MediaDeck Storage Properties** page.
4. Scroll down to the "**Disks**" section and click the **Serial Number Hyperlink** or the **Disk Drive** icon for the drive that you want to wink. The **Drive Properties** page appears.
   - Click **Wink On** to start winking the individual drive.
   - Click **Wink Off** to stop winking the individual drive.

   In order to view the amber status LED of the drive being winked, remove the bezel from the front of the Omneon MediaDeck.

   NOTE: Drives that are winked will only wink for 30 seconds.

   Refer to **Replacing a Disk Drive (Hot Swapping)** for instructions if drive changes are required.

Viewing Drive Properties

On the **Drive Properties** page you can view general information about a specific drive as well as perform drive-related tasks.

To view drive properties:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page.
3. Click the icon for the Omneon MediaDeck you want to view. The **Disk Utilities** page appears.
4. In the drive list, locate the drive you want to view and click its **Disk Drive** icon to display the **Drive Properties** page (for the selected drive) as shown in **Figure 115**.

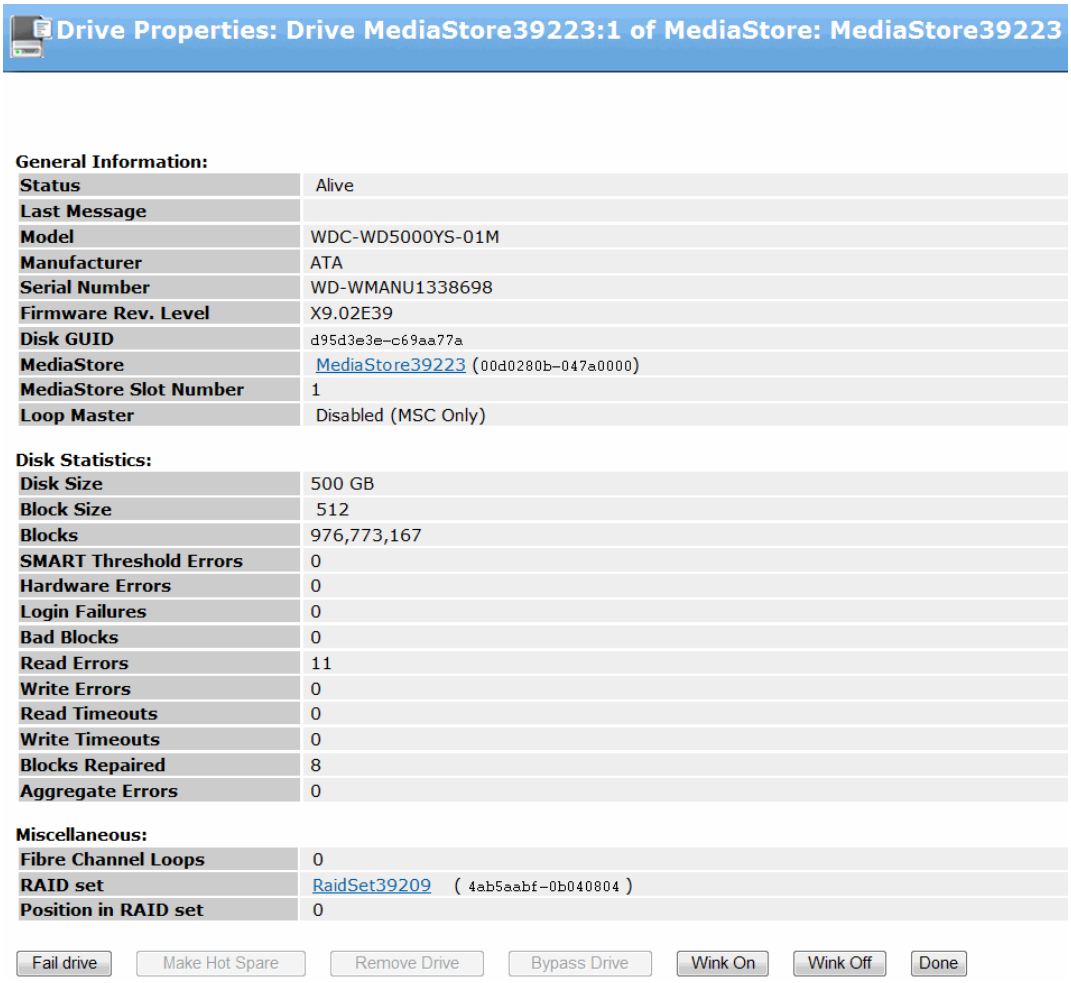


Figure 115. Drive Properties

You can view the following properties:

In the **General Information** section:

- **Status**: Lists the status of the drive: **Alive**, **Dead**, or **Missing**.
- **Last Message**: This line displays the last error message (generated by the SystemManager) that deals with the selected drive.
- **Model**: Lists the model number of the drive.
- **Manufacturer**: Lists the name of the drive's manufacturer.
- **Serial Number**: Lists the serial number of the selected drive.
- **Firmware Rev. Level**: Lists the firmware revision level of the selected drive. Note that drive firmware can be updated from the application.
- **Disk GUID**: Lists the specific GUID (Global Unique Identifier) of the selected drive.

- **MediaStore**: Lists the Omneon MediaDeck Storage in which the selected drive is physically located. Click the hyperlink to jump to the “Properties” page for the MediaDeck Storage.
- **MediaStore Slot Number**: Lists the slot number where the drive is located.
- **Loop Master**: Displays whether a drive has been upgraded (converted) to the latest drive technology available from Omneon. The following text may appear in this field:
  - **Enabled (MS and MSC)**: Indicates the drive has been upgraded to the latest drive technology.
  - **Disabled (MSC Only)**: Indicates the particular drive has not been upgraded. As Omneon Spectrum Systems do not support intermixing drives with older drive technology and the latest new technology, drives which are labeled as **MSC only** should undergo the technology conversion process before being mixed with drives which are built on the new technology.

In the **Disk Statistics** section:

- **Disk Size**: Shows the disk size (in GB) of the selected drive.
- **Block Size**: Displays the block size of the selected drive.
- **Blocks**: Shows the number of blocks on the selected drive.
- **SMART Threshold Errors**: Shows the number of SMART warnings. This value is not affected by bad block repairs or disk reformatting. If this value is greater than zero, the SystemManager displays a **Critical** level alarm (red) and the drive should be replaced as soon as possible.
- **Hardware Errors**: Shows the number of hardware errors reported. This value is not affected by bad block repairs or disk reformatting. If this value is greater than zero, the SystemManager displays a **Critical** level alarm (red) and the drive should be replaced as soon as possible.
- **Login Failures**: Shows the persistent number of login failures detected. This value is not affected by bad block repairs or disk reformatting. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (orange).
- **Bad Blocks**: Shows the total number of bad blocks. This value increases whenever a new bad block is detected and decreases when bad blocks are repaired. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (orange).
- **Read Errors**: Shows the total number of read errors that have occurred on this drive. This number is not reset by repairing bad blocks, but is reset by reformatting the disk. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (orange).
- **Write Errors**: Shows the total number of write errors that have occurred on this drive. This number is not reset by repairing bad blocks, but is reset by reformatting the disk. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (orange).
- **Read Timeouts**: Shows the total number of read timeouts that have occurred on this drive. This number is not reset by repairing bad blocks, but is reset by reformatting the disk. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (Orange).
- **Write Timeouts**: Shows the total number of write timeouts that have occurred on this drive. This number is not reset by repairing bad blocks, but is reset by reformatting the disk. If this value is greater than zero, the SystemManager displays a **Failure** level alarm (orange).

- **Blocks Repaired**: Shows the number of bad blocks that have been repaired. This number increases when bad blocks are repaired, and is reset when the disk is reformatted.
- **Aggregate Errors**: Shows the number of errors represented by the current bad block list. This number decreases if bad blocks are repaired, and is cleared if the disk is reformatted.

In the **Miscellaneous** section:

- **Fibre Channel Loops**: (Not applicable to MediaDeck.) Lists the individual Fibre Channel loops available.
- **RAID set**: Click the **RAID Set** hyperlink to access the **RAID Utilities** page.
- **Position in RAID set**: Lists the location of the selected drive in relation to the RAID set. If there were eight drives in a RAID set, the first drive would be in position 0 (zero). The positions of all drives in the RAID set are shown on the **Disk Utilities** page.

At the bottom of the page:

- **Fail Drive**: Click to fail the selected drive, and change its status to "Dead, Failed." If you suspect that a drive is faulty, you can fail it, remove it from the enclosure and replace it with a new drive, whereupon "rebuild" begins automatically. When you fail a drive, the **Unfail Drive** button appears. This allows you to return a failed drive to service without performing a rebuild. The file system does not need be stopped for either procedure. Refer to **Failing a Drive** and **Unfailing a Drive** for instructions.

CAUTION: Failing a drive is a drastic measure that should only be performed by qualified service personnel. It is important to note that sometimes you cannot unfail a failed drive

- **Remove Drive**: When a drive is dead and has been removed from the system, the drive's information still remains on the **Disk Utilities** page and in the database. Click **Remove Drive** to remove the drive from the associated Omneon MediaDeck and from both the **Disk Utilities** page and the database. Note that this button only appears if the drive is dead. Refer to **Removing Drives from a RAID Set** for instructions.
- **Bypass Drive**: Click to bypass a disk drive before attempting to remove the drive. Once a drive is bypassed it should then be removed promptly to maintain correct SES functionality.

  Refer to **Replacing a Disk Drive (Hot Swapping)** for detailed instructions on how to safely replace a disk drive.
- **Wink On**: Click to wink the selected drive. When on, the LEDs for the selected drive wink on the front panel of the MediaDeck.
- **Wink Off**: Click to stop winking the selected drive.
- **Done**: Click to save any changes and return to the **Disk Utilities** page.

Omneon MediaDeck File System Configuration

Choose from the following topics:

Navigating the Disk Utilities page

To reach the **Disk Utilities** page (and all associated linked pages) for a particular Omneon MediaDeck, follow these steps:

1. Click the **Configuration** tab.
2. Click the **Disk Utilities** icon in the left-hand column to display the **Disk Utilities** page, a sample of which is shown below. This page provides a list of all Omneon MediaDecks attached to the SystemManager.

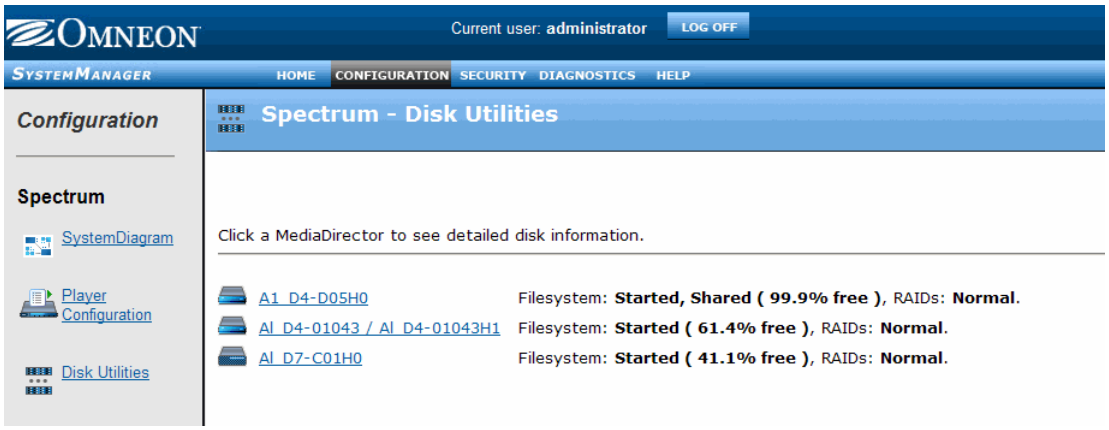


Figure 116. Disk Utilities Page

3. Click an **Omneon MediaDeck** icon to show the **Disk Utilities** page for that Omneon MediaDeck alone. Note that this page applies to both hosts, because disks are shared between hosts.

Viewing RAID Set Information

On the **RAID Utilities** page you can view general information about a particular RAID set and also perform a variety of tasks including changing the RAID set's name, adding and removing drives from the RAID set, and manually starting a "rebuild."

To view RAID set information:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks appears.
3. Click the icon for the Omneon MediaDeck whose RAID set information you want to view. The **Disk Utilities** page for that Omneon MediaDeck appears.
4. Click the **RAID Set** icon (or the **RAID Set Hyperlink**) for the RAID set about which you want information. The **RAID Utilities** page displays (see **Figure 117**).

   In the **Information** section you can view the following:

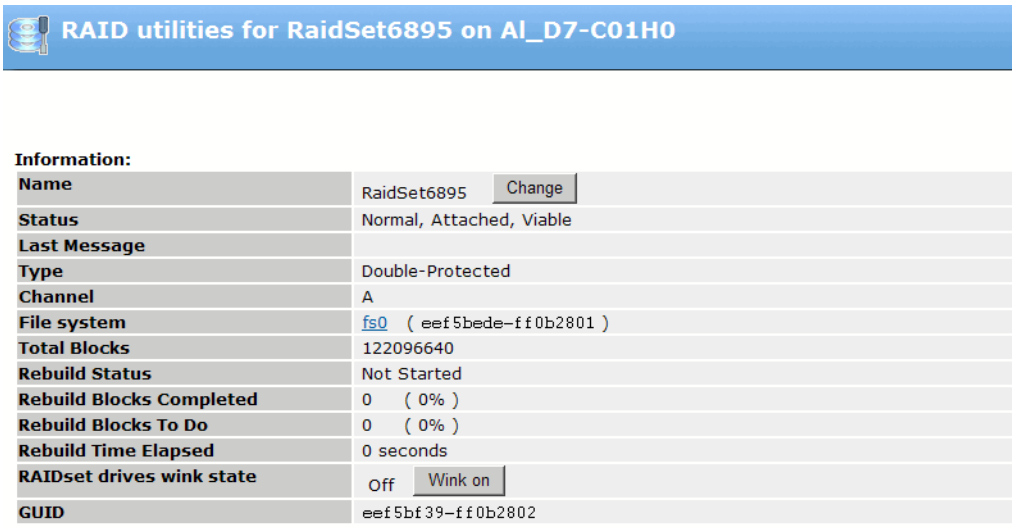


Figure 117. RAID Utilities Page

- **Name**: Click to rename a RAID set. Refer to **Renaming a RAID Set** for instructions.
- **Status**: Displays the current status of the selected RAID set.
- **Last Message**: This line displays the last error message (generated by the SystemManager) that deals with the selected RAID set.
- **Type**: Lists whether or not the RAID set is protected or un-protected.
- **Channel**: Lists the virtual channel that the RAID set is using. The default is channel A.
- **Filesystem**: Click the **Filesystem** hyperlink to access the **Filesystem Utilities** page for the selected RAID set.
- **Total Blocks**: Lists the total number of blocks of all drives in the RAID set.
  - **Rebuild Status**: Displays whether or not a “rebuild” has been started.
  - **Rebuild Blocks Completed**: Lists the number of completed blocks in the rebuild.
  - **Rebuild Blocks To Do**: Lists the number of blocks left to be rebuilt.
  - **Rebuild Time Elapsed**: Displays the running time of the rebuild process.
  - **RAID set drives wink state**: Click to change the wink state of all drives in the RAID set. When on, the LEDs on each drive in the RAID set wink.

    Refer to **Changing RAID Set Wink State** for instructions.
  - **GUID**: Displays the GUID of the complete RAID set.

In the **RAID Set Drive** section you can view:

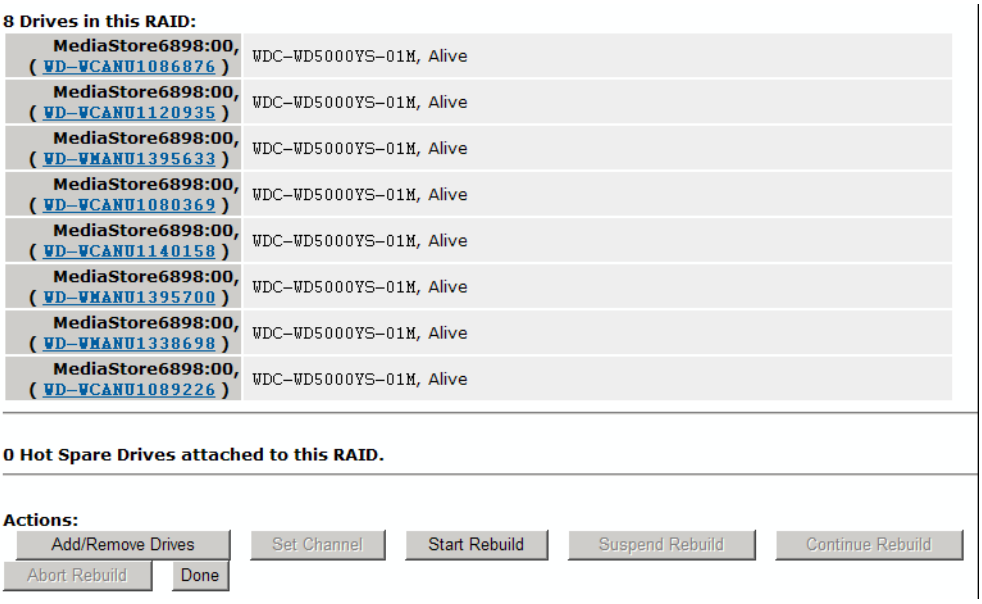


Figure 118. Viewing the RAID Set

- **Drive ID List**: Lists the MediaStore (Omneon MediaDeck Storage) name in which the RAID set lives, and the position of each drive in the Omneon MediaDeck.
- **Drive Serial Number**: Click the Drive Serial Number hyperlink to access the **Drive Properties** page for the selected drive.
- **Add**/**Remove Drives**: Click to add or remove drives from the selected RAID set.
- **Start Rebuild**: Click to manually start a “rebuild” after a drive failure has occurred, or after a drive has been replaced. Refer to **Restarting a RAID Set Rebuild** for instructions.
- **Done**: Click to save any changes on the **RAID Utilities** page and return to the **Disk Utilities** page.

Viewing General File System Information

On the **Filesystem Utilities** page you can view general information about an Omneon MediaDeck’s file system as well as perform a variety of tasks including starting and stopping the file system.

To view general file system information:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks appears.
3. Click the icon for the Omneon MediaDeck which you want to view. The **Disk Utilities** page for that Omneon MediaDeck appears.
4. Click the **Filesystem Hyperlink**.

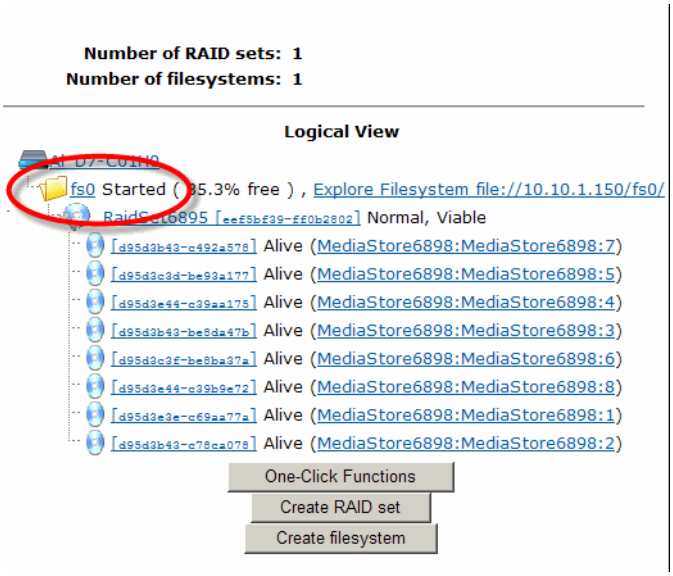


Figure 119. Viewing File System Information

5. **The Filesystem Utilities** page is displayed (shown below).

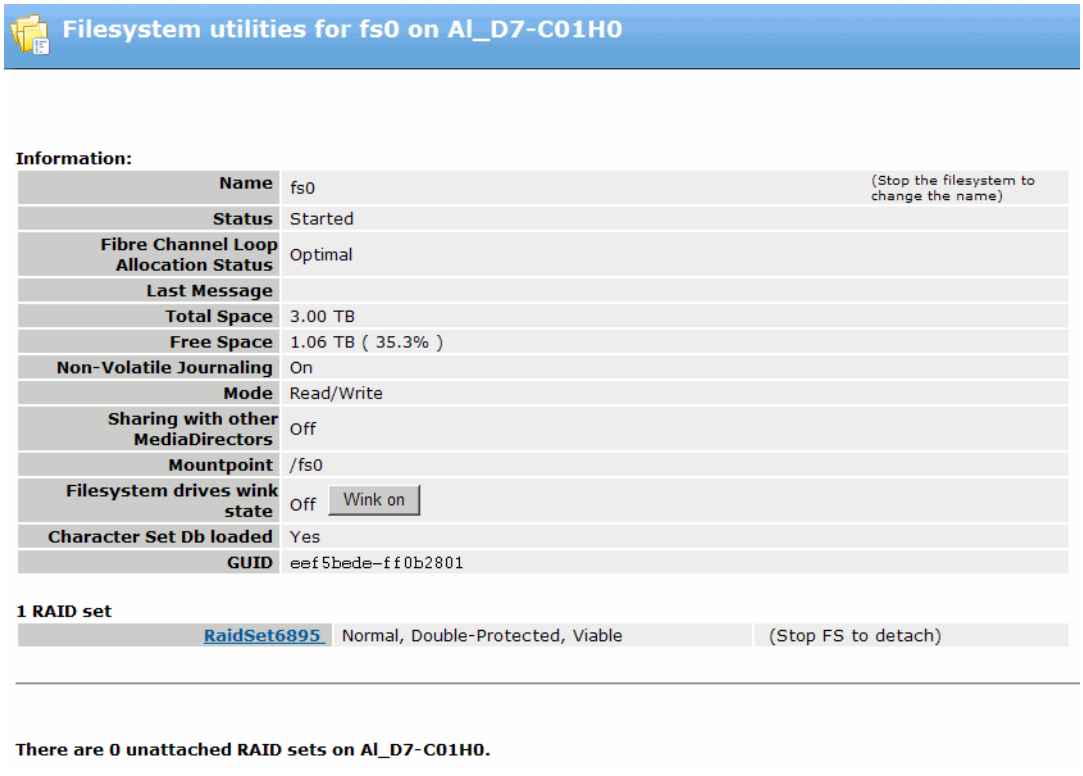


Figure 120. File System Utilities Page

You can view the following information in the **Information** section:

- **Name**: Lists the file system's name.
- **Status**: Displays whether the file system is "Started" or "Not Started."
- **Fibre Channel Loop Allocation Status**: (Not applicable to MediaDeck.) Indicates the status of Fibre Channel wiring between MediaDirectors and MediaStores.
- **Last Message**: This line displays the last error message (generated by the SystemManager) that deals with the selected file system.
- **Total Space**: Lists the total amount of space on your file system.
- **Free Space**: Lists the amount of space remaining to which you can record.
- **Non-Volatile Journaling**: When **On**, indicates that the Omneon MediaDeck is storing information about this file system in non-volatile memory. When a power failure occurs, information will not be lost. When **Off**, the Omneon MediaDeck is not storing information about the system. This option is selected on the **Initialize Filesystem** page or the **Start Filesystem** page. Only one filesystem may have this property turned on.

  Refer to **Initializing a File System** and **Creating a File System** for additional instructions.
- **Mode**: Displays if the file system is read only or read/write.
- **Sharing with Other Omneon MediaDirectors**: Not applicable to MediaDeck.
- **Mountpoint**: Lists the file system's mounting point — the directory name and location where the file system appears. A primary file system is always mounted at "/filesysname", meaning that it appears at the root of the directory name space with its own name.
- **Filesystem Drives Wink State**: Click to change the wink state of all drives in the file system. When on, the LEDs on each drive in the file system will wink.

  Refer to **Changing File System Wink State** for instructions.
- **Character Set DB Loaded**: Indicates whether the file necessary for Unicode conversion is loaded on the file system. If the status is **Yes**, the file needed for Unicode conversion is available to the file system. If the status is **No**, the file needed for Unicode is missing and no conversion can take place.

  Refer to "Upgrading an Omneon MediaDirector for Unicode Support" in the *Omneon SystemManager User's Guide* for information on loading the necessary file for Unicode conversion.
- **GUID**: Lists the file system's GUID (Global Unique Identifier).

You can view the following information in the **RAID Set** section:

- **RAID Set**: Click the RAID Set hyperlink to access the **RAID Utilities** page.
- **Stop FS** / **Start FS**: Click to start/stop the file system, to make changes to the RAID sets.

  Refer to **Stopping the File System** and **Starting the File System** sections for instructions.
- **Done**: Click to save any changes and return to the **Disk Utilities** page.

Failing a Drive

Use this procedure to remove a drive from a RAID set, when the drive is experiencing a loss of data. This step is performed as a prerequisite to removing the drive from the chassis and then replacing it with a new drive, at which time the RAID set "rebuild" occurs automatically (provided that the new drive is formatted).

To fail a drive:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to fail a drive. The **Disk Utilities** page for the Omneon MediaDeck appears.
4. Click the **Disk Drive** icon (or the **Disk Drive** hyperlink) to display the **Drive Properties** page (for the selected drive).
5. At the bottom of the page, click **Fail Drive**.
6. When the confirmation dialog appears, click **OK** to accept.

   The drive status now appears as "**Dead**" on the **Disk Utilities** page. Continue the procedure by replacing the drive.

   Refer to **Replacing a Disk Drive (Hot Swapping)** for instructions.

Unfailing a Drive

Use the "unfail" procedure if you accidentally fail the wrong drive. The procedure "might" work to restore the drive to service. Perform this process only on drives that have been manually failed. Drives that have been declared "**Dead**" by the Omneon MediaDeck, however, cannot be un-failed.

To unfail a drive:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to "unfail" a drive. The **Disk Utilities** page for the Omneon MediaDeck appears.
4. Click the **Disk Drive** icon (or the **Disk Drive Hyperlink**) to display the **Drive Properties** page (for the selected drive).
5. At the bottom of the page, click **Unfail Drive**.

   On the **Disk Utilities** page, the drive's status should now appear as "**Alive**." If it does not (if the status remains "**Dead**"), contact Omneon Technical Support or replace the failed drive. Refer to **Replacing a Disk Drive (Hot Swapping)** for instructions.

Creating a RAID Set

NOTE: This procedure is used when creating a file system manually and is provided for reference only. The "One-Click" file system feature performs this procedure automatically. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to create an empty RAID set, to which drives can then be attached.

To create a RAID set:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks appears.
3. Click the icon for the Omneon MediaDeck on which you want to create a RAID set. Its **Disk Utilities** page appears.
4. Click **Create RAID Set** to access the **Create RAID Set** page.
5. Type name of the RAID set in the **Name** field, and select a type:

   Select **Protected** to create a RAID set with a parity drive that stores redundancy information. This is the default selection.
6. Click **Create RAID** to return to the **Disk Utilities** page. The new RAID set appears without any drives attached.

Deleting a RAID Set

NOTE: This procedure is used when deleting a file system manually, and is provided for reference only. It is recommended that you use the "One-Click" file system feature, which performs this procedure automatically. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to delete a RAID set, typically, when the wrong drives have been attached. This procedure is preferable to *removing* drives from a RAID set.

To delete a RAID set:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to delete a RAID set. Its **Disk Utilities** page appears.
4. Verify that the RAID set is not attached to a file system. If it is, remove the RAID set from the file system. See **Removing a RAID Set from a File System** for details.

   When the RAID set is not attached to a file system, the **Delete** button appears next to the **RAID Set** icon.

5. Click the **Delete** button to delete the RAID set. In the **Confirmation** dialog, click **OK**. The RAID set disappears from the **Disk Utilities** page. As required, create a new RAID set. Refer to **Creating a RAID Set** for instructions.

Adding Drives to a RAID Set

NOTE: The "One-Click" file system feature performs this procedure automatically. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

CAUTION: Proceed with caution through this procedure as it is possible to add drives to a RAID set from a different Omneon MediaDeck than the one intended.

Use this procedure to add drives to a RAID set. A RAID set can contain from four (minimum) to nine (maximum) drives.

To add drives to a RAID set:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which the new RAID set resides — the one for which you want to add drives. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **RAID Set** icon to display the **RAID Set Utilities** page.
5. Scroll to the bottom of the page and click the **Add/Remove Drives** button to access the **Add/Remove Drives** page. The **Add/Remove Drives** page lists the status of the RAID set, and lists all available drives in your Omneon MediaDeck.
6. In the "**Available Drives**" section, make a note of the drive slot numbers and MediaStore names. Note the **Check Box** adjacent to all available drives.
7. Check the drives that you wish to attach to the RAID set. Continue until all desired drives are checked, and then click the **Add Selected Drives** button. The selected drives are now removed from the "**Available Drives**" section and added to the "**Current Drives**" section.

   NOTE: Keep in mind that when adding a drive to an existing RAID set, the drive with the smallest capacity in the RAID set dictates the capacity of the other drives within that RAID set.

8. Click **Done** to return to the **RAID Set Utilities** page. The drives that you selected will now be listed in the drive list.
9. If desired, verify that the correct drives have been assigned to the RAID set by clicking **Wink On**. Clicking **Wink Off** may then disable the wink function.
10. Click **Done** to return to the **Disk Utilities** page.

Removing Drives from a RAID Set

CAUTION: Removing a disk drive from a running Omneon MediaDeck may generate noise which will disrupt playback or recording of video for a few moments. In order to avoid disruption, disk drives should be bypassed before removing them from the Omneon MediaDeck. Once a disk drive has been bypassed, it cannot be used again. Only bypassed disks that have *failed* can be returned to Omneon.

This procedure is used to remove drives from a RAID set. However, when you perform the procedure, a "hole" is left in the RAID set that cannot be filled. If you have added the wrong drives to a RAID set, it is recommended that you delete the RAID set and start again.

To remove a drive from a RAID set:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which the RAID set resides — the one from which you want to remove drives. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **RAID Set** icon to display the **RAID Set Utilities** page.
5. Scroll to the bottom of the page and click the **Add/Remove Drives** button to access the **Add/Remove Drives** page. The **Add/Remove Drives** page lists the status of the RAID set, and lists all available drives and hot spares connected to your Omneon MediaDeck.
6. Click the **Remove** button adjacent to the drive that you wish to remove from the RAID set. Continue until all desired drives are removed from the RAID set. Once removed, the drive jumps down to the "**Available Drives**" section.
7. When all desired drives are removed, click **Done** to return to the **RAID Set Utilities** page. In the table, the labels "**Unknown**" and "**Removed**" will appear for each removed drive.
8. Click **Done** to return to the **Disk Utilities** page.

Creating a File System

NOTE: This procedure is provided for reference only. The "One-Click" file system feature creates a file system automatically, and is the recommended method for the Omneon MediaDeck. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to create an empty file system to which RAID sets can be attached.

To create a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to create a new file system. The Omneon MediaDeck's **Disk Utilities** page appears.

4. Click the **Create Filesystem** button to display the **Create Filesystem** page.
5. Enter a name for the new file system, with a maximum of eight characters.

   Refer to "About Naming Files and System Elements" in the *Omneon SystemManager User's Guide* for proper naming conventions.
6. Click **Create Filesystem**.

   The system automatically returns to the **Disk Utilities** page. Verify that a new folder appears with name of the new file system adjacent to it.

Initializing a File System

NOTE: This procedure is provided for reference only. The "One-Click" file system feature performs this procedure automatically, and is the recommended method for the Omneon MediaDeck. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

This procedure initializes and starts an existing file system. Use this procedure to complete the creation phase of the file system. Perform this procedure the very first time that you want to use the file system. Afterwards, the next time the file system needs to be started, use the "**Start FS**" procedure. It must not be initialized again. Refer to **Starting the File System** for instructions.

IMPORTANT: All content on all RAID sets that are attached to the file system will be erased.

To initialize a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks appears.
3. Click the icon for the Omneon MediaDeck on which you want to initialize a file system. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Verify that the file system has been created, and that at least one RAID set is attached to it.
5. Click the **Filesystem Hyperlink** to display the **Filesystem Utilities** page.
6. Reboot the system.
7. At the bottom of the page, click the **Initialize FS** button to display the **Initialize Filesystem** page. This button only appears when the file system is stopped.
8. Select the desired file system options: **NVRAM Journaling**, **Read-only**, **Use Previous Start**, and **Save Options**.

   NOTE: In most cases, you should not need to change the options away from the default selections.
9. Click **Initialize** to accept the selected options and initialize (and start) the file system. The system automatically returns to the **Filesystem Utilities** page.
10. Verify that the file system's status has changed to "**Started**."
11. Click **Done** to return to the **Disk Utilities** page.

NOTE: If the file system does not start automatically, attempt to start the File System manually using the SystemManager. The file system must be started manually when a new Omneon MediaDeck is connected to a pre-existing file system.

Deleting a File System

NOTE: This procedure is provided for reference only. The “One-Click” file system feature performs this procedure automatically, and is the recommended method for the Omneon MediaDeck. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to delete a file system, for example, when it is no longer needed or when a file system has been created accidentally.

To delete a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to delete an existing file system. The Omneon MediaDeck’s **Disk Utilities** page appears.
4. Verify that there are no RAID sets attached to the file system. If there are, follow the procedures for removing a RAID set from a file system.

   Refer to **Removing a RAID Set from a File System** for instructions.
5. With all RAID sets removed, click the **Delete** button adjacent to the **Filesystem** hyperlink. When the confirmation dialog appears, click **OK** to accept.
6. Verify that the file system is no longer present on the **Disk Utilities** page.

NOTE: If a file system belonging to a MediaDeck system is deleted and then recreated with a new name, both versions of the file system will appear as available in Windows* Explorer.To resolve this issue, restart the MediaDeck after deleting the file system.

Renaming a File System

To change the file system name, follow this procedure:

1. Stop the file system.
2. Click the **Change Filesystem Name** button on the **Filesystem Utilities** page.
3. Enter the new file system name.
4. Click the **Change** button.
5. Reboot all Omneon MediaDecks connected to the file system.
6. Verify that the file system restarts on each Omneon MediaDeck.

   The new file system name should be reflected in the **Disk Utilities** page on the SystemManager, and under IP connection under CIFS.

Adding a RAID set to a File System

NOTE: This procedure is provided for reference only. The “One-Click” file system feature performs this procedure automatically, and is the recommended method for the Omneon MediaDeck. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to attach a RAID set to a file system. Perform the procedure when you are creating a new file system, or when you are adding new storage to an existing file system.

The RAID set that is to be added must have the correct number of disk drives, which is 8. Verify this fact on the **RAID Set Utilities** page before proceeding.

To add a RAID set to a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to add a RAID set to an existing file system. The Omneon MediaDeck’s **Disk Utilities** page appears.
4. Click on the **Filesystem** hyperlink to display the **Filesystem Utilities** page.
5. The RAID set that you want to attach will be listed in the “**Unattached**” section. Click the **Add** button adjacent to the RAID set. This action causes the RAID set to move up into the list of attached RAID sets.
6. Click **Done** to return to the **Disk Utilities** page.

Removing a RAID Set from a File System

NOTE: This procedure is provided for reference only. The “One-Click” file system feature performs this procedure automatically, and is the recommended method for the Omneon MediaDeck. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to remove a RAID set from a file system for purposes of deleting the RAID set, and/or the file system itself. This procedure is required if you have made a mistake with the RAID set, or if you are reconfiguring your disk drives.

To remove a RAID set from a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to remove a RAID set from a file system. The Omneon MediaDeck’s **Disk Utilities** page appears.
4. Click the **Filesystem** icon that contains the target RAID set, to display the **Filesystem Utilities** page.
5. Ensure that the file system is stopped. If it is not, click **Stop FS**. When the confirmation dialog appears, click **OK** to accept. A **Detach** button appears if the file system is stopped.

6. Click **Detach**. When the confirmation dialog appears, click **OK** to accept. The file system now displays a "**Removed**" message in the previous RAID set's location.
7. Click **Done** to return to the **Disk Utilities** page.

Changing File System Wink State

Use the following steps to wink all drives in the file system.

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to wink the file system. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **Filesystem** hyperlink to display the **Filesystem Utilities** page.
5. Check the **Filesystem Drives Wink State** line.
6. Change the file system's wink state as desired:
   - If currently **On**, click **Wink Off** to stop winking all drives in the file system.
   - If currently **Off**, click **Wink On** to start winking all drives in the file system.

NOTE: In order to view the amber status LEDs of the drives being winked, remove the bezel from the front of the Omneon MediaDeck.

Viewing a File System Unicode Status

Use the following steps to view a file system's Unicode status by determining whether a file necessary for Unicode conversions is loaded on a file system.

To view a file system Unicode status:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to check the file system. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **Filesystem** hyperlink to display the **Filesystem Utilities** page.
5. Check the **Character Set DB Loaded** line:
   - If the status is **Yes**, the file needed for Unicode conversion is available to the file system.
   - If the status is **No**, the file needed for Unicode is missing and no conversion can take place. Refer to "Identifying and Upgrading Legacy File System Items for Unicode Support" in the *Omneon SystemManager User's Guide* for information on loading the necessary file for Unicode conversion.

6. Click **Done** to return to the **Disk Utilities** page.

Changing RAID Set Wink State

Use the following steps to change the RAID Set wink state.

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page.
3. Click the icon for the Omneon MediaDeck on which you want to wink a RAID set. The **Disk Utilities** page appears.
4. Click the **RAID Set** icon (or the **RAID Set Hyperlink**) to display the **RAID Set Utilities** page.
5. Check the **RAID Set Drives Wink State** line.
6. Change the RAID set's wink state as desired:
   - If currently **On**, click **Wink Off** to stop winking the drives in the RAID set.
   - If currently **Off**, click **Wink On** to start winking the drives in the RAID set.

NOTE: In order to view the amber status LEDs of the drives being winked, remove the bezel from the front of the Omneon MediaDeck.

Renaming a RAID Set

Use this feature to rename a RAID set. This process makes it easier to identify a selected RAID set, especially in Spectrum systems that use multiple MediaStores or multiple loops.

To rename a RAID set:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to rename a RAID set. The **Disk Utilities** page for the Omneon MediaDeck appears.
4. Click the **RAID Set** icon (or the **RAID Set Hyperlink**) to display the **RAID Set Utilities** page.
5. At the top of the page, click **Change** to display the **Change RAID Set Name** page.
6. Enter the new RAID set name and click **Update**. The system returns to the **RAID Set Utilities** page.
7. Click **Done** to return to the **Disk Utilities** page, where the new RAID set name appears.

Stopping a RAID Set Rebuild in Progress

Use this procedure to stop a RAID set "rebuild" in progress. Note that when the rebuild stops, the RAID set is left in a compromised state. In this state, the RAID set can still be used, but there is no protection. If another drive is lost, your content will also be lost.

The rebuild might be manually stopped, for example, if you noted that the rebuild was occurring to the wrong Hot Spare. More likely, you might stop the rebuild if it was taking away bandwidth from an important on-air operation. Once stopped, the rebuild can be started again successfully.

To stop a rebuild in progress:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to stop the rebuild. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **RAID Set** icon (or the **RAID Set Hyperlink**) for the RAID set that is currently rebuilding. The **RAID Set Utilities** page will be displayed.
5. Scroll to the bottom of the page and click **Abort Rebuild**.
6. Verify that the Rebuild status field reads "**Aborted**." Note that the button's name changes to **Start Rebuild**.

   The rebuild has now been stopped, but it can be started again successfully.

   Refer to **Restarting a RAID Set Rebuild** for details.

Restarting a RAID Set Rebuild

Normally, the rebuilding of a RAID set occurs automatically when a drive fails and a Hot Spare is available. The rebuild can also occur when a failed drive is replaced.

To restart a RAID set rebuild:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to restart the RAID set "rebuild" process. The Omneon MediaDeck's **Disk Utilities** page appears.
4. Click the **RAID Set** icon (or the **RAID Set Hyperlink**) for the RAID set that has stopped rebuilding. The **RAID Set Utilities** page will be displayed.
5. Scroll to the bottom and click **Start Rebuild**. The status field changes to "**Rebuilding**."
6. Click **Done** to return to the **Disk Utilities** page.

Starting the File System

NOTE: This procedure is provided for reference only. The "One-Click" file system feature performs this procedure automatically, and is the recommended method for creating the file system. Refer to **Using One-Click Functions to Create a File System and RAID Set**.

Use this procedure to start an existing file system that has been previously initialized. This procedure is typically used after performing maintenance on the file system, or replacing a component. To start and initialize a file system for the *first time*, immediately after the file system has been created, use the file system initialization procedure (see **Initializing a File System**), or use the "One-Click" feature.

To start a file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for the Omneon MediaDeck on which you want to start a file system. The Omneon MediaDeck's **Disk Utilities** pages appears.
4. Click the **Filesystem Hyperlink** to display the **Filesystem Utilities** page.
5. Click the file system hyperlink, as shown in **Figure 122**, to display the **Filesystem Utilities** page.

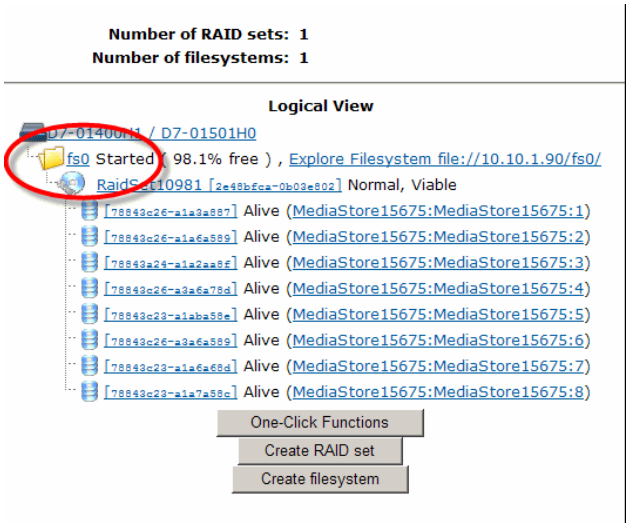


Figure 121. File System hyperlink

6. At the bottom of the page, click the **Start FS** button to display the **Start Filesystem** page. This button only appears when the file system is stopped.
7. Select the desired file system options: **NVRAM Journaling**, **Read-only**, **Use Previous Start**, and **Save Options**.

   NOTE: In most cases, you should not need to change the options from the default selections.

8. Click **Start** to accept the selected options and start the file system. The system automatically returns to the **Filesystem Utilities** page.
9. Verify that the file system's status has changed to **Started**.
10. Click **Done** to return to the **Disk Utilities** page.

Stopping the File System

Use this procedure before powering down your MediaDeck, or when you want to perform maintenance on the file system, for example, to delete it or to remove a RAID set.

To stop the file system:

1. Click the **Configuration** tab to display the **Configuration** page.
2. In the left-hand column, click the **Disk Utilities** icon to display the **Disk Utilities** page. A list of available Omneon MediaDecks will be shown.
3. Click the icon for your Omneon MediaDeck. The Omneon MediaDeck's **Disk Utilities** pages appears.
4. Click the file system hyperlink, as shown in **Figure 122**, to display the **Filesystem Utilities** page.

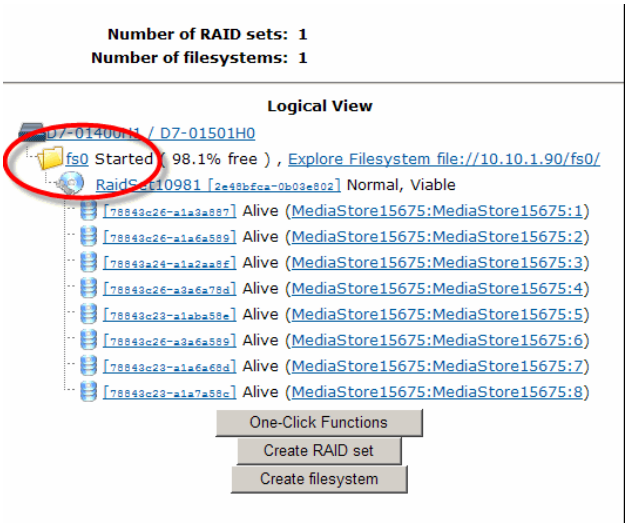


Figure 122. File System hyperlink

5. At the bottom of the **Filesystem Utilities** page, click the **Stop FS** button. This button only appears when the file system is started.
6. Click the **Disk Utilities** icon in the left-hand column and verify that the file system status for the MediaDeck is **Stopped**.

Part II Hardware Reference

The following sections provide reference information for the Omneon MediaDeck hardware components:

- **Omneon MediaDeck Orientation**
- **Omneon MediaDeck Module Orientation**
- **Omneon MediaDeck Storage Orientation**

CHAPTER 6
Omneon MediaDeck Orientation

This section provides background information for the Omneon MediaDeck processor board, front panel and power supply. Choose from the following topics:

For information about the MediaDeck Module, refer to **Omneon MediaDeck Module Orientation**. For information about the Omneon MediaDeck disk drives, refer to **Omneon MediaDeck Storage Orientation**. For information about the SystemManager platform, refer to the *Omneon SystemManager User's Guide*.

Omneon MediaDeck Features

The Omneon MediaDeck processor provides RAID controller functions, manages the file system, interfaces to video and audio I/O devices and connects to data networks via Gigabit Ethernet.

Note the following:

- One Omneon MediaDeck supports a maximum of two MediaDeck Modules (for example, 6 channels of DV).

- In addition to SystemManager communications, the two Gigabit (1000BaseT) Ethernet ports are designed for control of channels, status, configurations, file management, utilities and selected applications (such as archiving and editing) that would be optimized by Gigabit Ethernet connectivity. The file system can be “shared” by network PCs.

The following additional features and functions are included:

- **External Clock Synchronization** — a VITC decoder is provided for decoding a TOD (time-of-day) clock that is embedded in the Black Burst signal.
- **RAID Disk Protection** —Dual Parity RAID array is provided, ensuring that the system can continue to function despite the failure of any two disk drives. This includes support for a 6+2 RAID set. RAID sets are configured using the SystemManager.
- **Storage Capacity** — Accesses eight 500-GB or 1-TB SATA disk drives.
- **Supported Audio/Video Formats** — The supported Audio/Video formats depend of the type of MediaDeck Module you are using. Refer to **Omneon MediaDeck Module Orientation** for details.
- **Auto-rebuild** — upon detection of disk failure, the Omneon MediaDeck can rebuild a protected RAID set using a replacement drive.

Omneon MediaDeck Front Panel

Figure 123 illustrates a front panel view of the Omneon MediaDeck

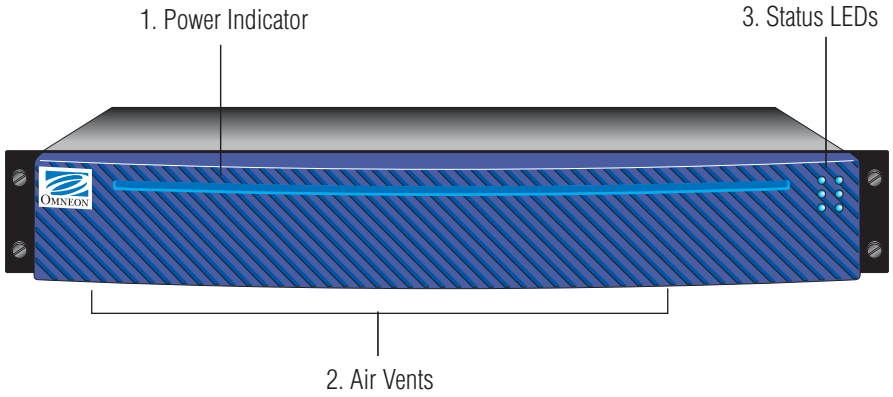


Figure 123. MediaDeck Front Panel

Following are descriptions of each front panel section as itemized above.

1. **Power Indicator**

   A bright blue **Power Indicator** is provided across the top of the front panel. This indicator also provides a “wink” function that identifies a selected Omneon MediaDeck.

2. **Air Vents**

   An array of **Air Vents** is provided across the front panel. To provide optimum airflow from the internal fans, do not obstruct the Omneon MediaDeck’s air vents.

3. **Status LEDs**

   An array of six **Status LEDs** is provided on the front panel. **Front Panel Status LEDs** provides descriptions of each Status LED.

Front Panel Status LEDs

Figure 124 provides descriptions of each status LED.

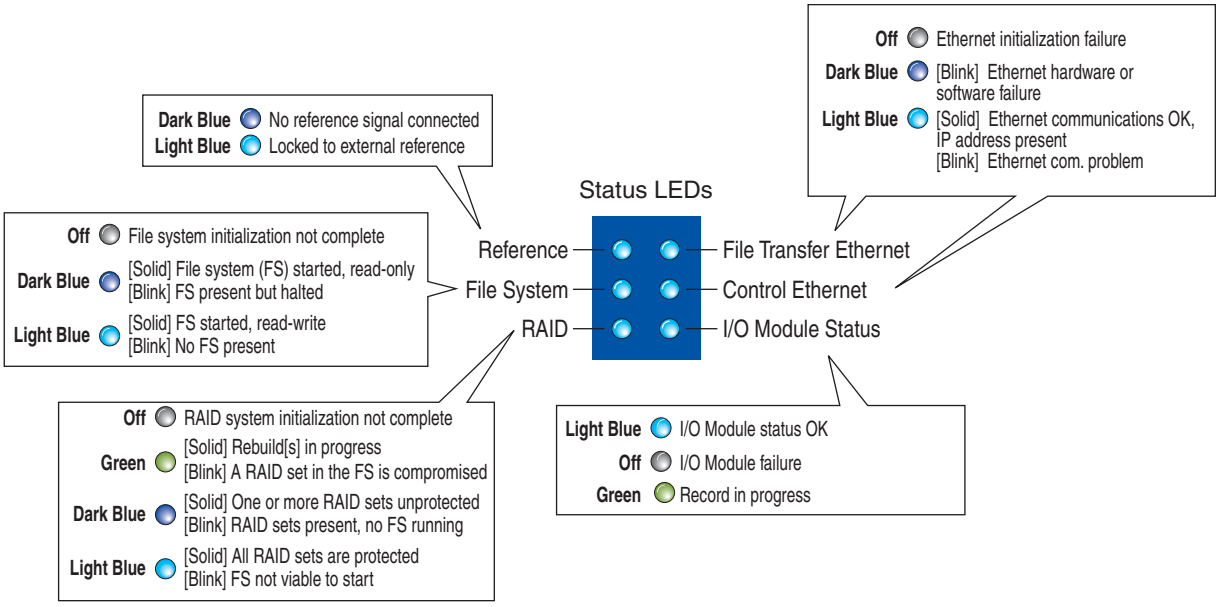


Figure 124. Front Panel Status LEDs

Table 11 also provides descriptions of each Status LED.

Table 11. Status LED Descriptions.

LED	Color/State	Indicates
File Transfer Ethernet Connection	Off	Ethernet initialization failure
	Dark Blue (blink)	Ethernet hardware or software failure
	Light Blue (solid)	Ethernet communication OK, IP address present
	Light Blue (blink)	Ethernet communication problem such as: • DHCP timeout or disconnected cable. • The Ethernet cable is either bad, not making good contact or disconnected. • Another network device has been given the Omneon MediaDeck's IP address. • The DHCP server did not assign an IP address or has failed to renew a previous IP address lease
Control Ethernet Connection	Off	Ethernet initialization failure
	Dark Blue (blink)	Ethernet hardware or software failure
	Light Blue (solid)	Ethernet communication OK, IP address present
	Light Blue (blink)	Ethernet communication problem such as: • DHCP timeout or disconnected cable. • The Ethernet cable is either bad, not making good contact or disconnected. • Another network device has been given the Omneon MediaDeck's IP address. • The DHCP server did not assign an IP address or has failed to renew a previous IP address lease
I/O Module Status	Off	I/O Module failure
	Green (solid)	Record in process
	Light Blue (solid)	I/O Module Status OK
Reference	Dark Blue	No reference signal connected
	Light Blue (solid)	Locked to external reference
File System	Off	File system initialization not complete
	Dark Blue (solid)	File system started, read-only
	Dark Blue (blink)	File system present but halted
	Light Blue (solid)	File system started, read-write
	Light Blue (blink)	No file system present

LED	Color/State	Indicates
RAID	Off	RAID system initialization not complete
	Green (solid)	Rebuild(s) in progress
	Green (blink)	A RAID set in the File System is compromised
	Dark Blue (solid)	One or more RAID sets unprotected
	Dark Blue (blink)	RAID sets present, no File System running
	Light Blue (solid)	All RAID sets are protected
	Light Blue (blink)	File System not viable to start

Refer to **Rules for System LEDs** for a list of general rules that apply to the LED functions.

Omneon MediaDeck Front View without Front Panel

Figure 125 illustrates a front view of the Omneon MediaDeck without the front panel. For information about the disk drives and drive cage assembly, see **Omneon MediaDeck Storage Orientation**.

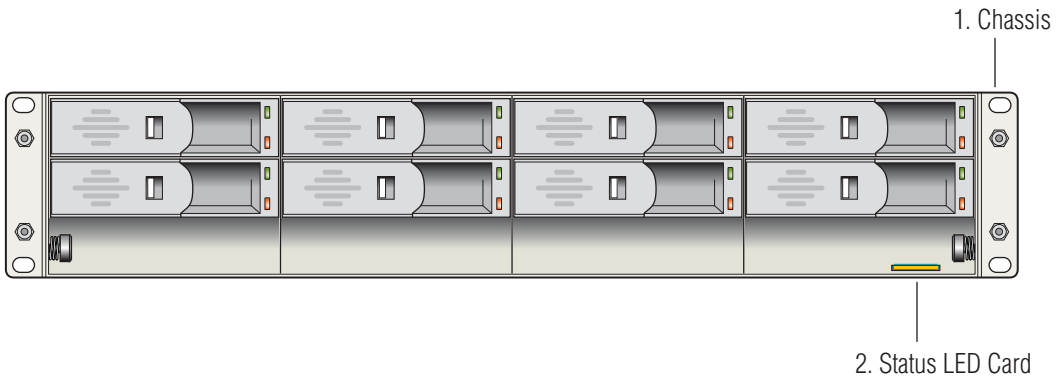


Figure 125. Front View without Front Panel

1. **Chassis**

   The Omneon MediaDeck contains eight SATA disk drives. See **Omneon MediaDeck Storage Orientation** for information about the disk drives.

2. **Status LED Card**

   The status LED card attaches to the LED connector on the front panel.

Omneon MediaDeck Rear Panel

Figure 126 illustrates a rear panel view of the Omneon MediaDeck.

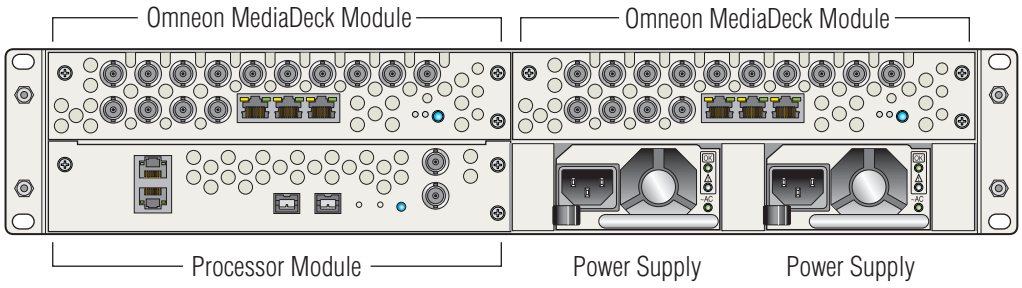


Figure 126. Omneon MediaDeck Rear Panel

For information on the MediaDeck Module (I/O Module), refer to **Omneon MediaDeck Module Orientation**.

For information on the Processor Module, refer to **Omneon MediaDeck Processor Module Rear Panel**.

For information on the Power Supply, refer to **Omneon MediaDeck Power Supply**.

Omneon MediaDeck Processor Module Rear Panel

NOTE: There are no user-serviceable parts on the Omneon MediaDeck processor board.

Figure 127 illustrates a rear panel view of the Omneon MediaDeck Processor Module.

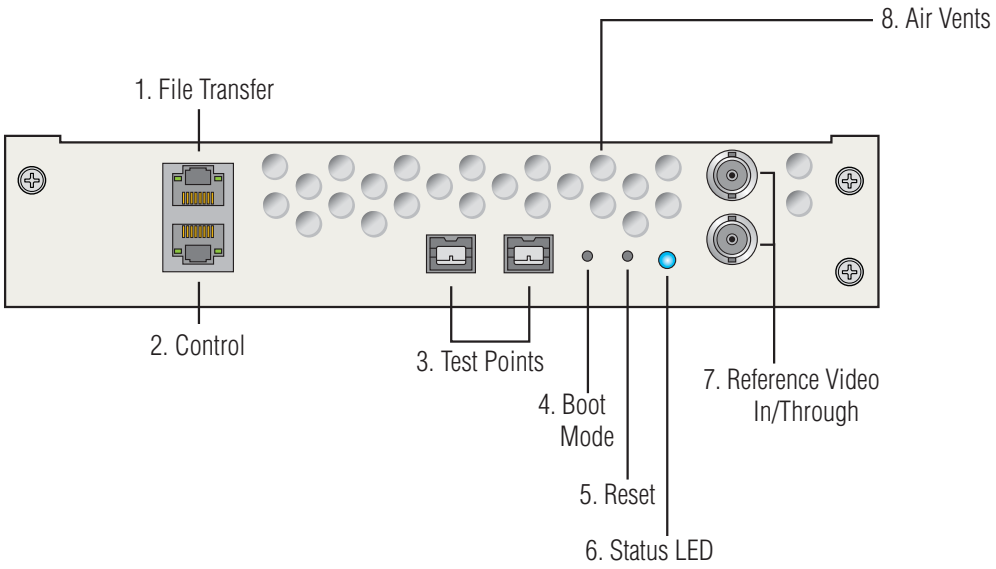


Figure 127. Processor Module Rear Panel

Following are descriptions of each rear panel section:

1. **File Transfer Ethernet port**

   The File Transfer Ethernet port is used for file transfers into and out of the Omneon MediaDeck using FTP, SAMBA, and AFP (Apple File Protocol) protocols.

   Two Ethernet Status LEDs are provided:

   - The left LED indicates link activity. The LED blinks Green when the Omneon MediaDeck is linked to another Ethernet connection.
   - The right LED is a "bi-color" LED that indicates the link speed:
     - Off = a 10BaseT connection
     - Yellow = a 100BaseT connection
     - Green = a 1000BaseT connection

2. **Control Ethernet port**

   The Control Gigabit Ethernet port is used for control functions, such as RPC based accesses from the Omneon Manager application or Player API.

   Two Ethernet Status LEDs are provided. Refer to the description of the **File Transfer Ethernet port** for details on the Ethernet Status LEDs.

3. **Test Points**

   These connectors are test purposes only. They do not provide connections into or out of the Omneon MediaDeck.

4. **Boot Mode Switch**

   The **Boot Mode Switch** button allows technical support personnel to boot the Omneon MediaDeck from the network. If the button is *pressed and held* while the Omneon MediaDeck is rebooted (either by cycling power or by pressing the **Reset** button), the Omneon MediaDeck will attempt to boot from the network via TFTP (trivial file transfer protocol). This function would be required if the Omneon MediaDeck improperly or partially loads code.

   IMPORTANT: Do not use this button unless instructed to do so by Omneon support personnel.

5. **Reset Button**

   The **Reset** button is a momentary switch that is used to perform a "soft" reset of the Omneon MediaDeck. Once pressed, all boards reset and code is re-loaded. The function is similar to clicking the **Reboot** button on the SystemManager's Omneon MediaDeck **Properties** page.

6. **Status LED**

   The status LED shows the following states:

   - Blue (blink) = The Omneon MediaDeck has successfully booted or the Omneon MediaDeck is being winked
   - Blue (solid) = The Omneon MediaDeck is powered on

- Off = The Omneon MediaDeck is powered down

7. **Reference Video Input/Through**

   Two connectors are provided for the Omneon MediaDeck's reference video input. Connect one to reference video and either terminate the other connector (with a 75 Ohm BNC terminator) or connect it to the next device in line that requires reference black.

8. **Air Vents**

   In addition to the components listed above, an array of **Air Vents** is provided on the rear panel. To provide optimum airflow from the internal fans, do not obstruct the Omneon MediaDeck's air vents.

WARNING: Risk of explosion if battery is replaced incorrectly or with an incorrect type. There are no user-serviceable batteries inside Omneon products. Refer servicing to Omneon qualified personnel only. Dispose of batteries according to the instructions.

Omneon MediaDeck Software

The following *standard* software components are included with the Omneon MediaDeck:

- **Video Server Software**

  The Omneon MediaDeck's Video Server Software component controls audio/video clip recording and playback functionality.

- **File System Software**

  The File System Software component manages file read/write access on the disk storage system.

- **RAID Controller**

  The Omneon MediaDeck's RAID Controller handles on-line spares, background disk rebuilds and file system expansion (as more storage is added to the array).

Omneon MediaDeck Hosts

The Omneon MediaDeck is based on dual "host" architecture. Note the following:

- Hosts are referred to as "**Host 0**" and "**Host 1**." Each host is associated with a particular Ethernet port (Host 0 or Host 1), and each has a unique IP address. The IP address is typically set automatically through the vDHCP server on the SystemManager. Refer to

- **Host 0** is associated with the **Control** Ethernet Port. **Host 0** is capable of recording and playing realtime (isochronous) media via the I/O modules, and supporting collaborative production or archiving applications.

  When setting up a system, **Host 0** must be connected to the SystemManager through an Ethernet switch or hub, and must be configured using the SystemManager.

- **Host 1** is associated with the **File Transfer** Ethernet Port. **Host 1** supports file transfers using FTP, SAMBA, and AFP (Apple File Protocol) protocols

- When using ClipTool or any other Ethernet application to control a Player (such as an automation system), the use of “hosts” must be kept in mind. To control a Player on a particular host, the controlling application must be connected to that host’s IP address.
- Each host can be assigned fully to either isochronous or asynchronous tasks, but Omneon does not recommend that customers combine isochronous and asynchronous tasks on the same host.

Refer to the “Player Configuration” section of the *Omneon SystemManager User’s Guide* for complete Player configuration details.

About Omneon MediaDeck Timing

Reference Video must be connected to one of the Omneon MediaDeck’s **Reference** connectors. This allows timing to be derived from the reference black input. For instructions on connecting reference video, refer to **Connecting Reference Video**.

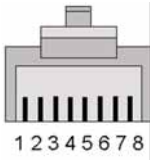
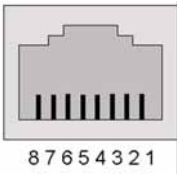
Omneon MediaDeck Component Replacement

Replacement instructions for customer-replaceable components in the Omneon MediaDeck are provided in the *Omneon MediaDeck Component Replacement Guide*. This guide is supplied with the Omneon Documentation Suite. For download instructions, refer to **Omneon MediaDeck Documentation Suite**.

Omneon MediaDeck Processor Module Connector Pinouts

Following are pinout charts of Omneon MediaDeck Processor Module connectors.

10/100/1000 Ethernet

Connectors		Pin	Signal	Pin	Signal
		1	TX+	5	Reserved
		2	TX-	6	RX-
		3	RX+	7	Reserved
		4	Reserved	8	Reserved
Male on Cable	**Female on Chassis**				

Omneon MediaDeck Specifications

This section provides information on the Omneon MediaDeck’s hardware specifications.

Table 12. Omneon MediaDeck Specifications

Parameter	Specification	Detail
Ethernet	2 Gigabit Ethernet ports	File Transfer Ethernet port supports file transfers using FTP, SAMBA, and AFP protocols. Ethernet performance depends on the number of RAID sets.
		Control Ethernet port supports RPC based accesses using SystemManager or Player API.
High-Speed	IEEE 1394	2 x IEEE 1394 (800 Mbps) buses. These are for test purposes only.
Reference	Reference Through (Loop)	Local Synchronization (75 Ohm BNC)
	Reference Input (Loop)	Local Synchronization (75 Ohm BNC)
Environmental	Operating Temperature	+10C to 35C
	Humidity	10% to 80% non-condensing
Safety	UL/CUL	UL 670950-1, 1st Edition CSA C22.2 No. 60950-1-03, 1st Edition
CE	Low Voltage Directive (73/23/EEC) including amendments	EN60950-1: 1992, A1+A2+A3+A4 Safety of Information Technology Equipment
EMC	FCC Part 15, ICES-003 ICES-003	Class A for Digital Equipment, USA Class A for Digital Equipment, Canada
	Directive of Electromagnetic Compatibility	(89/336/EEC) including amendments
	EN55022: 1998 EN55024: 1998	Emissions from Information Technology Equipment Immunity for Information Technology Equipment
	CISPR 22	Class A
Dimensions	W: 44.5 cm (17.5 inches) 48.3 cm (19.0 inches) H: 8.9 cm (3.5 inches) D: 63.6 cm (25.04 inches) 65.5 cm (25.8 inches) 67.8 cm (26.7 inches)	Chassis only Chassis plus rack ears Chassis front to chassis rear Chassis front to rear of BNC connectors Front of bezel to rear of BNC connectors Front bezel extends forward [Max. 1.4 cm (0.5625 inches)] from chassis front edge and rack ear plane.
Weight	19.05 kg. (42 lbs)	

Parameter	Specification	Detail
Power	90-260 V, 47-63Hz single phase AC input range	Dual Redundant Universal Power Supplies

Omneon MediaDeck Power Supply

The Omneon MediaDeck is equipped with two hot-swappable **Power Supplies** power supplies, each with an independent **AC** connector. If one supply fails, the load is transferred to the remaining supply without interruption to service. To take full advantage of the redundant supplies, Omneon recommends that you use separate, isolated power sources for each AC input.

The total power capacity for an Omneon MediaDeck power supply is 550 watts.

Power Supply Status LEDs

Each power supply includes three Status LEDs and their associated labels

The following table lists the symbols and the LED states. Under normal conditions, the top (AC OK) and the bottom (Power Good) LEDs should be illuminated green and the middle (Power Supply Fail) LED should be off. If a problem occurs, the middle LED will be illuminated

Table 13. Power Supply Status LED Descriptions

Symbol	Definition	LED On	LED Off
	Power Good	**GREEN:** Power supply is good	Failure, alarm, or supply is off.
	Power Supply Fail	**AMBER:** Power supply failure	Power supply is good
~ AC	AC OK	**GREEN:** AC input is good	AC input failure

CHAPTER 7
Omneon MediaDeck Module Orientation

This section provides background information for the MediaDeck Module.

Choose from the following topics:

MediaDeck Module Descriptions

An MediaDeck Module is a network interface adapter for video, audio, timecode and control. MediaDeck Modules provide format conversion between the various supported formats. Each MediaDeck Module is a “channel” or “channels” capable of recording, playing, and processing control commands. The MediaDeck Module includes SDI connections, pairs of 24-bit AES audio connections, and RS-422 ports for connecting to automation systems and other control devices.

Select one of the following:

5000 Series SD MPEG-2/DV MediaDeck Module

This MediaDeck Module provides the following:

- Video encoding and decoding of SD-SDI video according to SMPTE 272M
- 16 channels of embedded audio, or up to four channels of discrete (AES/EBU) audio
- Encoding and decoding at a variety of operating points:
  - SD MPEG-2 Long GOP, 4:2:0 profile at 3 to15.0 Mbps
  - SD MPEG-2 Long GOP, 4:2:2 profile at 15.1 to 24.9, 50 Mbps
  - SD MPEG-2 I-frame 4:2:2 at 25 to 50 Mbps
  - SD IMX at 30, 40, and 50 Mbps
  - DV (25 Mbps), DVCPRO (25 Mbps), DVCPRO 50
- Audio I/O is provided through an AES/EBU interface that supports four stereo pairs
- Standard SDI embedded audio capabilities (per SMPTE 272 M)
- Pre-compressed audio support record and playout AC-3 and Dolby ™ E

NOTE: While encoding, audio/video input is routed to the output for input monitoring. The output is always switched to E-E during stop or record modes and switched to playback during play mode.

NOTE: If the MediaDeck Module is configured for embedded audio, the audio that is embedded in the SDI output is also replicated on the AES outputs in playout mode.

5220 Series SD MPEG-2 Dual I/O MediaDeck Module

This MediaDeck Module provides the following:

- Two channels of video input and output
- Video encoding and decoding of SD SDI video according to SMPTE 292M
- 16 channels of embedded audio, or up to four channels of discrete (AES/EBU) audio
- Encoding and decoding at a variety of operating points:
  - SD IMX at 30, 40, and 50 Mbps
  - SD MPEG-2 Long GOP at 8 to 24.9 Mbps
  - SD MPEG-2 I-Frame at 25 to 50 Mbps
  - User-selectable MXF OP1a (self-contained essence), MXF OP1b (referenced essence) or QuickTime (self-contained or reference) wrapper.
  - Encoding of both 4:2:0 and 4:2:2 chroma sampling is supported

5320 Series HD/SD MPEG-2 Dual I/O MediaDeck Module

This MediaDeck Module provides the following:

- Two channels of video input and output

- Video encoding and decoding of HD and SD SDI video according to SMPTE 292M
- 16 channels of embedded audio, or up to four channels of discrete (AES/EBU) audio
- Encoding and decoding at a variety of operating points:
  - HD MPEG-2 Long GOP at 18 to 85 Mbps
  - HD MPEG-2 I-frame at 50 to 100 Mbps
  - SD IMX at 30, 40, and 50 Mbps
  - SD MPEG-2 Long GOP at 8 to 24.9 Mbps
  - SD MPEG-2 I-Frame at 25 to 50 Mbps
  - User-selectable MXF OP1a (self-contained essence), MXF OP1b (referenced essence) or QuickTime (self-contained or reference) wrapper.
  - Encoding of both 4:2:0 and 4:2:2 chroma sampling is supported

5400 Series HD/SD MPEG-2/DV Simulcast MediaDeck Module

The MediaDeck Module 5401 up-converts and down-converts any mix of SD and HD material, to play out simultaneous SD and HD content on a single channel. SD video is up-converted to HD SDI video and HD SDI video is down-converted to SD video.

This MediaDeck Module provides the following:

- One channel of video output that plays simultaneous SD and HD material up-converted or down-converted as necessary.
- Video up-conversion of SD SDI to HD SDI video
- Video down-conversion of HD SDI to SD SDI video
- 16 channels of embedded audio, or up to 4 channels of discrete (AES/EBU) audio
- Decoding at a variety of operating points:
  - DV-25 SD
  - DVCPRO SD
  - DVCPRO 50 SD
  - DVCPRO HD
  - HD MPEG-2 Long GOP at 18 to 85 Mbps
  - HD MPEG-2 I-frame at 50 to 100 Mbps
  - SD IMX at 30, 40, and 50 Mbps
  - SD MPEG-2 Long GOP at 3 to 24.9 Mbps
  - SD MPEG-2 I-Frame at 25 to 50 Mbps

- User-selectable MXF OP1a (self-contained essence), MXF OP1b (referenced essence) or QuickTime (self-contained or reference) wrapper.

5500 Series HD/SD MPEG-2/DV Playback MediaDeck Module

The MediaDeck Module 5500 is a dual-channel HD and SD playout module, and operates in both simulcast mode and non-simulcast mode. In simulcast mode, the module up-converts and down-converts any mix of SD and HD material, to play out simultaneous SD and HD content on a single channel. In non-simulcast mode, the module up-converts or down-converts but does not play out simultaneous SD and HD content on a single channel. For instructions on switching between modes, refer to **Viewing Omneon MediaDeck Properties**.

This MediaDeck Module provides the following:

- Two channels of video output, which can be independently configured as either SD or HD outputs.
- Video up-conversion of SD SDI to HD SDI video
- Video down-conversion of HD SDI to SD SDI video
- 16 channels of embedded audio, or up to 4 channels of discrete (AES/EBU) audio
- Decoding at a variety of operating points:
  - DV-25 SD
  - DVCPRO SD
  - DVCPRO 50 SD
  - DVCPRO HD
  - HD MPEG-2 Long GOP at 18 to 85 Mbps
  - HD MPEG-2 I-frame at 50 to 100 Mbps
  - SD IMX at 30, 40, and 50 Mbps
  - SD MPEG-2 Long GOP at 3 to 24.9 Mbps
  - SD MPEG-2 I-Frame at 25 to 50 Mbps
  - User-selectable MXF OP1a (self-contained essence), MXF OP1b (referenced essence) or QuickTime (self-contained or reference) wrapper.

MediaDeck Module Rear Panels

NOTE: There are no user-serviceable parts inside the MediaDeck Modules.

This section includes the following:

- **MediaDeck Module 5321 Rear Panel Components**
- **MediaDeck Module 5401 Rear Panel Components**
- **MediaDeck Module 5501 Rear Panel Components**

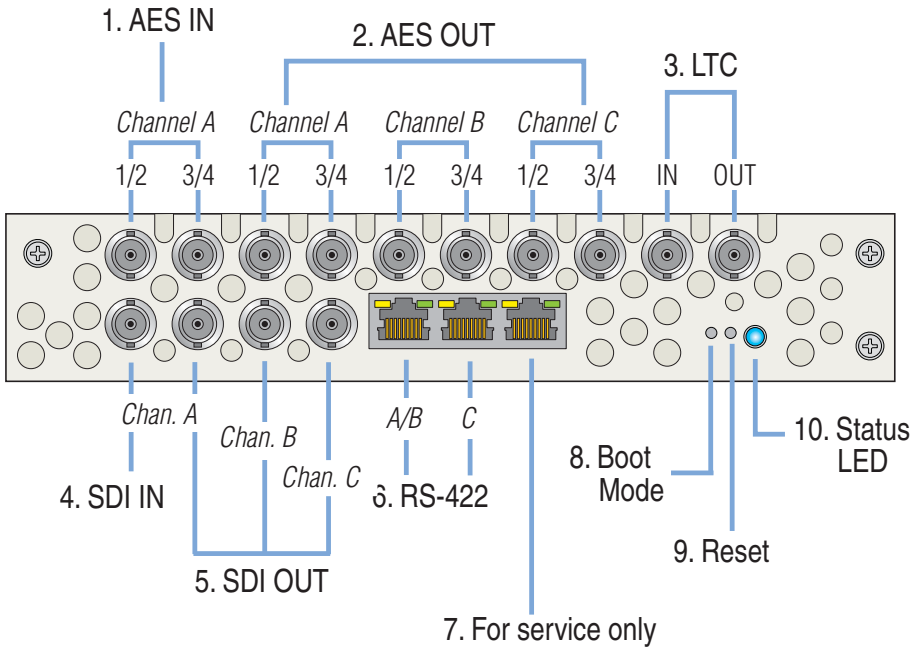
MediaDeck Module 5001 Rear Panel Components

Note for the MediaDeck Module 5001 rear panel:

- There are no user-serviceable parts on the MediaDeck Module 5001.
- Air vents are located in between the connectors on the rear panel.

Figure 128 illustrates a rear panel view of the MediaDeck Module 5001.

Figure 128. MediaDeck Module 5001 Rear Panel



1. **AES Input Group**

   Two BNC connectors are provided for AES digital audio inputs (one channel, two AES pairs) including channels 1/2 and 3/4. Each input is AES/EBU (48 kHz, 24 bits).

2. **AES Output Group**

   Six BNC connectors are provided for AES digital audio outputs (three channels, two AES pairs) including channels 1/2 and 3/4. Each output is AES/EBU (48 kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

3. **LTC Group**

   Two BNC connectors are provided for an analog LTC (longitudinal timecode) signal: one input (IN) and one output (OUT). When LTC is present at the IN port and a recording is made, timecode will be

embedded in the DV stream. On playback, timecode can be routed from the OUT port to an external device such as a timecode reader/character generator for inserting code in frame.

NOTE: Some devices (such as Sony* Betacam* decks) will not display LTC timecode unless the source timecode is changing. For example, if the Omneon clip is in “cue play” or “play zero-speed” mode, the timecode shown on the Sony deck may be incorrect.

4. **SDI Input**

   One IN connector (BNC) is provided for the SDI video input.

5. **SDI Output**

   Three OUT connectors (BNC) are provided for the SDI video output. Note that E-E video is present on these outputs during record or stop modes.

6. **RS-422 Ports**

   Two RS-422 connectors (RJ45) are provided for RS-422 serial control.

   The LEDs will be lit when transmitting between an external controller and the Omneon MediaDeck. The LEDs correspond to the three channels as follows:

   - Channel A: left Green LED
   - Channel B: left Yellow LED
   - Channel C: right Green LED

7. **Ethernet Ports**

   One RJ45 Ethernet port (10/100/1000BaseTX) is provided. This port is currently unused.

8. **Boot Mode**

   The Boot Mode Switch button allows technical support personnel to boot the MediaDeck Module 5001 from the network.

   IMPORTANT: Do not use this button unless instructed to do so by Omneon support personnel.

9. **Reset**

   The reset switch is a recessed switch which allows the user to reset the MediaDeck Module 5001 module.

10. **Status LED**

    The status LED shows the following states:

    - Blue (blink) = The Omneon MediaDeck has successfully booted or the Omneon MediaDeck Module is being winked
    - Blue (solid) = The Omneon MediaDeck is powered on
    - Off = The Omneon MediaDeck is powered down

    NOTE: During boot-up, the status LED on the rear panel of the Processor Module will light first, then the LEDs on the rear panels of the MediaDeck Modules will light. If the processor module fails to boot properly then the MediaDeck Modules will not boot and their status LEDs will remain off.

MediaDeck Module 5221 Rear Panel Components

For descriptions of the MediaDeck Module 5221 rear panel components, refer to **MediaDeck Module 5321 Rear Panel Components**.

NOTE: The MediaDeck Module 5221 provides support for SD only.

MediaDeck Module 5321 Rear Panel Components

Note for the MediaDeck Module 5321 rear panel:

- There are no user-serviceable parts on the MediaDeck Module 5321.
- Air vents are located in between the connectors on the rear panel.

Figure 129 illustrates a rear panel view of the MediaDeck Module 5321.

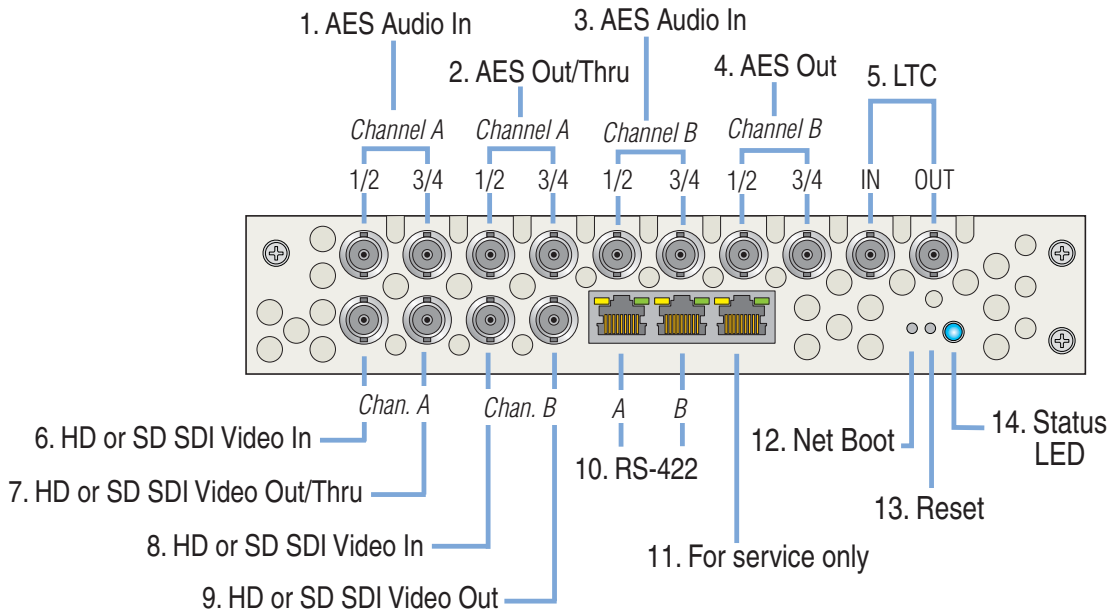


Figure 129. MediaDeck Module 5321 or 5221 Rear Panel

Following are descriptions of each rear panel section as itemized above.

1. **AES Input Group**

   These two BNC connectors are provided for AES digital audio inputs (one channel, two AES pairs), including channels 1/2 and 3/4. Each input is AES/EBU (48kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

2. **AES Active Loop (Out/Thru) Group**

   These two BNC connectors are provided for E-E digital audio output (one channel, two AES pair) including channels 1/2 and 3/4. Each output is AES/EBU (48kHz, 24 bits).

Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

3. **Second AES Input Group**

   These two BNC connectors are provided for AES digital audio inputs (one channel, two AES pairs), including channels 1/2 and 3/4. Each input is AES/EBU (48kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

4. **AES Output Group (Channel B)**

   These two BNC connectors are provided for AES digital audio outputs (one channels, two AES pairs) including channels 1/2 and 3/4. Each output is AES/EBU (48 kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

5. **LTC (Timecode) Group**

   Two BNC connectors are provided for an analog LTC (longitudinal timecode) signal: one input (IN) and one output (OUT). When LTC is present at the IN port and a recording is made, timecode will be embedded in the DV stream. On playback, timecode can be routed from the OUT port to an external device such as a timecode reader/character generator for inserting code in frame.

   NOTE: Some devices (such as Sony* Betacam* decks) will not display LTC timecode unless the source timecode is changing. For example, if the Omneon clip is in “cue play” or “play zero-speed” mode, the timecode shown on the Sony deck may be incorrect.

6. **HD or SD SDI Video Input (Channel A)**

   This BNC connector is provided for HD or SD SDI video input.

7. **HD or SD SDI Video Out/Thru (Channel A)**

   This BNC connector is provided for HD or SD SDI video output or E-E.

8. **HD or SD SDI Video Input (Channel B)**

   This BNC connector is provided for HD or SD SDI video input.

9. **HD or SD SDI Video Output (Channel B)**

   This BNC connector is provided for the HD or SD SDI video output.

10. **RS-422 Ports**

    Two RS-422 connectors (RJ45) are provided for RS-422 serial control.

    The LEDs will be lit when transmitting between an external controller and the Omneon MediaDeck. The LEDs correspond to the two channels as follows:

    - Channel A: left Green LED
    - Channel B: left Yellow LED

11. **Test Port**

    One RS-422 connector (RJ45) is available for Omneon Support test purposes only.

12. **Net Boot Button**

The Net Boot button, on the left, allows Omneon Support to boot the MediaDeck Module from the network. If the button is pressed and held while the MediaDeck Module is rebooted (either by cycling power or by pressing the Reset button), the MediaDeck Module will attempt to boot from the network via TFTP (trivial file transfer protocol). This function would be required if the MediaDeck Module improperly or partially loads code.

NOTE: Avoid using this button unless instructed by Omneon Support personnel.

13. **Reset Button**

    The Reset button, on the right, is a momentary switch that is used to perform a “soft” reset of the MediaDeck Module. Once pressed, all boards reset and code is re-loaded. The function is similar to clicking the Reboot button on the SystemManager’s MediaDeck Module Properties page.

14. **Status LED**

    The Status LED provides a “wink” function that identifies the MediaDeck Module when its wink mode is activated from the SystemManager. The status LED shows the following states:

    - Blue (blink) = The Omneon MediaDeck Module has successfully booted or is being winked
    - Blue (solid) = The Omneon MediaDeck Module is powered on
    - Off = The Omneon MediaDeck Module is powered down

    NOTE: During boot-up, the status LED on the rear panel of the Processor Module will light first, then the LEDs on the rear panels of the MediaDeck Modules will light. If the processor module fails to boot properly then the MediaDeck Modules will not boot and their status LEDs will remain off.

MediaDeck Module 5401 Rear Panel Components

Note for the MediaDeck Module 5401 rear panel:

- There are no user-serviceable parts on the MediaDeck Module 5401.
- Air vents are located in between the connectors on the rear panel.

Figure 131 illustrates a rear panel view of the MediaDeck Module 5401.

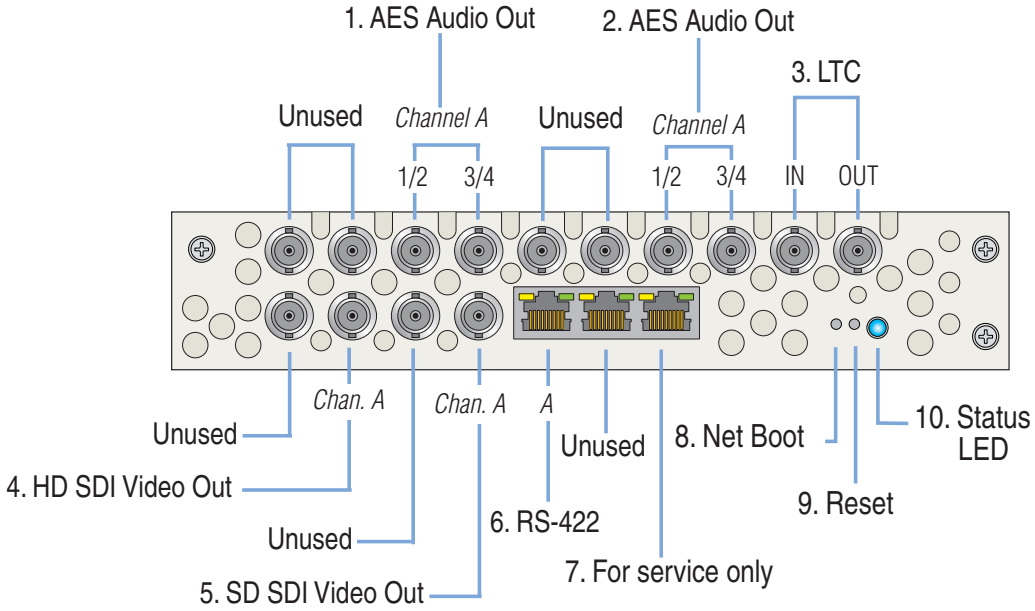


Figure 130. MediaDeck Module 5401 Rear Panel

Following are descriptions of each rear panel section as itemized above.

1. **AES Output Group (Channel A)**

   These two BNC connectors are provided for AES digital audio inputs (one channel, two AES pairs), including channels 1/2 and 3/4. Each input is AES/EBU (48kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

2. **Second AES Output Group (Channel A)**

   These two BNC connectors are provided for AES digital audio outputs (one channels, two AES pairs) including channels 1/2 and 3/4. Each output is AES/EBU (48 kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

3. **LTC (Timecode) Group**

   Two BNC connectors are provided for an analog LTC (longitudinal timecode) signal: one input (IN) and one output (OUT). When LTC is present at the IN port and a recording is made, timecode will be embedded in the DV stream. On playback, timecode can be routed from the OUT port to an external device such as a timecode reader/character generator for inserting code in frame.

   NOTE: Some devices (such as Sony* Betacam* decks) will not display LTC timecode unless the source timecode is changing. For example, if the Omneon clip is in “cue play” or “play zero-speed” mode, the timecode shown on the Sony deck may be incorrect.

4. **HD or SD SDI Video Output (Channel A)**

   This BNC connector is provided for HD or SD SDI video output.

5. **SD or SD SDI Video Output (Channel A)**

This BNC connector is provided for SD SDI video output.

6. **RS-422 Ports**

   One RS-422 connector (RJ45) is provided for RS-422 serial control.

   The LEDs will be lit when transmitting between an external controller and the Omneon MediaDeck.

7. **Test Port**

   One RS-422 connectors (RJ45) is available for Omneon Support test purposes.

8. **Net Boot Button**

   The Net Boot button, on the left, allows Omneon Support to boot the MediaDeck Module from the network. If the button is pressed and held while the MediaDeck Module is rebooted (either by cycling power or by pressing the Reset button), the MediaDeck Module will attempt to boot from the network via TFTP (trivial file transfer protocol). This function would be required if the MediaDeck Module improperly or partially loads code.

   NOTE: Avoid using this button unless instructed by Omneon Support personnel.

9. **Reset Button**

   The Reset button, on the right, is a momentary switch that is used to perform a “soft” reset of the MediaDeck Module. Once pressed, all boards reset and code is re-loaded. The function is similar to clicking the Reboot button on the SystemManager’s MediaDeck Module Properties page.

10. **Status LED**

    The Status LED provides a “wink” function that identifies the MediaDeck Module when its wink mode is activated from the SystemManager. The status LED shows the following states:

    - Blue (blink) = The Omneon MediaDeck Module has successfully booted or is being winked
    - Blue (solid) = The Omneon MediaDeck Module is powered on
    - Off = The Omneon MediaDeck Module is powered down

    NOTE: During boot-up, the status LED on the rear panel of the Processor Module will light first, then the LEDs on the rear panels of the MediaDeck Modules will light. If the processor module fails to boot properly then the MediaDeck Modules will not boot and their status LEDs will remain off.

MediaDeck Module 5501 Rear Panel Components

Note for the MediaDeck Module 5501 rear panel:

- There are no user-serviceable parts on the MediaDeck Module 5501.
- Air vents are located in between the connectors on the rear panel.
- When simulcast mode is enabled on the MediaDeck Module 5501, the rear panel components for the MediaDeck Module 5501 have the functionality as those for the MediaDeck Module 5401. Refer to **Figure 130**.

Figure 131 illustrates a rear panel view of the MediaDeck Module 5501.

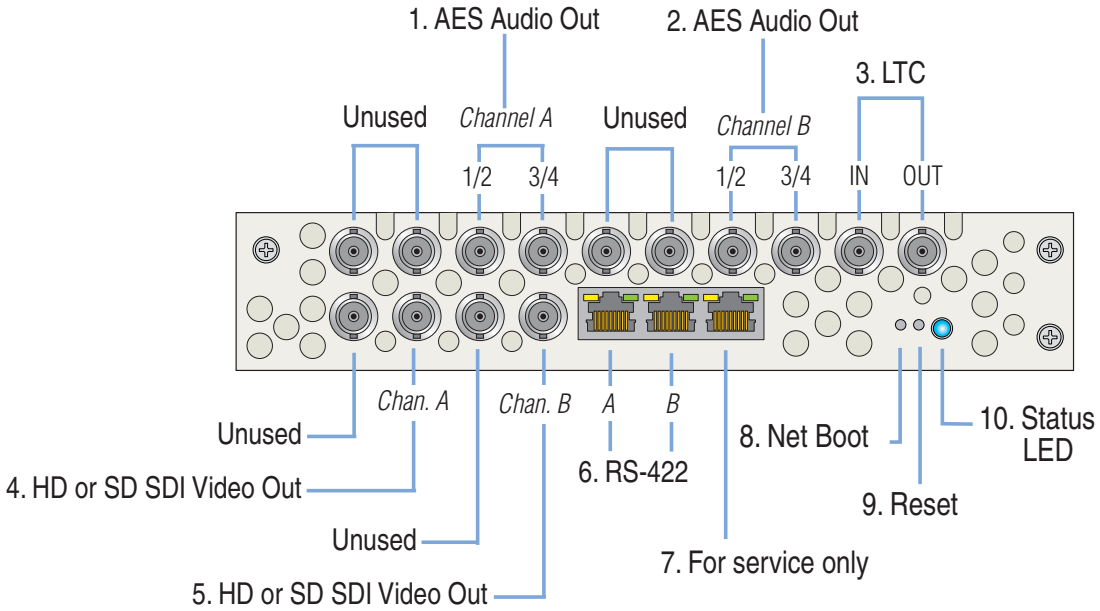


Figure 131. MediaDeck Module 5501 Rear Panel

Following are descriptions of each rear panel section as itemized above.

1. **AES Output Group (Channel A)**

   These two BNC connectors are provided for AES digital audio inputs (one channel, two AES pairs), including channels 1/2 and 3/4. Each input is AES/EBU (48kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

2. **Second AES Output Group (Channel B)**

   These two BNC connectors are provided for AES digital audio outputs (one channels, two AES pairs) including channels 1/2 and 3/4. Each output is AES/EBU (48 kHz, 24 bits).

   Refer to **About AC-3 and Dolby E** and **About SDI Embedded Audio** for additional information.

3. **LTC (Timecode) Group**

   Two BNC connectors are provided for an analog LTC (longitudinal timecode) signal: one input (IN) and one output (OUT). When LTC is present at the IN port and a recording is made, timecode will be embedded in the DV stream. On playback, timecode can be routed from the OUT port to an external device such as a timecode reader/character generator for inserting code in frame.

   NOTE: Some devices (such as Sony* Betacam* decks) will not display LTC timecode unless the source timecode is changing. For example, if the Omneon clip is in “cue play” or “play zero-speed” mode, the timecode shown on the Sony deck may be incorrect.

4. **HD or SD SDI Video Output (Channel A)**

   This BNC connector is provided for HD or SD SDI video output.

5. **HD or SD SDI Video Output (Channel B)**

This BNC connector is provided for the HD or SD SDI video output.

6. **RS-422 Ports**

   Two RS-422 connectors (RJ45) are provided for RS-422 serial control.

   The LEDs will be lit when transmitting between an external controller and the Omneon MediaDeck. The LEDs correspond to the two channels as follows:

   - Channel A: left Green LED
   - Channel B: left Yellow LED

7. **Test Port**

   One RS-422 connector (RJ45) is available for Omneon Support test purposes only.

8. **Net Boot Button**

   The Net Boot button, on the left, allows Omneon Support to boot the MediaDeck Module from the network. If the button is pressed and held while the MediaDeck Module is rebooted (either by cycling power or by pressing the Reset button), the MediaDeck Module will attempt to boot from the network via TFTP (trivial file transfer protocol). This function would be required if the MediaDeck Module improperly or partially loads code.

   NOTE: Avoid using this button unless instructed by Omneon Support personnel.

9. **Reset Button**

   The Reset button, on the right, is a momentary switch that is used to perform a “soft” reset of the MediaDeck Module. Once pressed, all boards reset and code is re-loaded. The function is similar to clicking the Reboot button on the SystemManager’s MediaDeck Module Properties page.

10. **Status LED**

    The Status LED provides a “wink” function that identifies the MediaDeck Module when its wink mode is activated from the SystemManager. The status LED shows the following states:

    - Blue (blink) = The Omneon MediaDeck Module has successfully booted or is being winked
    - Blue (solid) = The Omneon MediaDeck Module is powered on
    - Off = The Omneon MediaDeck Module is powered down

    NOTE: During boot-up, the status LED on the rear panel of the Processor Module will light first, then the LEDs on the rear panels of the MediaDeck Modules will light. If the processor module fails to boot properly then the MediaDeck Modules will not boot and their status LEDs will remain off.

About AES/EBU Audio and Interleaved Audio

This discussion explains the use of separate AES/EBU audio versus interleaved audio as it applies to DV, DVCPRO and DVCPRO 50 Players in the Omneon MediaDeck SD Module.

NOTE: There is no interleaved audio in an MPEG video file. When an MPEG Player is created, a video elementary stream is recorded in the .mpg media file. To record audio along with MPEG video, the MPEG Player must be configured with an audio track (by clicking the Audio button on the SystemManager’s Edit Player page).

For DV, DVCPRO and DVCPRO 50 Players, AES/EBU inputs **1/2** are used for both separate audio and interleaved audio. Inputs **3/4**, **5/6** and **7/8** are used for separate audio only.

Interleaved DV Audio:

- In the SystemManager application, when you create a DV, DVCPRO or DVCPRO 50 Player and you *do not* click the **Audio** button, interleaved DV audio is selected.
    - For DV and DVCPRO, connector **AES IN 1/2** is active. Input audio from connectors **AES IN 3/4, 5/6** and **7/8** is ignored.
    - For DVCPRO 50, connectors **AES IN 1/2** and **3/4** are active. Input audio from connectors **AES IN 5/6** and **7/8** is ignored.

When a recording is made, input audio is recorded in 16-bit format and interleaved as part of the DV file (with the **.dv** extension).

NOTE: For DV and DVCPRO, two channels of audio are interleaved in the .**dv** file (1 pair). For DVCPRO 50, four channels of audio are interleaved (2 pairs).

- For clips recorded in this way, DV audio plays back as follows:
    - For DV and DVCPRO, audio plays from the **OUT 1/2** connector and the signal from the **OUT 3/4, 5/6** and **7/8** connectors is AES/EBU silence (all data bits are zero). Only 16 bits of the **OUT 1/2** signal are non-zero.
    - For DVCPRO 50, audio plays from the **OUT 1/2** and **3/4** connectors and the signal from the **OUT 5/6** and **7/8** connectors is AES/EBU silence (all data bits are zero). Only 16 bits of the **OUT 1/2** and **3/4** signals are non-zero.

Separate AES/EBU audio with DV Players:

- When you create a DV, DVCPRO or DVCPRO 50 Player and you click the **Audio** button, separate AES/EBU audio is selected. When you record, input audio from the **AES IN 1/2, 3/4, 5/6** and **7/8** connectors is recorded in 24-bit format in its own (separate) file. In addition, (as described in the **Interleaved DV Audio** section above) input audio is recorded in 16-bit format and interleaved in the DV file.
- In this mode, two files are created. The **.**dv file includes video plus interleaved 16-bit audio from channels **1/2** (DV, DVCPRO) or channels **1/2** and **3/4** (DVCPRO 50) while the separate AES/EBU (.aiff) includes eight channels of audio.
- When you play back a clip that has been recorded in this way, the separate AES/EBU audio plays back from the **OUT 1/2, 3/4, 5/6** and **7/8** connectors with 24 non-zero bits.

NOTE: DV, DVCPRO, and DVCPRO 50 clips recorded with only interleaved audio will not output any audio through a player that is configured for AES/EBU audio only.

About AC-3 and Dolby E

AC-3 (Dolby™ Digital) is a high-quality multi-channel audio compression standard, and the audio standard for DVD and satellite pay-for-view content. Current implementations have standardized on the SMPTE-recommended 5.1 channel arrangement: Left, Center, Right, Left-Surround, Right-Surround, plus a low-frequency Subwoofer channel. Dolby E is Dolby Labs' professional digital audio

coding system, with up to eight channels of high-quality audio that is distributed over an AES pair, or recorded on two audio tracks of a digital VTR or disk recorder. Dolby E is primarily used in recording studios to preserve audio quality across several generations of decoding and re-encoding.

The Omneon MediaDeck System provides pre-compressed audio support, with the ability to record and playout AC-3 and Dolby E audio pairs. As part of the Player configuration process within the SystemManager, audio resampling can be disabled on a per “audio pair” basis. Note the following:

- AC-3 pairs are handled automatically and dynamically by the MediaDeck Module; the user does not have to explicitly turn off re-sampling on the selected pair. AC-3 audio can co-exist with other audio types (e.g. AES/EBU) in an arbitrary mix of up to 8 pairs (4 channels).
- For proper operation with Dolby E, audio re-sampling must be explicitly turned off for the selected channel pair, when material is recorded on the Omneon MediaDeck Storage. Dolby E can co-exist with other audio types (e.g. AES/EBU) in an arbitrary mix of up to 4 audio pairs. Players can be enabled for Dolby E support on a per audio pair basis (0 to four channel pairs).
- MediaDeck Modules do not encode or decode AC-3 or Dolby E. Encoding must occur prior to recording, and decoding after playing from the MediaDeck Module.
- Improper configuration of a Player is not detected or reported by the SystemManager application.
- If you record Dolby E through a Player that is not properly configured for Dolby E, on playback an external Dolby E decoder will not detect a valid bitstream and the result will be audio silence.
- AC-3 and Dolby E implementation assumes that audio/video alignment in the incoming (recorded) media streams is satisfactory for subsequent playout. The audio samples will be “passed through” as received with no attempt at realignment.

Refer to **Creating a Player** for instructions on configuring AC-3 and Dolby E functionality.

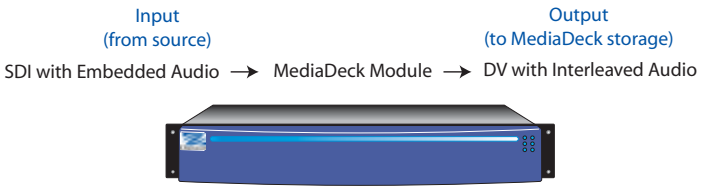
About SDI Embedded Audio

SDI embedded audio functions in the MediaDeck Module 5001 (per SMPTE 272M), 5221, 5321, 5401, and 5501 (per SMPTE 292M) eliminate the need for external embedders and de-embedders. The MediaDeck Module can play back embedded audio in SDI format on up to 16 video channels per stream. By default, embedded audio is turned on for all AES outputs. Refer to **Attaching Devices and Setting Conversion Options**for information on turning off embedded audio and other embedding options.

In addition, full system audio storage capabilities are available with the MediaDeck Module 5001, 5221, 5321, 5401, and 5501 as outlined below.

NOTE: In the following discussions and diagrams, DV refers to DV (25 Mbps), DVCPRO (25 Mbps) and DVCPRO 50 formats.

Figure 132. SDI Embedded Audio Diagram 1



Using the MediaDeck Module (refer to **Figure 132**):

- SDI with embedded audio is the MediaDeck Module's input. DV with interleaved audio (within the DV file) is recorded. A single **.dv** file is recorded to the Omneon MediaDeck storage.
- To accomplish this, create a Player with only one DV track on the **Edit Player** page. To use SDI with embedded audio on the input stream, select **Embedded** or **Limited Embedded** on the **Attach Devices** page.

IMPORTANT: For DV and DVCPRO, two channels of audio are interleaved in the **.dv** file (1 pair). For DVCPRO 50, four channels of audio are interleaved (2 pairs).

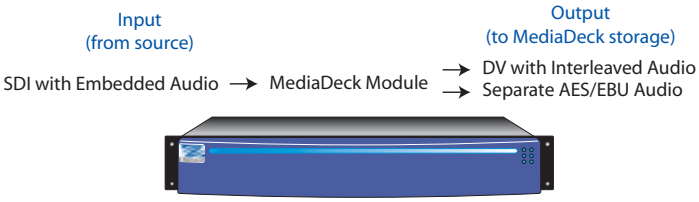
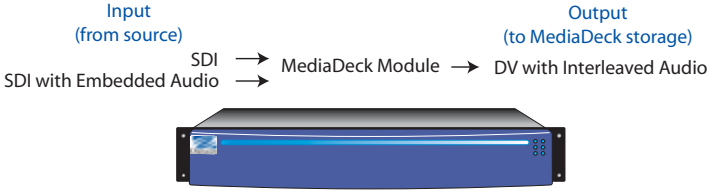


Figure 133. SDI Embedded Audio Diagram 2

Using the MediaDeck Module (refer to **Figure 133**):

- SDI with embedded audio is the MediaDeck Module's input. DV with both interleaved audio and separate AES/EBU audio is recorded. Two files are recorded to the Omneon MediaDeck storage: **.dv** and **.aiff**.
- To accomplish this, create a Player with one DV track and one AES/EBU track on the **Edit Player** page. To use SDI with embedded audio on the input stream, select **Embedded** or **Limited Embedded** on the **Attach Devices** page.

Figure 134. SDI Embedded Audio Diagram 3



Using the MediaDeck Module (refer to **Figure 134**):

- Both SDI and separate AES/EBU audio are the MediaDeck Module's inputs. DV with interleaved audio is recorded. A single .**dv** file is recorded to the Omneon MediaDeck storage.
- To accomplish this, create a Player with only one DV track on the **Edit Player** page. To use separate AES/EBU audio on the input, select **Non Embedded** on the **Attach Devices** page.

IMPORTANT: For DV and DVCPRO, two channels of audio are interleaved in the .**dv** file (1 pair). For DVCPRO 50, four channels of audio are interleaved (2 pairs).

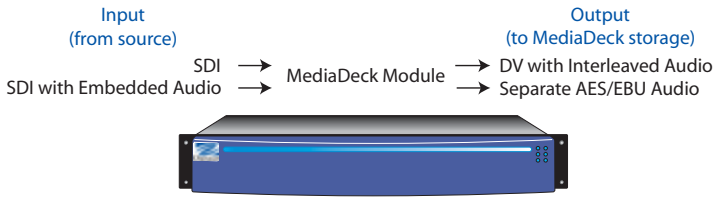


Figure 135. SDI Embedded Audio Diagram 4

Using the MediaDeck Module (refer to **Figure 135**):

- Both SDI and separate AES/EBU audio are the MediaDeck Module's inputs. DV with both interleaved audio and separate AES/EBU audio is recorded. Two files are recorded to the Omneon MediaDeck storage: .**dv** and .**aiff**.
- To accomplish this, create a Player with one DV track and one AES/EBU 8 Channel track on the **Edit Player** page. To use separate audio on the input, select **Non Embedded** on the **Attach Devices** page.

Refer to **Creating a Player** for instructions on working with embedded audio.

About Video Output Timing

Note the following important points regarding the MediaDeck Module video output timing:

- **EE Mode**: In this mode, the reference input is ignored. The output clock is derived from the SDI input. This ensures that the output never settles in a state of generating "green lines" when either an asynchronous or out-of-phase input is applied. The MediaDeck Module's output timing is an adjustable fixed latency from the input timing. The range is +10.74 µsec to +150.4 µsec.
- **Record Mode**: Same as EE mode.

NOTE: When the MediaDeck SD Module is in **Record** mode or **Idle**, the Channel A output is an active loop through of the SDI input.

- **Play Mode**:
  - Output timing is settable over a range of approximately ±10 µsec.
  - Play can occur either with or without a reference signal applied to the **Reference Video** connection. SDI output wander is lower when using reference.
  - The MediaDeck Module uses reference for play only if all of the following are met:

- A reference signal is connected to the Omneon MediaDeck's **Reference Video** input.
- The reference signal is locked, as indicated by the Omneon MediaDeck's top-left LED. The LED's color is **light blue** when reference is locked.
- The field-rate of the reference signal matches the field-rate of the decoded material.
- If one or more of the above conditions are not met, the play clock is derived from an internal source. Output wander is greater when play is locked to an internal source than when it is locked to external reference.

- The MediaDeck Module supports signals at the **SDI IN** connector that are synchronous to reference and nominally zero-timed to reference, with a maximum wander of up to 3 µsec earlier or 3 µsec later than zero-timed. Input signals that are asynchronous to reference, and signals that are synchronous to reference but which wander outside this timing window are not supported, and may exhibit green lines during the transition to stop mode (E-E).
- Decode timing may be set from **10.74 µsec** to **150.4 µsec** and still allow a transition from stop to decode and decode to stop without green lines and tearing, when a zero-timed SDI signal is present at **SDI IN**.
- **Switching from Play to Stop, or from Stop to Play**: If the decode timing is set outside the window described above, when stop occurs, timing will be set for minimum (**10.74 µsec**) E-E delay, and green lines and/or tearing may occur. However, if the input signal meets the timing requirements listed above, once the transition to E-E has been made, the MediaDeck Module will stabilize on an E-E display without green lines. The MediaDeck Module behaves in the same manner as a FIFO-less SDI switch. Switching occurs on the switch line of the "from" source. Output timing changes instantaneously. Additionally, the MediaDeck Module locks to the SDI input when the MediaDeck Module is not in play mode. This feature minimizes timing disruptions when switching to the play mode, if the SDI input is synchronous with playback.

NOTE: Using the SystemManager application, output timing is accomplished by adjusting the individual Player that is associated with the specific MediaDeck Module. Refer to "Adjusting Output Timing" in the Omneon SystemManager User's Guide for instructions.

About MediaDeck Module Timing

The MediaDeck Module's timing is derived from the Omneon MediaDeck. See **About Omneon MediaDeck Timing** for details.

Serial Control Connections

This section provides information on a variety of cable connections between the MediaDeck Module and control systems. Choose from the following topics:

- **Omneon RJ45/DB-9 Splitter Cable**
- **Omneon RJ45/DB-9 Cable**
- **About RS-422 Grounding**

IMPORTANT: Because manufacturer specifications for cables, connectors and adapters can change, always consult first with your control system vendor for the most current information on interface equipment and peripherals.

NOTE: Depending on the MediaDeck Module, there can be between one and six serial control ports, each of which controls an independent video/audio input or output. You are not required to use all available ports unless you wish to do so.

Omneon RJ45/DB-9 Splitter Cable

Figure 136 illustrates the pinouts and connectors on the Omneon RJ45/DB-9 Splitter Cable. Use this cable to interface with controllers (or cables) using standard SMPTE/EBU ES bus wiring connections. This adapter converts the RJ45 connections on the back of the MediaDeck Module to standard SMPTE/EBU ES Bus.

NOTE: This cable is only intended for use on the MediaDeck Module 5001 where the RS-422 connections for both channels A and B are on one RJ45 jack. This cable splits the two sets of signals out to two DB-9 connectors.

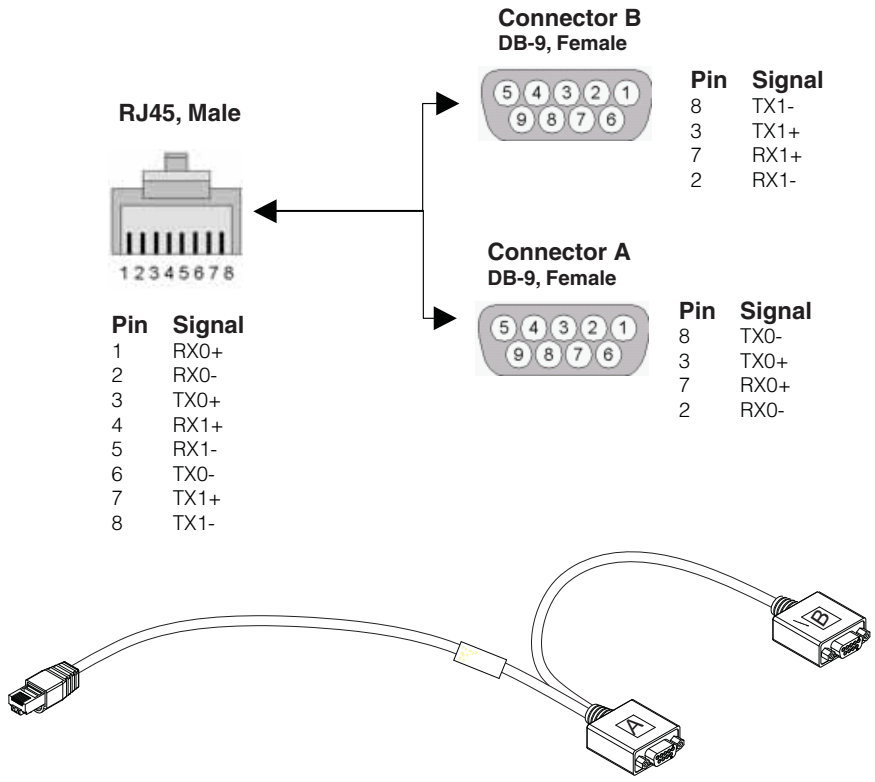


Figure 136. RJ45/DB-9 Splitter Cable

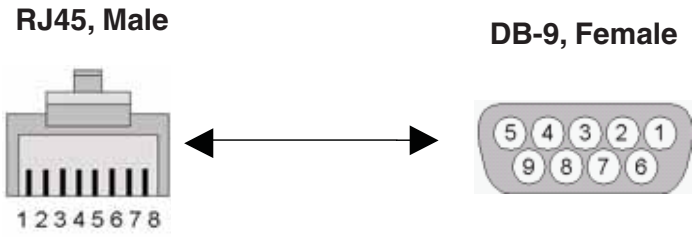
To obtain the necessary interconnection between the MediaDeck Module and the controller, the following methods can be used:

- Omneon RJ45/DB-9 Splitter Cable to Standard RS-422 extension cable
- Omneon RJ45/DB-9 Splitter Cable to Automation System adapter cable.

NOTE: RS-422 extension cables and RJ45 (Ethernet) extension cables should be provided by the customer.

Omneon RJ45/DB-9 Cable

Figure 137 illustrates the pinouts and connectors on the Omneon RJ45/DB-9 Cable. Use this cable to interface with controllers (or cables) using standard SMPTE/EBU ES bus wiring connections. This adapter converts the RJ45 connections on the back of the MediaDeck Module to standard SMPTE/EBU ES Bus.



Pin	Signal
1	RX0+
2	RX0-
3	TX0+
4	RX1+
5	RX1-
6	TX0-
7	TX1+
8	TX1-

Pin	Signal
8	TX0-
3	TX0+
7	RX0+
2	RX0-

Figure 137. RJ45/DB-9 Cable

To obtain the necessary interconnection between the MediaDeck Module and the controller, the following methods can be used:

- Omneon RJ45/DB-9 Cable to Standard RS-422 extension cable
- Omneon RJ45/DB-9 Cable to Automation System adapter cable.

NOTE: RS-422 extension cables and RJ45 (Ethernet) extension cables should be provided by the customer.

About RS-422 Grounding

Note the following regarding RS-422 grounding:

- RS-422 uses differential signaling, much like balanced audio. As long as the chassis grounds of the controller and the MediaDeck Module share a common ground through the AC power connections, no ground connection is needed on the RS-422 cable.
- In some cases, grounding the RS-422 at one end and running a shield around the balanced pairs can reduce noise pickup.

MediaDeck Module Specifications

The following topics are discussed:

MediaDeck Module 5001 Specifications

Table 14. MediaDeck Module 5001 Specifications

Parameter	Specification	Detail
Video I/O	ITU-R BT.601	75 Ohm BNC (SDI Input, Loop, 2 x SDI Output)
Compression/ Decompression	DV (25 Mbps) DVCPRO (25 Mbps) DVCPRO 50 MPEG-2 IMX	DV, DVCPRO, DVCPRO 50 encoding and decoding. MPEG-2, CBR (Constant Bit Rate) support only, video elementary streams, selectable as follows: • Long GOP, 4:2:0 profile at 3 to15.0 Mbps • Long GOP, 4:2:2 profile at 15.1 to 24.9, 50 Mbps • I-frame 4:2:2 at 25 to 50 Mbps • IMX at 30, 40, and 50 Mbps
Audio	AES/EBU, 24-bit input/output 32/44.1/48 KHz input 48 KHz output	8 channels (4 AES pairs), or 16 embedded/de-embedded per SMPTE 272M AC. 75 Ohm BNC connector
	DV Audio Pre-compressed Audio	1 stereo pair, 16-bit, interleaved in DV stream AC-3 and Dolby™ E (pass through)
Control	RS-422 Serial Control	VDCP and BVW Protocol
		RJ45 connector, RJ45 to DB-9 adapter
VBI Recording		Up to 8 lines per field preserved selectable from
	525	Lines 10-21 and 273-284 (both fields)
	625	Lines 7-23 and 320-336 (both fields)
Timecode	LTC	75 Ohm BNC Connector
	VITC	SDI – carried within video

MediaDeck Module 5321 and 5221 Specifications

NOTE: The MediaDeck Module 5221 provides support for SD only.

Table 15. MediaDeck Module 5321 and 5221 Specifications

Parameter	Specification	Detail
Video Input	SMPTE 292M (data and electrical)	75 Ohm BNC (2 x SD-SDI or HD-SDI Input)
Video Output	SMPTE 292M	75 Ohm BNC (2 x SD-SDI or HD-SDI Output)
Compression	MPEG-2 IMX	HD encoding and decoding: • MPEG-2 Long GOP at 18 to 85 Mbps • MPEG-2 I-frame at 50 to 100 Mbps • Encoding of both 4:2:0 and 4:2:2 chroma sampling is supported **NOTE:** The MediaDeck Module 5221 only supports SD encoding and decoding
		SD encoding and decoding: • MPEG-2 Long GOP at 3 to 24.9 Mbps • MPEG-2 I-Frame at 25 to 50 Mbps • IMX at 30, 40, and 50 Mbps
Audio	AES/EBU, 24 bits per sample @ 48 Khz Pre-Compressed Audio	8 channels (4 AES pairs), or 16 embedded per SMPTE 292M AC 75 Ohm BNC connector Pass-through (data mode) of AC-3 and Dolby E
Control	VDCP and limited BVW protocol Omneon Player API	RS-422 interface; RJ45 connector, RJ45 to DB-9 adapter supplied Control of MediaDeck Module 5320 and 5220 Series via software; access via Ethernet to Server
Timecode	LTC SMPTE 328M	75 Ohm BNC connector Supplied in MPEG user data
Closed Captioning	EIA 608, EIA 708	As per SMPTE 334 Formatted per ATSC A/53C
Ancillary Data	SMPTE 328M SMPTE 334 and EIA 708	Timecode, Dolby metadata, Japanese subtitle, user-defined HD-SDI closed caption

MediaDeck Module 5401 and 5501 Specifications

Table 16. MediaDeck Module 5401 and 5501 Specifications

Parameter	Specification	Detail
Video Output	SD: SMPTE 259M HD: SMPTE 292M	75 Ohm BNC MediaDeck Module 5401: One BNC provides one channel of video output that plays simultaneous SD and HD material up-converted or down-converted as necessary. MediaDeck Module 5501: Two BNCs provide two channels of video output, which can be independently configured as either SD or HD outputs.
Compression	ISO 13818-2 (MPEG-2) SMPTE 356M (IMX) SMPTE 314M (SD DV) SMPTE 370M (HD DV)	**HD decoding**: • MPEG-2 Long GOP at 18 to 85 Mbps (4:2:2 and 4:2:0) • MPEG-2 I-frame at 50 to 100 Mbps (4:2:2 and 4:2:0) • DVCPRO HD (100 Mbps)
		SD decoding: • MPEG-2 Long GOP at 3 to 24.9 Mbps (4:2:2 and 4:2:0) • MPEG-2 I-Frame at 25 to 50 Mbps (4:2:2 and 4:2:0) • IMX at 30, 40, and 50 Mbps • DV, DVCPRO, and DVCPRO 50
Internal Up Conversion		**Upconverted HD**: Converts 4:3 aspect ratio SD to HD with choice of HD aspect ratio: horizontally-centered 4:3 pillarbox; 14:9 crop; or anamorphic 16:9 stretch
Internal Down Conversion		**Downconverted SD**: Converts 16:9 aspect ratio HD to SD, with choice of SD aspect ratio: vertically centered 16:9 letterbox; 14:9 crop; anamorhpic 4:3 squeeze
Audio	AES/EBU, 24 bits per sample @ 48 Khz Pre-Compressed Audio	8 channels (4 AES pairs), or 16 embedded per SMPTE 292M AC 75 Ohm BNC connector Pass-through (data mode) of AC-3 and Dolby E

Parameter	Specification	Detail
Control	VDCP and limited BVW protocol Omneon Player API	RS-422 interface; RJ45 connector, RJ45 to DB-9 adapter supplied Control of MediaDeck Module 5400 and 5500 Series via software; access via Ethernet to Server
Timecode	SMPTE 12M	Separate LTC BNC output per video channel VITC
Closed Captioning	EIA 608, EIA 708	As per SMPTE 334 Formatted per ATSC A/53C
Ancillary Data	SMPTE 328M SMPTE 334 and EIA 708	Timecode, Dolby metadata, Japanese subtitle, user-defined HD-SDI closed caption

Audio Sample Rates

Please note:

- If Bit 1 of **Channel Status Byte 0** is 1 or a 96-bit AC-3 digital data sync code is present in the sample stream, the AES/EBU stream is recorded and played back unmodified.
- If Bit 1 of **Channel Status Byte 0** is 0 and a 96-bit AC-3 digital data sync code is not present in the sample stream, the AES/EBU stream is treated as linear PCM digital audio and is sample rate converted from the input rate (which can be anywhere between 32KHz and 48KHz) to 48KHz. Only 48KHz is recorded, and only 48KHz is played back.

If the embedded DV stream audio is also played back through the AES/EBU connections on the MediaDeck Module (that is, there is no additional AES/EBU stream), then any 32 or 44.1KHz material will be re-sampled to 48KHz for playback. Embedded audio (32KHz) plays back as follows:

- (DV, DVCPRO) Channels 1 and 2 on AES/EBU output **1/2** at 48KHz. Channels **3/4**, **5/6** and **7/8** are silent.
- (DVCPRO 50) Channels 1 and 2 on AES/EBU output **1/2**, channels 3 and 4 on AES/EBU output **3/4**, each at 48KHz. Channels **5/6** and **7/8** are silent.

Input audio specifications are identical for both SDI and DV/MPEG at 32/44.1/48KHz. All sample rates are allowed on input, but they are converted to 48KHz. On output, only 48KHz is supported.

CHAPTER 8
Omneon MediaDeck Storage Orientation

This section provides information on the disk drives and storage system for the Omneon MediaDeck.

Choose from the following topics:

Omneon MediaDeck Storage System

The Omneon MediaDeck includes the following storage features:

- 8 disk drive capacity, all contained in a 2 RU chassis. The chassis can house a 6+2 RAID set. All drives install from the front of the chassis.

  Refer to **Supported Configurations** for additional information.
- The disk drives are configured in a Dual Parity (DP) RAID array, ensuring that the system can continue to function despite the simultaneous failure of any two disk drives
- Hot-swappable high-performance SATA disk drives offered with the following storage capacities:
  - 500 GB disk drives, providing a total of 3 TB of usable space
  - 1 TB disk drives, providing a total of 6 TB of usable space

Supported Configurations

The following table shows the available disk drive configurations in the Omneon MediaDeck.

Table 17. Disk Drive Configurations

# Drives	RAID Sets	Capacity per Drive	Storage Capacity
8	6+2	500 GB	3 TB
8	6+2	1 TB	6 TB

NOTE: No other disk drive configurations are supported.

Front View

To access the disk drives, you must first remove the front bezel.

To remove the front bezel:

1. Loosen the four captive thumb screws that secure the bezel to the chassis.
2. Pull the bezel directly away from the chassis.

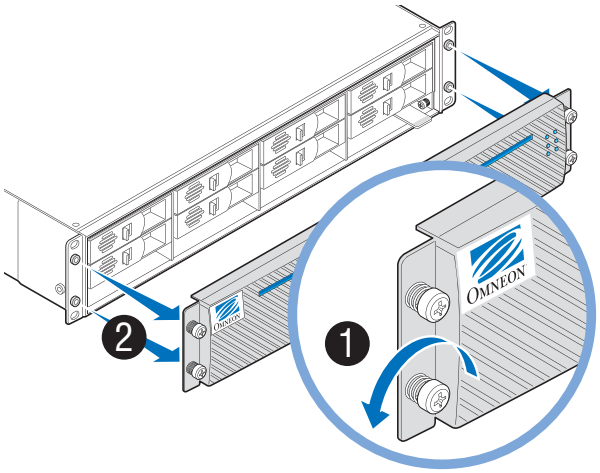


Figure 138. Removing the Bezel

Figure 139 illustrates a front view of the Omneon MediaDeck disk drives

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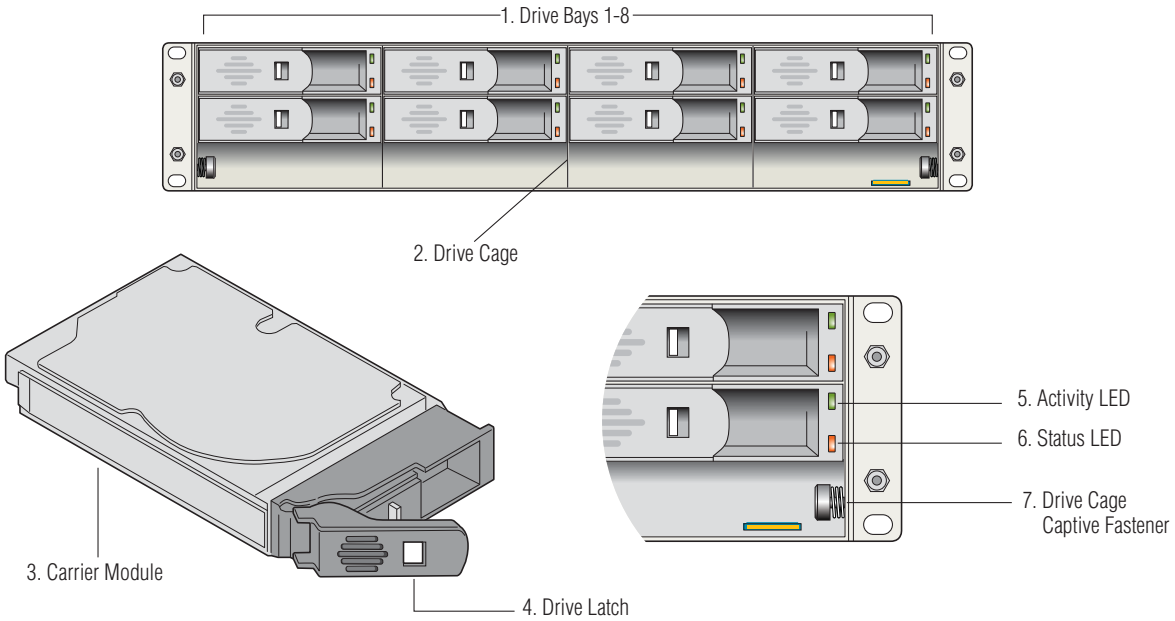

Figure 139. MediaDeck Disk Drives

Following are descriptions of each section.

1. **Drive Bays**

   The drive cage assembly contains 8 **Drive Bays** at the front, each of which accommodates a plug-in drive carrier module. A bay is defined as the space required to house a single 1.0 inch high 3.5-inch disk drive in its carrier module. The 8 drive bays are arranged in 2 rows of 4 drives each. As viewed from the front of the chassis, bay numbers are defined as follows:

Drive 1	Drive 3	Drive 5	Drive 7
Drive 2	Drive 4	Drive 6	Drive 8

   NOTE: Disk drives can be installed in any order.

2. **Drive Cage**

   The Omneon MediaDeck **Drive Cage** consists of a sheet metal enclosure assembly containing a Backplane PCB and module runner system. The disk cage comes installed in the Omneon MediaDeck chassis.

3. **Drive Carrier Module**

   A **Drive Carrier Module** houses a single 1.0-inch high, 4-inch wide disk drive.

   Each die-cast aluminum carrier provides excellent thermal conduction, radio frequency and electro-magnetic induction protection and affords maximum protection for the drive.

4. **Drive Latch**

The **Drive Latch** releases the carrier handle, allowing you to remove and install the Drive Carrier Module.

5. **Activity LED**

   The Drive Carrier Module's upper **Activity LED** (Green) has three states:

   - Off: the drive has failed or the drive is unplugged.
   - On, solid: the drive is idle.
   - Blinking: the drive is active.

6. **Status LED**

   The Drive Carrier Module's lower **Status LED** (Amber) has three states:

   - Off: the drive has failed or the drive is unplugged.
   - On, solid: the drive is functioning normally.
   - Blinking: the drive is being winked or is being rebuilt.

7. **Drive Cage Fasteners**

   The Omneon MediaDeck has two captive drive cage fasteners, which attach the drive cage to the chassis.

Omneon MediaDeck Disk Drive Troubleshooting

Choose from the following topics:

- **About Data Security**
- **Replacing a Disk Drive (Hot Swapping)**

About Data Security

Note the following important points regarding data security.

- Disk units are fragile. Handle them with care, observe static electricity precautions, and keep them away from strong magnetic fields.
- If you remove a drive module, replace it immediately. If it is faulty, replace it with a drive module of the same type and capacity.
- Ensure that all disk drives are removed from the enclosure before attempting to manhandle or move the rack installation.

About the Automatic Diagnostic for New Disk Drives

When a new disk drive (that is, never used by an Omneon system) is installed in a MediaDeck, the software automatically performs a diagnostic to ensure the performance of the disk drive. This

diagnostic takes approximately five minutes. When installing multiple disk drives, the diagnostic is performed in parallel on all new disk drives.

- If a new disk drive passes the diagnostic, the drive is made available to the file system and no action is required.
- If a new disk drive is found to be usable but has performance issues, an alarm will appear in SystemManager indicating that the drive has marginal performance. For information on viewing alarms, refer to "Viewing and/or Clearing Alarms" in the *Omneon SystemManager User's Guide*. For assistance, contact Omneon Technical Support.
- If a new disk drive is found to be unusable, the bottom status LED will be OFF, and an alarm will appear in SystemManager indicating the cause. Follow the instructions in **Replacing a Disk Drive (Hot Swapping)** to replace the disk drive. For assistance, contact Omneon Technical Support.

Replacing a Disk Drive (Hot Swapping)

The Omneon MediaDeck contains high-performance SATA disk drives that can be hot-swapped during operation without interrupting the use of the system.

NOTE: To avoid potential audio/video disruption stemming from hot swapping a disk, the disk in question should be removed from its RAID set prior to removing it from the disk enclosure.

In the event of disk drive failure, replacement disk drives are available from Omneon. Refer to the **Audio Track Types and Media Wrapper Formats** section for information on how to request technical support.

To assist in drive problem diagnosis and remediation, please gather the information below for use by Omneon Technical Support. You will need to collect some of this information *before* you remove the failing/failed disk drive:

- **Site Location**
- **Server Name**
- **Date of Failure**
- **Time of Failure**
- **Description of Failure**
- **From the Omneon MediaDeck Properties page on the SystemManager Application:**
  - **Omneon MediaDeck Firmware Version**
  - **Omneon MediaDeck Host Name**
  - **Omneon MediaDeck Serial Number**

Refer to for additional information.

- **From the Drive Properties page on the SystemManager Application**:
  - **Disk GUID**

- **Disk Serial Number**
- **Disk Size (GB)**

Refer to for additional information.

- **From the SystemManager Platform or Client PC, use Windows Explorer to navigate to: \\IPADDR\FSNAME\omD7NNNNN\logs**

  IPADDR = IP Address or host name if using DNS
  FSNAME = File System Name
  D7 = Omneon MediaDeck model type
  NNNNN = Serial number of unit

  and locate the following:

  - Badblockhistory.txt
  - syslog_D7_NNNNH0_YYYY_MM_DD_hh_mm_ss.log

    NNNN = Serial number of unit
    YYYY = Year of log start
    MM = Month of log start
    DD = Day of log start
    hh = Hour of log start
    mm = Minute of log start
    ss = Second of log start.

Once you obtain a Return Authorization Number (RA) from Omneon Technical Support, email a copy of this file to support@Omneon.com quoting the RA number.

CAUTION: Observe all conventional ESD precautions when handling Omneon MediaDeck Storage modules and components. Avoid contact with backplane components and connectors.

CAUTION: Drive spin-down. Damage can occur to a drive if it is removed while still spinning. We recommend that you perform *all* steps in the following procedure. Before removing a drive from an enclosure, wait 30 seconds to ensure that the drive has stopped spinning.

To replace (hot swap) a disk drive in the Omneon MediaDeck:

1. Ensure that you have a replacement drive from Omneon on hand.

IMPORTANT: Use ONLY Omneon-supplied replacement disk drives. Disk drives from any other source will be excluded from coverage under the Omneon product limited warranty and maintenance services programs. In addition, any errors or damages caused by the use of disk drives provided from any other source will cause the entire product to be excluded from coverage under the Omneon product limited warranty and maintenance services programs.

THE PERFORMANCE OF YOUR MEDIADECK MAY BE ADVERSELY AFFECTED BY THE USE OF COMPONENTS NOT SUPPLIED BY OMNEON.

NOTE: The drive size (in GB) and form factor must match the other drives in the enclosure. Replacement drives should have the same or greater drive capacity as those they are replacing.

2. Remove the bezel. To remove the bezel:
   a. Loosen the four captive thumb screws that secure the bezel to the chassis.
   b. Pull the bezel directly away from the chassis.
3. In SystemManager, from the **Drive Properties** page for the drive, click **Fail drive** to fail the drive.

   View the **Disk Utilities** page for Omneon MediaDeck to verify that the drive state is reported as **Dead, Failed.**
4. From the **Disk Utilities** page, find the physical location of the drive and note the state of the LEDs for this drive as follows:
   a. The top Activity LED should be steady green, indicating that the drive is not being actively used. If it is blinking, this is the *wrong* drive to remove.
   b. The bottom Status LED should be **off**.
5. If you identify the same drive when performing steps 4a, 4b, and 4c (if applicable), proceed to the next step. If not, call Omneon Technical Support and *do not* continue with this procedure.
6. Wait 30 seconds before unlatching the drive at the physical location indicated in **Step 4**. Wait an *additional* 30 seconds before removing the drive from the enclosure. To remove the disk drive:
   a. Open the latch on the front of the disk drive by pressing the tab to the right while pulling the lever back as shown in **Figure 140**.
   b. Slide the disk drive out of the drive bay.

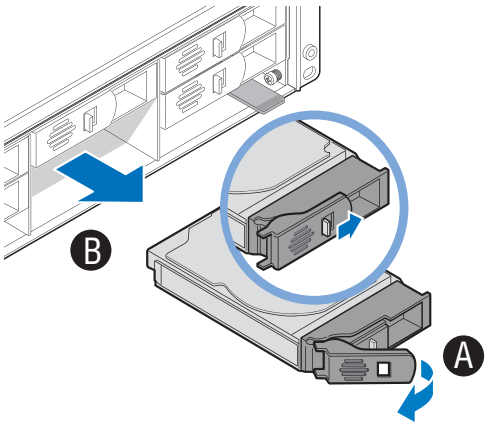

Figure 140. Removing the Disk Drive

7. On the **Add/Remove Drives** page, click **Remove** next to the drive to "hide" the drive from view on the **Disk Utilities** page in the future.

   Tip: To find each drive view: from the **Configuration** tab, click the **Disk Utilities** icon on the left to access the **Disk Utilities** page. Click on the Omneon MediaDeck with the required disk drive(s) to display the associated drive views.

8. Compare the serial number found on the top of the drive with the serial number found on the **Drive Properties** page.

   If the serial numbers match, continue to **Step 9**.

   If the serial numbers *do not* match, wait at least 15 seconds after removal, then reinsert the drive. Call Omneon Technical Support immediately, and *do not* continue with this procedure.

   NOTE: It is critical that you identify the correct disk drive. Comparing the serial number on the disk drive to the serial number displayed in SystemManager is the best way to do this.

9. Insert a replacement drive:

   a. Open the latch on the front of the disk drive by pressing the tab to the right while pulling the lever back as shown in **Figure 141**.

   b. Insert the disk drive all the way into the enclosure until the camming lever on the left side of the carrier stops it.

   c. Gently push the camming lever towards the enclosure until it clicks into a closed position.

   NOTE: Keep in mind that the handle should always open from the right.

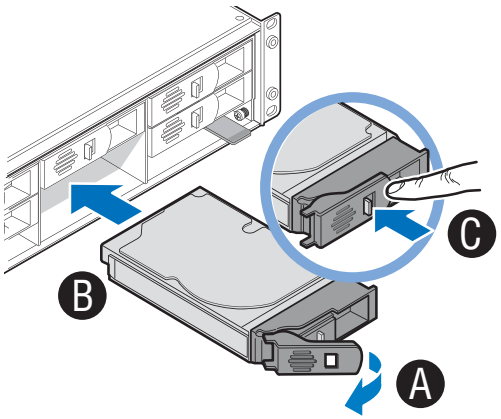

Figure 141. Installing a Disk Drive

10. Within three minutes, the new drive should appear on the **Disk Utilities** page on the SystemManager application. Verify that the drive is reported as **Alive** by the Omneon MediaDeck. Continue to **Step 11**.

    If the drive is not reported as **Alive** by the Omneon MediaDeck, bypass the drive (following the instructions in **Step 3**), remove the drive, and replace with another drive if available. Repeat this step (**Step 141**) and if successful, continue to **Step 11**.

    If you do not have another drive available, contact Omneon Technical Support.

    An automatic rebuild will commence on this drive. Skip to **Step 11**. If an automatic rebuild does not commence on this drive, contact Omneon Technical Support.

11. On the **RAID Utilities** page, monitor the status for the RAID set.

The status should change from **Compromised** to **Rebuilding** immediately. If it does not, start the rebuild manually by clicking on **Start Rebuild**.

12. Periodically monitor the rebuild until complete. Once complete, RAID set status will change to **Normal, Attached, Viable**.

This completes the procedure.

NOTE: If you replaced a failed drive with a new drive from Omneon, use the packaging materials (carton, cushion, and electrostatic sensitive bag) from the replacement disk drive to carefully repackage the failed drive and return it promptly to Omneon for analysis. Contact Omneon Technical Support for a Return Authorization Number (RA) before shipping the drive back to Omneon. Refer to **Audio Track Types and Media Wrapper Formats** for contact information and a shipping address.

About Proactive Drive Alarming and Removal

Choose from the following topics:

- **Overview of Proactive Drive Alarming and Removal**
- **Notes about Proactive Drive Alarming and Removal**

Overview of Proactive Drive Alarming and Removal

The Proactive Drive Alarming and Removal feature enhances the ability of the MediaDeck to detect and recover from various drive error conditions, while minimizing disruption to the system.

There are several drive error conditions that will cause the system to attempt to mark a drive as bad and remove it from the associated RAID Set. Since failing an active drive in a RAID Set can cause the RAID Set to become compromised, several checks are done prior to failing the drive. A drive is proactively removed from the RAID Set only if the following conditions are true:

- The Filesystem has been started.
- All drives in the RAID Set are on-line and ready.
- No more than one other drive in the RAID Set has bad blocks.
- The target drive belongs to a RAID Set that is not compromised, rebuilding, or is the rebuild target.

Additional drive conditions that prevent a drive from being auto-failed include:

- The drive is in the process of a bad block repair.
- The drive is in the process of a drive firmware upgrade.
- The drive is being formatted.

NOTE: For **Persistent Login Failures** and **Insubordinate Disks,** the conditions mentioned above do not apply. Drive are autofailed regardless of the state of the file system or other drives in the drive's RAID set.

Disk read/write errors can be either persistent or intermittent:

- **Persistent Errors** : An error at the same disk drive address that recurs at least 5 times on writes or 10 times on reads. This error is sometimes referred to as a "**Hard Error**."
- **Intermittent Errors**: An error that the same disk drive address that recurs less than 5 times on writes and less than 10 times on reads. This error is sometimes referred to as a "**Soft Error**."

The SystemManager Application reports on the following drive error conditions:

- **SMART Warnings**: Critical alarms (red) are generated for any drive that issues a SMART warning. Drives that exhibit SMART warnings will attempt to be auto-failed by the Omneon MediaDeck and should be replaced as soon as possible.
- **Hardware Errors**: Critical alarms (red) are generated for any drive that issues a Hardware error. Drives that exhibit hardware errors will attempt to be auto-failed by the Omneon MediaDeck and should be replaced as soon as possible.
- **Write Errors**: Warning alarms (yellow) are generated for any drive that reports write errors. Write errors are errors that can occur occasionally on any system and do not, by themselves, imply catastrophic drive failures.
- **Read Errors**: Warning alarms (yellow) are generated for any drive that reports read errors. Read errors are errors that can occur occasionally on any system and do not, by themselves, imply catastrophic drive failures. Drives that exhibit any combination of read/write errors at different disk drive addresses will attempt to be auto-failed by the Omneon MediaDeck provided the RAID Set criteria mentioned above is met.
- **Auto-Fail Starting**: Failure alarms (orange) are generated for any drive that exhibits a problem requiring it to be removed from the RAID Set. This alarm will report that the Auto-fail process is queued and provide the reason for the attempted auto-failure.
- **Auto-Fail Succeeded**: Warning alarms (yellow) are generated for any drive that is successfully removed from the RAID Set following the auto-fail starting alarm. If this alarm is generated, the drive will already have been failed. A rebuild should be started on the RAID Set, and this drive should be removed from the enclosure and replaced with a good drive.
- **Auto-Fail Not Successful**: Critical alarms (red) are generated in the for any drive that is not successfully removed from the RAID Set following the auto-fail starting alarm. If this alarm is generated, a reason is given and user intervention is needed to correct the situation. Drive auto-fail attempts are retried in five-minute intervals until the drive is successfully failed or the error condition has been resolved. Reason codes and suggested user actions are as follows:
    - **RAID Set Compromised**: A replacement disk needs to be added to the RAID Set to allow a rebuild of the RAID Set. Once the rebuild has completed, an additional hot spare should be added to the RAID Set to allow for the failure of the bad drive.
    - **RAID Set Rebuilding**: The auto-fail will proceed once the rebuild operation is complete.
    - **Bad Blocks in RAID Set**: Bad blocks on other drives in the RAID Set can cause the rebuild to stall, which could result in data loss. As a result, a drive cannot be auto-failed if there are other drives in the RAID Set with bad blocks. The drive should be auto-failed by the Omneon MediaDeck once the bad blocks are repaired.

CAUTION: If an auto-fail is unsuccessful, be cautious when manually failing or removing any drives in the RAID Set. Failing another drive on a rebuilding RAID Set or a compromised RAID Set could cause all Omneon MediaDecks to stop the file system.

- **Disk Readiness Test Failure**: A warning alarm (yellow) is generated for any drive that fails a Disk Readiness Test. Every four hours approximately, each disk in the system is tested for readiness. This test is transparent for disks that are currently in use, but allows any disk that is otherwise idle to indicate whether it believes itself ready for use. A drive may respond to this by generating a SMART warning or Hardware error, which are discussed above, but it may also fail to respond at all. In this case, the Omneon MediaDeck will report a **Disk Readiness Test Failure**.

Notes about Proactive Drive Alarming and Removal

Additional information regarding Proactive Drive Alarming and Removal is as follows:

- Alarms are generated for Warning level situations in addition to alarms for Critical and Failure level situations. You can also choose to alarm on Informational level situations. Informational alarms represent messages that usually do not require user action but do provide context for the overall operation of the system.

CAUTION: Use caution if setting the alarming level to include informational alarms when using the email notification feature to sent alarms to a pager. In some cases, SystemManager application alarms can be sent frequently.

Refer to “Filtering Alarms” in the *Omneon SystemManager User’s Guide* for instructions on how to select alarming levels.

- Disk polling and scrubbing capabilities identify silent disk drive failures, provoke alarms through the SystemManager application, and ensure the availability of all disks in a RAID Set. The purpose of these enhancements is to proactively identify disk issues before they impact the normal functioning of a system. Note however, that they may result in a slight elevation of the frequency in which errors are reported.
- For additional information on disk drive alarming and removal, refer to **Viewing Drive Properties** and “Viewing and Clearing Alarms” in the *Omneon SystemManager User’s Guide*.

Omneon MediaDeck Disk Drive Specifications

This section provides information on the Omneon MediaDeck Disk Drive hardware specifications.

Drive Carrier Module Specification

Please contact your supplier for details of approved drives.

IMPORTANT: Operating the Omneon MediaDeck with non-approved drives may invalidate the warranty.

Table 18. Drive Carrier Module Specification

Parameter	Specification
Module Dimensions	Height: 26.1 mm (Max) Length: 147 mm (Max) Width: 101.6 mm
Weight	0.60 kg
Operating Temperature	5° C to 60° C
Power Dissipation	Read/Write: 10.75 Watts Idle: 8.90 Watts Standby: 2.00 Watts Sleep: 2.00 Watts

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