

# CMS-2200 Cinema Media Server

# Installation and User Manual

USL Inc.

# 1.0 USL Cinema Media Server Manual

## Introduction – CMS-2200

The USL Cinema Media Server (CMS-2200) represents the latest technology in cinema systems. The powerful CMS-2200 hardware combined with the screen management system software (SMS) and the theater management software (mini-TMS) are designed to provide a complete digital cinema solution. The CMS-2200's rich feature set includes JPEG and MPEG DCP decoding in addition to full HDMI 1.4 support including HDMI 3D.



JPEG (2K, 4K, HFR) and MPEG

LTC sync and 3DLS built in

#### **Key Features:**

- Solid State Storage: 3 x 1TB
- Decoders:
- Alternate Content: HDMI 1.4b with 3D and HD-SDI
- Ingest ports: eSATA and USB 3.0
- Automation: Ethernet and CMSA-100
- Multi-Projector:
- Object Based Sound: OBS capable with software updates

Note: This CMS-2200 installation and user manual is a work in progress and changing on a daily basis. USL is committed to continuous improvement on this document as the CMS-2200 software and features are solidified and introduced to the field. Early releases of this manual are being provided as guidance while the documentation work continues. Please check with USL for the formally released Installation and User manual that will be provided as soon as it's available.

## Introduction - SMS software

The USL screen management system software provides a concise, intuitive software solution to managing multiple CMS-2200 systems from a single, highly integrated platform. In addition to the core tools required to manage content, build playlists and schedule shows, the SMS provides information rich overview screens to allow instant access to the overall cinema status.

#### **Key Features:**

- Multi-Screen Management:
- Mini-TMS functionality built-in

Windows/Android/Apple OS

- Media Transfer:
- Mobile Enabled:
- User Interface:
- Automaton:

• Support Tools:

Built-in support for projectors and USL products Web interface included

FTP support built-in

Clear, concise, intuitive

- 0 **X** Show Manager Theater Overview Media Servers 0061 Theater 2 (HEX) Seth's Test Board (theater 2) Screen 23 - USL0020 Theater 3 USL0059 3ALITY-SPLASH-DEMO SHR F EN-3ALITY-SPLASH-DEMO SHR F EN-XX .... 0% Samsara Free Birds Free Birds ring\_TLR-1\_F\_EN-XX\_US-G -BIRDS\_FTR\_F\_EN-EN-CCAP\_OV\_5 -BIRDS\_FTR\_F\_EN-EN-CCAP\_OV\_5. Lamp: Off Douser: Clo Lamp: Off ojector: Barco 23b Address: 192.168.7.10 ojector: Barco 23b Address: 192.168.7.17 ojector: Barco 23b Address: 192.168.7.32 jector: Barco 23b ddress: 192.168.7.79 Online Online Online Online Conference Room 32B Rick's Desk Bill's Test Mike's miniature theater Show Manager Setting: Lots of fun test The Samsura Show Bad Show Free Birds E-BIRDS\_FTR\_F\_EN-EN-CCAP\_OV ation:01:33:59 AMSARA\_FTRv3\_S\_EN-XX uration:01:42:04 0 Welc Lamp: Off Douser: Close Lamp: Off Douser: Close Lamp: Off Douser: Close Lamp: Off Douser: Close rojector: Barco 23b Address: 192.168.1.28 Projector: Barco 23b P Address: 192.168.1.133 Projector: Barco 23b P Address: 192.168.1.244 Projector: Barco 23b P Address: 192.168.1.61 Online 🦲 Online 🛛 📵 Online 🔬 Online 😜 Mini-Palm 1 Mini-Palm 1 Mini-Palm 2 Mini-Palm 3 Free Birds Just Samsara Trailer Test 2 Free Birds E-BIRDS\_FTR\_F\_EN-EN-CCAP\_OV\_5. ation:01:44:50 728 MSARA\_FTRv3\_S\_EN-XX\_RU\_71\_4K ation:01:42:04 0 led\_TLR-1-2D\_F\_EN-XX\_US-GB\_5... ion:00:31:05 89 E-BIRDS\_FTR\_F\_EN-EN-CCAP\_OV\_5 ration:01:44:50 73 Lamp: Off Douser: Close Lamp: Off Douser: Close Lamp: Off Douser: Close Lamp: Off Douser: Close rojector: Barco 23b 2 Address: 10.208.48.111 Projector: Barco 23b IP Address: 10.208.48.151 Projector: Barco 23b P Address: 10.208.48.152 Projector: Barco 23b P Address: 10.208.48.153 Online Online Online Online Add Media Server Add Media Server List Remove All Login Overview

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# CMS-2200 Conformance Declarations

#### Europe Union (CISPR 22)

The USL CMS-2200 complies with the EMC requirement of EN55022 and EN55024 when operated in accordance with this manual.

**Warning**: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

#### FCC

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 this 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 their own expense.

#### Canada

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil de la classe A est conforme à la norme NMB-003 de Canada.

## Video Training

USL has produced training videos for the CMS-2200 to cover installation, use and troubleshooting.

#### Video training titles include:

- Parts and Installation
- SMS Install
- Ingesting Content
- Playing Content
- Troubleshooting
- SSD Replacement

- CGI Interface
- System Settings
- Building a playlist
- The Scheduler
- Battery Replacement

The training videos are available at:

http://www.uslinc.com/index.php?option=com\_content&view=article&id=98:productvideos&Itemid=131

# Important Safety Instructions

- 1. Read these instructions.
- 2. Keep these instructions.
- 3. Follow all instructions.
- 4. Do not use this apparatus near water.
- 5. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- 6. Clean only with dry cloth.
- 7. Only use attachments/accessories specified by the manufacturer.
- 8. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way.
- 9. This equipment is intended for installation in a restricted access location.

**Caution**: Troubleshooting must be performed by a trained technician. To reduce the risk of electric shock, do not attempt to service this equipment unless you are qualified

#### Battery Caution:

There is a **Risk of Explosion** if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions and local law. Replace only with the same or equivalent type.

#### Product End of Life Information



This product was designed and built by USL to provide many years of service, and is backed by our commitment to provide high-quality support. When it eventually reaches the end of its serviceable life, it should be disposed of in accordance with local or national legislation.

## **Product Contents**

- CMS-2200 Cinema Media Server
- □ Front panel security label (for Barco projectors)
- □ Quick Start Guide (printed)
- □ Documentation (DVD)
  - CMS-2200 Installation and User Manual
  - CMS-2200 product registration form
  - Conformance document
  - CMSA-100 Manual

# CMS-2200 Registration Form

To meet forensic marking requirements USL must track the CMS-2200 systems and the installed location. USL is committed to making this process as quick and easy as possible. This form can be sent electronically to USL via email, or it can be printed and faxed to (805) 549-0163.

By email: Please use support@uslinc.com

Insert CMS-2200 Registration in the subject line.

Cinema Information:				
Cinema Circuit				
Cinema Name				
Address 1				
Address 2				
City				
County/Province/State				_
Postal Code/Zip				_
Number of Screens				-
Contact Information:				
First Name				
Last Name				
Email Address				
Telephone				
CMS-2200 Information:				
CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
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CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
CMS-2200 Serial Number		Scre	en Name or Number	
Ontional Information				
		Jolhy 3D		Other 3D
		Ising HD-SDI	Using HDMI	
Using CMSA-1	00 🗆 F	Barco Projector	□ NEC Projector	□ Christie Projector

# CMS-2200 Product Specifications

# Supported JPEG rates

Resolution	Aspect Ratio	Frame Rates		
4K Rates				
4096 x 1716	2.39:1 Scope	24, 25, 30		
3996 × 2160	1.85:1 Flat	24, 25, 30		
4096 x 2160	<b>2160</b> Full 4K 24,25, 30			
2K / 2D Rates				
2048 x 858	2.39:1 Scope	24, 25, 30, 48, 50, 60		
1998 × 1080	1.85:1 Flat	24, 25, 30, 48, 50, 60		
2048 x 1080	Full 2K	24, 25, 30, 48, 50, 60		
2K / 3D Rates				
2048 x 858	2.39:1 Scope	24, 25, 30, 48, 50, 60		
1998 × 1080	1.85:1 Flat	24, 25, 30, 48, 50, 60		
2048 x 1080	Full 2K	24, 25, 30, 48, 50, 60		

Table 1-1. Supported JPEG Rates

# Supported HDMI rates

#### 2D Formats

Video Code	Format Definition	Aspect Ratio
1	640x480p@59.98/60Hz	4:3
2	720x480p@59.98/60Hz	4:3
3	720x480p@59.98/60Hz	16:9
4	1280x720p@59.98/60Hz	16:9
16	1920x1080p@59.98/60Hz	16:9
17	720x576p@50Hz	4:3
18	720x576p@50Hz	16:9
19	1280x720p@50Hz	16:9
31	1920x1080p@50Hz	16:9
32	1920x1080p@23.98/24Hz	16:9
33	1920x1080p@25Hz	16:9
34	1920x1080p@29.97/30Hz	16:9

Table 1-2. Supported 2D HDMI formats

#### 3D Formats

Video Code	Format Definition	3D Format
32	1920x1080p@23.98/24Hz	Frame Packing
4	1280x720p@59.98/60Hz	Frame Packing
19	1280x720p@50Hz	Frame Packing
5	1920x1080i@59.98/60Hz	Side-by-Side (Half)
20	1920x1080i@50Hz	Side-by-Side (Half)
32	1920x1080p@23.98/24Hz	Top-and-Bottom
4	1280x720p@59.98/60Hz	Top-and-Bottom
19	1280x720p@50Hz	Top-and-Bottom

Table 1-3. Supported 3D HDMI rates

### Supported HD-SDI rates

Color	Mode	Resolution	Rate	SDI Mode	Width	Height
YCbCr	4:2:2	10-b	24-30 + psf	1x 1.5G	1920	1080
YCbCr	4:2:2	10-b	48-60	2x 1.5G	1920	1080
RGB	4:4:4	10-b	24-30 + psf	2x 1.5G	1920	1080
YCbCr	4:4:4	10-b	24-30 + psf	2x 1.5G		
RGB	4:4:4	12-b	24-30 + psf	2x 1.5G	1920	1080
YCbCr	4:4:4	12-b	24-30 + psf	2x 1.5G		
YCbCr	4:2:2	12-b	24-30 + psf	2x 1.5G		
YCbCr	4:2:2	10-b	48-60	1x 3G	1920	1080
RGB	4:4:4	10-b	24-30 + psf	1x 3G	1920	1080
YCbCr	4:4:4	10-b	24-30 + psf	1x 3G		
YCbCr	4:4:4	12-b	24-30 + psf	1x 3G	1920	1080
RGB	4:4:4	12-b	24-30 + psf	1x 3G		
YCbCr	4:2:2	12-b	24-30 + psf	1x 3G	1920	1080

Table 1-4. Supported HD-SDI Rates

## Supported MPEG rates

Resolution	Aspect Ratio	Frame Rates
1920 x 1080	2.39:1 Scope	23.98, 24, 25, 29.98, 30, 48, 50, 60
1920 x 1080	1.85:1 Flat	23.98, 24, 25, 29.98, 30, 48, 50, 60

Table 1-5. Supported MPEG rates

# 2.0 CMS-2200 Configurations

The CMS-2200 is a flexible design that can be easily applied to any size cinema application. This section describes three possible configurations: a small single screen; a medium triplex with manager's station; and a large multiplex with storage server.

# Single Screen

The single screen configuration illustrated in Figure 2-1 is an example of a simple installation with a SMS station and projector located on a management network. For content ingest, the media can be connected directly to the CMS-2200 via eSATA or USB 3.0.





**Options:** If an installer chooses to setup a Media Network, content can be connected to the SMS control station and sent to the CMS-2200 using the Data B port.

The SMS software can be installed on mobile devices, allowing wireless control of the CMS-2200 with the setup of a wireless router and a network switch.

# **Multiplex Configuration**

Figure 2-2 illustrates a multiscreen configuration that includes a manager station and/or NAS server for content ingest and storage. Content ingests can be accomplished at the managers station or the NAS server. Once ingested, content can be quickly distributed to the multiple CMS-2200 systems. The **Media** network is used to distribute content to the CMS-2200 units, while the **Management** network carries the control functions between the SMS software and the projectors.

Note that the manager's station has network connections to both the Media and the Management networks. For automation, the ETH ports on the CMS-2200 may be used to communicate with external equipment over Ethernet, or the CMSA-100 may be used to provide automation functionality. The **Automation** and **Management** networks can be merged to handle both functions on the same network and simplify the configuration.





**Note:** Only three projectors are shown above, but the configuration can scaled out to a larger number of screens to support any complex network topology. Refer to Section 3.0 for more information on the Management and Media networks as well as suggested IP address schemes.

# 3.0 CMS-2200 Cinema Media Server

# CMS-2200 Hardware

The USL CMS-2200 hardware is USL's state of the art cinema media server. This section will describe the CMS-2200 hardware connections and physical installation.

#### **Ethernet Connections**

The Ethernet Data Connections are identified in Figure 2-1. There are three Ethernet ports, Data A, Data B and AUX Ethernet. The typical network configuration for the CMS-2200 is to have a **Management** network and a **Media** network. USL recommends this network configuration for proper operation of the CMS-2200.

#### Management Network

The **AUX** Ethernet connection is for the **Management** network. This network is used for SMS connections, along with Ethernet automation and auditorium control. Single screen configurations can operate with only the management network.

#### Media Network

For multi-screen configurations the **Data B** port is used for the **Media** network connection. The media network is used for content transfer. This connection is used to support ftp file transfer of content from a manager's station or TMS system.

**Data A** is an additional port that is intended for future expansion. It is currently disabled, but it could be used as an independent Ethernet port or bound to Data B for higher bandwidth in the future. The two **Fiber Data** ports are fiber SPF cages that will accept fiber optic interfaces. The fiber optic ports are matched to the data A and data B ports. If a fiber optic module is installed, the CMS-2200 will automatically use the fiber optic port and not the Ethernet data inputs for the media network.



Figure 3-1. Ethernet and fiber data ports

#### Audio Outputs

There are two **Audio Output** ports that provide 16 channels of AES/EBU audio. The connections for each port are listed in the table. Standard CAT-5 cables may be used to directly connect these ports to the cinema audio processor.

RJ-45 Pin	Signal	RJ-45 Pin	Signal
1	AES 1-2 +	1	AES 9-10 +
2	AES 1-2 -	2	AES 9-10 -
3	AES 3-4 +	3	AES 11-12 +
4	AES 5-6 +	4	AES 13-14 +
5	AES 5-6 -	5	AES 13-14 -
6	AES 3-4 -	6	AES 11-12 -
7	AES 7-8 +	7	AES 15-16 +
8	AES 7-8 -	8	AES 15-16 -

Audio channels one through eight are available on the top port, so a single connection can be used to cover 5.1 and 7.1 audio configurations.

Table 3-1. Audio connections



Figure 3-2. Audio, Automation and Sync Connections

The **Automation** port is designed specifically for the CMSA-100 automation controller. This port can be used in two ways. The first option is to connect this port via a standard Ethernet cable (CAT-5) to the CMSA-100 automation controller. A second option is to use the automation port directly as a four output, two input automation connection.

The connections for the automation port are listed in the table below. Note that this port is NOT an Ethernet port. It will not function properly should it be connected to a network switch or hub. The port is specifically designed as a point-to-point connection.

RJ-45 Pin	Signal	RJ-45 Pin	Signal
1	Out 1	5	+12V DC
2	Out 2	6	In 1
3	Out 3	7	In 2
4	Out 4	8	GND

Table 3-2. Automation connections

#### Sync In, Sync Out

The **Sync In** and **Sync Out** connections are designed for large screen and multi-projector applications (3DLS). The Sync Out connection provides standard (SMPTE 12M) LTC output for synchronizing external equipment. Section 12 describes multi-projector 3DLS application configurations.

#### Alternate Content Inputs

The CMS-2200 provides both HDMI and HD-SDI alternate content inputs. **HDMI-A** and **HDMI-B** are independent HDMI 1.4 compliant ports that support HDMI 3D. The **HD-SDI** input supports single and dual-link HD-SDI. The supported video rates for the HDMI and HD-SDI ports are listed in Section 1 under product specifications.



#### Ingest Ports

For content and KDM ingests the CMS-2200 provides both an eSATA port and two USB 3.0 input ports. The eSATA port can supply power to support certain drives with combo power/data cables.

#### Serial Number

The CMS-2200 serial number label is located in the center of the front panel and is used to uniquely identify the CMS-2200 for KDMs. The serial number is in the format of **USL1234** and is also encoded in the barcode on the label. Please refer to this serial number when communicating with USL service and support as USL keeps a complete product history for each CMS-2200 serial number.



There are a number of LED indicators on the CMS-2200 for status and activity. Below the data inputs are the Ethernet Link and Activity LEDs. Above the eSATA port are the SSD drive status indicators. They will flash green for activity on each of the four SSD drives.

LED Name	Function	Notes
Power	Power is at the CMS-2200	
Status		
Ready	The CMS is ready and functional	
Sync		
Drives 1-4	SSD Drive Activity	Green when in use.
IN		
ACT A – B	Data Input Activity LEDs	Ethernet port activity
Link A - B	Data Input Link LEDs	Ethernet port link

The CMS Status LED functions are listed in the table below.

Table 3-3. LED functions

The reset button is be used to reset the CMS-2200. In normal operation reset should not be used and is not required. Reset will force a hard reset of the IMB, the ISS, and all processors in the hardware.

			/	SSD	Drive Status	
	AUDIO OUTPUT CH CH CH CH CH CH CH CH CH CH CH CH CH		DRIVES 1 2 3 4 IN esata Status Status Survas Bando	HD-SDI B	CINEMA MEDIA SERVER CINEMA MEDIA SERVER HDMI 2 HDMI 2 N SYNC OUT	
Ethernet Act	ivity	Reset		CMS St	atus	

Figure 2-5. Status LEDs and Reset

# CMS-2200 Installation

For experienced users the CMS-2200 Quick Start Guide can be used to quickly and efficiently install and configure the CMS-2200 system. The installation steps are outlined below and then described in detail in the following pages.

#### Installing the hardware

Be sure to have tools and ESD strap to be prepared.
 The tools required will include a screwdriver, a #1 Phillips screwdriver and an ESD grounding strap.

#### □ Check the front panel.

USL recommends that you check the front panel on the CMS-2200 to be sure it matches the type of projector that it will be installed in. There are unique front panels for the Barco, NEC, and Christie projectors.

- Be familiar with projector marriage.
   USL recommends that you are familiar with the projector marriage process before starting the installation of the CMS-2200. Once installation is started, the CMS-2200 must be married to the projector per the manufacture's procedure before the CMS-2200 will be functional.
- Remove the projector covers
   Follow the manufacturer's instructions for removing the covers to allow access to the IMB slot.
   Be sure the power is turned off before removing the access panels.
- Remove Enigma card if necessary
   If an enigma cared is installed, disconnect the HD-SDI cables and remove the enigma card from the projector.
- **Note:** Use an EP-100 to keep enigma card alive. The enigma card has a battery that will only last approximately six months without power. USL recommends the USL EP-100 to keep Enigma card alive.
  - Install CMS-2200
     Remove the CMS-2200 from is anti-static bag and slide it into the IMB slot on the projector. Be sure the CMS-2200 is fully seated in its slot.
     The CMS-2200 is not "hot pluggable" so be certain the power is turned off on the projector.
  - □ Install front panel mounting screws.

For Barco projectors, install the two 6mm mounting screws on each side of the front panel to secure the CMS-2200 in its slot. Failure to install the mounting screws may allow the CMS-2200 to slip out of its slot and fail.

For NEC projectors, the CMS-2200 is equipped with two captive screws in the front panel. Use these screws to secure the CMS-2200. Failure to install the mounting screws may allow the CMS-2200 to slip out of its slot and fail.

For Christie projectors, no mounting screws are required.

- Install the panel tamper label (Barco projectors only)
   Barco projectors require that a tamper label, which is included with the CMS-2200 is attached across the edge of the CMS-2200 and the side panel of the projector. The label will provide security detection if the CMS-2200 is removed.
- Replace cover
   Follow the manufactures instructions for reinstalling the projector panels.
- Install the projector Ethernet cable.
   Reinstall the projector's Ethernet cable.

#### □ Install AES audio cable

Install the AES/EBU audio cables to the audio ports. Refer to Table 2-1 and Figure 2-2 for connection information. Standard Ethernet (Cat 5 or Cat 6) cables can be used to provide the connection to USL audio processors like the JSD-100 and JSD-60.

□ Install Automation Network cable (optional)

If a CMSA-100 will be used in the system, connect the automation cable. For the CMSA-100 a standard Ethernet (Cat 5 or Cat 6) cable may be used for the connection. The CMS-2200 comes with built in automation cues to support the CMSA-100.

For GPIO interfaces refer to Table 2-2 and Figure 2-2 for wiring details. The CMS-2200 comes with built in automation cues to support the GPIO interface.

- Install Management (Ethernet automation) Network cable (optional)
   If the system requires a control network or Ethernet automation devices, install the Control network cable into the AUX port on the front of the CMS-2200. Refer to Figure 2-1 for the location of the AUX port.
- Install Media Network Ethernet cable (optional)
   For systems that have a **Data** network, typically used for transferring content between systems, install the data network Ethernet cable into data port B on the CMS-2200. Refer to Figure 2-1 for the location of the data B port.
- Perform Marriage procedure
   Follow the manufacturer's marriage procedure to marry the CMS-2200 to the projector.

□ Install Adobe Air on your computer or laptop

The SMS software requires Adobe Air to be installed on the host computer or laptop. Adobe Air is free package that can be downloaded from Adobe.com.( https://get.adobe.com/air/ )Once Adobe Air is properly installed on the computer the SMS software can be installed.

□ Use CGI interface to download latest SMS software from CMS-2200.

USL recommends using the USL CMS-2200 CGI interface for downloading the SMS software directly from the CMS-2200. The reason is that this will guarantee the SMS software will match the CMS-2200. Refer to Section 12 for complete details on the USL CMS-2200 CGI interface.

An alternative method is to install the SMS software from the DVD included with the CMS-2200. The DVD contains a CMS-2200 code package and a matching SMS software package that can be installed directly on a computer or laptop.

Run Installation file to install the SMS software.
 Once the SMS software package has been downloaded to the computer or laptop, run the install package to install the software.

For the SMS software to communicate with CMS-2200s, the computer must be on the same network as the projector, or have access to that network.

#### Configure CMS-2200 system settings.

Open the SMS software
 Once installed, the SMS software can be opened by double clicking the SMS application icon.
 Refer to section 3 for complete details on using the SMS software.

#### □ Log into the desired CMS-2200.

Use the **Discover** tab used to discover the available CMS-2200 media servers as described in Section 3 on page 13.

Log onto the desired CMS-2200 using one of the default user accounts described in Table 4-1. The log in process is described in Section 4 under **Login**.

For many of the settings below an installer level account or higher will be required. User = **installer**, Password = **installer** is recommended.



**NOTE**: As settings are changed in the SMS, be sure to save the settings using the **save button**. The save button will display the disk icon and will be located on various SMS pages near where the setting is made.

Add Users as necessary

Users can be added by selecting **Users** in the **System Tab.** The process is described in section 10 on page 52.

Users can only add other users of the same access level or a lower.

□ Set Projector Type

In the **System Tab** under **Settings** and **Projector, set the Projector type**. (Barco, NEC, or Christie) This step will configure proper Ethernet routing, given the projector the CMSS-2200 is installed in.

- Select 4K downsample (if 2K projector)
   For 2K projectors, set the 4K downsample to **ON**. This will automatically decode all 4K content to 2K, so it will stream on 2k projectors. For 4K projectors set this to **OFF**, allowing for a full 4k resolution on playback.
- Set 3D system type, if system is 3D.
   For 3D systems, select the 3D type in use. The choices are; None, RealD, Dolby, and Other.
   Be sure to save the settings by using the save button.
- Turn on CineCanvas and Auxiliary Content Server as required.
   In the System Tab, under Settings and Server, turn on CineCanvas to enable subtitles and turn on Auxiliary Content Server to enable closed captions.
   Be sure to save the settings by using the save button.
- Set the proper time zone
   In the System Tab, under Settings and Server, set the appropriate local time zone by selecting the continent and the major city for that time zone.
   Be sure to save the settings by using the save button.
- □ Set the Screen Name

In the **System Tab**, under **Settings** and **Auditorium Settings**, set the auditorium screen name. Be sure to save the setting by using the **save** button.

- Adjust the secure time offset if required (+ / 360 seconds)
   In the System Tab, under Settings and Media Block, adjust the secure media block time if required. The time may be adjusted +/- 360 seconds each year.
   Be sure to save the setting by using the save button.
- Define additional automation cues if necessary.
   Refer to section 7.2 for information on adding additional automation cues. Automation cues are added in the System Tab, under Settings and Automation.
- Set the audio system type and IP address.
   In the System Tab, under Settings and Audio, Set the Audio System Type to match the cinema audio processor that will be used.
- Set the Audio System IP address to allow Ethernet commands to locate the cinema audio processor.
   Do sure to court the settings by using the court button.

Be sure to save the settings by using the **save** button.

 $\Box$  Set the audio delay (+/- 200ms).

Set the audio delay value (in milliseconds) to synchronize the audio and video. A sync-pop test clip is provided on the CMS-2200 DVD.

□ Select the audio sampling rate.

Select the Audio Sampling Mode. In 96K mode, both 48 KHz and 96 KHz audio will be played. In 48 KHz mode, 96 KHz audio will be down-sampled to 48 KHz, so all content will be played at 48 KHz.

Be sure to save the settings by using the **save** button.

□ Re-configure the audio channel routing as desired.

In the **System Tab**, under **Settings** and **Audio**, the default audio channel routing is one-to-one and matches the standard DCI definitions. If changes are desired to the audio channel routing, refer to Section 11 - Audio Settings for a description of changing the default channel routing.

If changes are made to the audio channel routing, be sure to save the settings by using the **save** button.

# Single and Multi Auditorium Configurations

Below is a **suggested** IP address configuration that can be used to manage a single or multi-auditorium system. This configuration is designed to support from one to fourteen screens.

Calculated Addresses	
Management Network IP Address	10.208.48.0
Management Network Subnet Mask	255.255.254.0
Media Network IP Address	10.209.48.0
Media Network Subnet Mask	255.255.254.0
Management Network - Rack	
Gateway / Router	10.208.48.1
Secondary Gateway / Router	10.208.48.2
Antenna Controller (DigiOne)	10.208.48.4
Primary Satellite IRD - eth1	10.208.48.5
Secondary Satellite IRD - eth1	10.208.48.6
VSAT Satellite Router (iDirect)	10.208.48.7
Streamer - eth1	10.208.48.8
Management Switch 1	10.208.48.10
Management Switch 2 (unused)	10.208.48.11
Media Switch 1 Management	10.208.48.12
Media Switch 2 Management (unused)	10.208.48.13
Service Laptop Address (when on site)	10.208.48.16
Reserved	10.208.48.17
Reserved	10.208.48.18
Reserved	10.208.48.19
Reserved	10.208.48.20
UPS 1	10.208.48.21
UPS 2	10.208.48.22
Satellite Server - eth0	10.208.48.23
Satellite Server - BMC	10.208.48.24
Management Interface	10.208.48.25
Reserved	10.208.48.26
Reserved	10.208.48.28
Reserved	10.208.48.29
Reserved	10.208.49.191
Reserved	10.208.49.192

Management Network - Screen Equipment	Screen	Screen	Screen
	1	2	14
Automation Controller	10.208.48.31	10.208.48.32	10.208.48.44
Video Scaler	10.208.48.71	10.208.48.72	10.208.48.84
Media Player	10.208.48.111	10.208.48.112	10.208.48.124
Projector Head	10.208.48.151	10.208.48.152	10.208.48.164
Projector TPC	10.208.48.191	10.208.48.192	10.208.48.204
Cinema Audio Processor	10.208.49.31	10.208.49.32	10.208.49.44
DMA 8	10.208.49.71	10.208.49.72	10.208.49.84
LSS-100 Light and Sound Sensor			
Cinema Audio Monitor			
Auditorium Management Switch	10.208.49.151	10.208.49.152	10.208.49.164

Media Network - Rack	
Media Switch 1 Media interface	10.209.48.1
Streamer - eth0	10.209.48.8
Satellite Receiver - eth1	10.209.48.23
Media Interface	10.209.48.30
Reserved	10.209.48.31 - 50
Reserved	10.209.48.60 - 80
Reserved	10.209.48.135 - 165

Media Network - Screen Equipment	Screen	Screen	Screen	
	1	2	14	
Media Player - media interface	10.209.48.101	10.209.48.102	10.209.48.114	

Satellite Network	
Network IP Address (same for all sites)	10.50.2.0
Subnet Mask	255.255.255.224
Primary Satellite IRD - eth0	10.50.2.5
Secondary Satellite IRD - eth0	10.50.2.6
Streamer - eth0.4	10.50.2.8
Satellite Server - eth0.4	10.50.2.23
Satellite Interface (unused)	10.50.2.25

# 4.0 Screen Management System (SMS)

# Opening the SMS

The USL screen management application is opened via the SMS application icon, which may be placed on the desktop or toolbar. The SMS application will open to the **Overview** screen shown in Figure 3-1. For the application to discover and connect to CMS-2200 systems it must be on the management network with the CMS-2200 units.

The **Discover** tab allows the SMS application to discover all CMS-2200 units currently located on a network. To start the discovery process, enter a starting and ending IP address into the address boxes. In Figure 3-1 the starting IP is shown as 10.204.48.0 and the ending IP is 10.204.48.255. Four CMS-2200 units have been discovered and are shown with their IP addresses.

Clicking the **Start** button will initiate a scan of all of the IP addresses in the range. Any CMS-2200 units located in this IP address range will be identified. The **Stop** button may be used to terminate the scan early if desired. Below the Discover box, are two buttons used to complete the process. The **Add Selected** button will add a specific CMS-2200 and the **Add All** button will automatically add all of the discovered media servers.

🍇 Show Manager	Quest Dags		-	tage that		
Media Server Discoverer						
	Disc	overer Settings				
10.208.48.111 05L CMS	10.208.48.151 00000000000000000000000000000000000	10.208.4 000 USL CMS	8.152	Starting IP: 10.208.48.0		
10.208.48.153 995				Ending IP: 10.208.48.255		
				Disc Current IP: 10.20	over 08.48.255	
				Start	Stop	
				Add Selected	Add All	
	Overview		Discover			

Figure 4-1. SMS Discovered Servers

# 5.0 Theater Overview

Once the CMS media servers have been added to the SMS, the discovered media servers will be displayed in the overview section as shown in Figure 4-1 and Figure 4-2. The list view is displayed in Figure 4-1 with the show manager settings displayed. The **Hide Settings** button may be used to hide the show manager settings as shown in Figure 4-2. In these examples, twelve CMS-2200 units have been discovered with all twelve being displayed in Figure 4-2. Any discovered media server may be selected for log in by clicking on the server and using the login button, or by double clicking on the server tile.

The state of each media server can be quickly identified by the following icons:

		Playing		Paused		Stopped		Error
						Hide Se	ttings	
Show N	lanager	Regard	Lost Tran		100	14	14	
Theat	er Overview							
			Media S	Servers			Sho	w Manager Settings
NG.	Auditorium: 006 3D Black (1 second) 2	1 Theater 2 (HEX) 39 JPEG	Online 00:00:00/00:11:59		Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.7.10	Languag	e German Japanese English
¥6	Auditorium: Setl Free Birds FREE-BIRDS_FTR	n's Test Board (theater 2) :_F_EN-EN-CCAP_OV_51_2K_	Online 00:57:36/01:34:08 RM_20131009_TDC		Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.7.17	Media Servers	Chinese French s View: List
105	Auditorium: Scr Free Birds FREE-BIRDS_FTR	een 23 - USL0020 	Online 00:28:08/01:36:12 RM_20131009_TDC	Ø	Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.7.32		Version 0.14.089
10s	Auditorium: The Samsara Black (1 second) 1	ater 3 USL0059 85 JPEG	Online 00:00:00/01:50:24	•	Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.7.79		ledia Storage Servers
NG.	Auditorium: Mike	s's miniature theater t	Online 00:00:00/00:21:20	•	Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.1.28		
<b>N</b> S	Auditorium: Ricl The Samsura SAMSARA_FTRv3_	k's Desk Show _s_en-xx_ru_71_4K_INDIE_;	Online 00:52:40/01:42:04 20130207_DLA_OV		Lamp: Off Douser: Close	Projector: Barco 23b IP Address: 192.168.1.61	Add	Setup Remove
Add Medi	a Server Ad	d Media Serve	r List <b>Remove All</b>	Select Serv	er To Remove	emove	Login	Setup
		Overvie	2W				Discover	

Figure 5-1. Overview Screen - List view

# Show Manager Settings

There are a number of show manager settings provided at the theater overview for easy access. This includes the language setting, the SMS software version, and external storage server details.

#### Language

In the Show Manager Setting pane, the **Language** spinner is used to select the correct language. In this example English is selected.

#### SMS Software Version

Below the **Media Server View** button in Figure 5-1, the **Version** of the SMS software can be found. Version 0.14.089 is shown in the example.

#### Media Storage Servers

This data field is for adding and configuring external storage servers that the CMS-2200 can pull content from.



Figure 5-2 Overview – Tile View

# Server Summary Tiles

In each server tile overview information is shown including the **Auditorium**, **Projector Type** and **IP address**. An **Online** state indicates that the SMS has a communications channel with the CMS-2200. The **Offline** indicates there is no communications, i.e. the projector is turned off or disconnected. For online media servers the current transport state is indicated, such as **Playing**, **Stopped**, and **Paused**.

The progress bar at the top of each summary tile will indicate the approximate position for an active show. In Figure 5-3, auditorium **Conference Room 32B** is configured with a Barco 23b projector at IP address 192.168.1.244. The CMS is **Online** and currently playing **Free Birds**. The show has a duration of 1:33:59 is 49% complete with playback.

Note that the black portion of the current show progress bar indicates the portion that has played. The green portion remains to be played.

Conference	e Room 32B			Auditorium
				Current Show
Duration:01:33:59	49%			Show Details
Douser:	Close		Audit	orium Details
Projector: Barco 23t IP Address: 192.168.	1.244			CMS State
Online				CMS Status

Figure 5-3. SMS Overview Detail

Along the bottom of the overview screen are buttons to add and remove CMS servers and to login to a specific server. Figure 4-3 illustrates the buttons and each will be described below.



# Add Media Server

The **Add** Button will open the Server Setting and Information dialog box. Providing an **IP address** and clicking the **Save** button will create a placeholder for a media server. When the SMS is able to communicate with that server it will automatically update the **Screen Name** and **Projector type** from the CMS-2200 system. The add media server feature is convenient for pre-configuring media servers that are not yet online.

Server Settings and Information			
Screen Name	Screen		
Projector	Barco 23b		
IP Address			
	Save Close		

Figure 5-5. Server Settings and Information

# Media Server List

The **Remove All** button will remove all of the media servers from the overview. It is typically used to quickly clear the overview to start a new discovery. Clearing the overview is not required, but it can eliminate clutter or unused servers from the overview pane.

## Remove

The **Remove** button will remove the selected media server. A pop-up warning will give you a **Yes** - **No** selection before removing the media server.



Figure 5-6. Warning for Remove

## Login

The **Login** button will bring up the login screen dialog with the IP address displayed in the title bar. A user name and password are required for access to a CMS-2200. Each user account as its own set of permissions and access privileges. The default user accounts are shown in the table below.

Username Password		Notes	User Level
projection	(empty password)	No password required	Projectionist
manager	manager		Manager
installer	installer		Installer
admin		Contact USL for password	Administrator



Login Screen 14 192.168.1.122				
User Name	Installer			
Password	*****			
	Login Close	J		

Figure 5-7. Login Pop-Up

#### Setup

The **Setup** button allows for quick edits of existing screens on the overview page. For example, if a user added a device with an incorrect IP address they could use the **Setup** button to make the fix -- instead of removing and adding again.

Server Settings a	nd Information
Screen Name	Mini-Palm 1 (UBI)
Projector	Barco 23b
IP Address	10.208.48.151
	Save

Figure 5-8. Server Settings and Information

# Show Manager Home

The show manager player screen is designed to provide all of the critical information for given media server in a single view. The **Status Bar** at the top and the **Screen Tabs** located at the bottom remain for all of the SMS views. The status bar and screen tabs will be covered first, followed by a detailed description of the player screen.



Figure 5-9. Show manager player screen

The **Status Bar** at the top provides a concise view of status, alert messages, connected drives, the selected server, along with the current time and date. Below is a description of each of the status bar element.



Log Off

The Log Off button ᄣ will log the SMS out of this CMS media server and return to the overview page.

#### Alert Messages

Clicking on the green icon  $\bigcirc$  or the message will bring up the **Alert Message box**, which provides a list of the recent alert messages, the message type icon, and the time and date the message was logged. Clicking the **Trash** button will clear the alerts. A **Yes** – **No** warning is provided before the messages are deleted. Clicking the **OK** button will confirm deletion and close the Alert Message box.

Туре	Date	IP	Screen	Alert Message	
0				Logging into server	
0	Tue Apr 22 16:06:09 GM	10.208.48.153	Mini-Palm 3 (UBI)	Logged into server	
				ок 📠	

Figure 5-11. Alert message box

**Connected Drives** 

The **Connected Drives** icons indicate the presence of any connected storage. These icons will flash green when a new device is detected. They will remain solid green when the device is ready to be used. The icons are as follows:

USB drive



Playback Mode

The mode status icon is a fast way to observe the play state that the current CMS device is in.
### Lamp and Dowser Status

This icon retrieves the current Lamp and Dowser status of the project the CMS-2200 is connected to.





Lamp Off, Dowser Open

Lamp On, Dowser Open

Date and Time

The current date and time is indicated on the far right side of the SMS status bar. When no CMS systems are selected the time becomes the local computer time. When the SMS is logged on to a CMS system the SMS time is synchronized to the CMS-2200 secure clock time.

Screen Select Box

The **Screen Select Box** serves two functions. Upon login to a particular CMS, the box will show **Loading Assets** while all of the specific media server details are loaded and the SMS is updated.





After the SMS is synchronized with the CMS the screen select box will change to a dropdown indicating the name of the CMS that it is logged into. Clicking this box will expose a dropdown list of the discovered protectors. Any of the available systems may be selected without needing to log out of the SMS. This is a quick way to log into other CMS systems.



Figure 5-13. Screen Select Dropdown

## Screen Tabs

Player	Automation	Builder	Content	Scheduler	System							
	Figure F 14 CMC Career Take											

Figure 5-14 SMS Screen Tabs

At the bottom of the SMS overview is the **Screen Tabs** bar. There is a tab for each of the screen views available on the SMS. The tabs are **Player**, **Automation**, **Builder**, **Content**, **Scheduler**, and **System**. The current tab being displayed is shown in a darker gray. Each of these tab views is described in subsequent sections.

# 6.0 Player



Figure 6-1. Player Tab

The player view is composed of three main sections. The **Input Select**, the **Status and Transport Controls** and the **Timeline**.

## Input Control

The input control bar provides three distinct, but related functions. The 2D/3D selector, Scheduled & Manual mode select, and Alternate input select.



### 2D/3D Selector

The 2D / 3D selector 2D is set to the projector's configuration, not the content type. If the projector is configured for 3D operation, then **3D** should be selected. In this mode 2D content will automatically be '**cloned'** to play on the 3D system. When **2D** is selected and 3D content is played, the CMS-2200 system will automatically provide left eye only (2D) to the projector.

When **Manual** mode is selected, only the transport controls are used to determine activity. The content must be manually started, paused, or stopped. No scheduled or automatic transport control occurs. This mode is convenient for selecting a particular clip, trailer, show or playlist and manually playing it.

In **Scheduled** mode the scheduler system is enabled and the scheduling system will automatically load, validate and stream playlists according to the schedule. In this mode the transport controls are still available and will override any scheduled operation.

In the case of manual intervention when in scheduled mode, the scheduling system will wait for any manually selected clip or playlist to complete, the SMS will then return to a **stopped** state and wait for the beginning of the next scheduled show to begin again.

The SMS scheduler will not join a show in mid-stream. Similarly manually selected content will not be preempted by a scheduled show, even when in scheduled mode. The scheduled show will simply be skipped and the schedule will wait for the player to return to the **Stopped** state and then load the playlist with the next available start time.

## HDMI-A, HDMI-B, HD-SDI

The Selector buttons for the **HDMI-A**, **HDMI-B** and **HD-SDI** inputs on the CMS-2200 will select these alternate inputs. When these inputs are in use the transport controls and scheduler are no longer in effect. The HDMI and HDMI-B inputs are fully HDMI-1.4B and HDMI-3D compliant.

## Status and Transport Control

The status and transport control portion provides all of the essential status information in a single view.



Figure 6-3. Status and Transport Control

In the upper right of the transport control pane time information is shown. The top line is the scheduled show start and duration. Before the show, the **Starts in** timer indicated will count down until the show begins. Once started, it will change to an **Ends In** timer that counts down until the show completes.

Key Status		
•	Green Key	Good to go
	Amber Key	Warning: Keys to expire soon, or within 24 hours.
	Red Key	Error: The content will not play

Table 6-1. Key status

Above the transport controls are two timers in HH:MM:SS format. The timers indicate play time from the beginning of the playlist and the total play time for the playlist.

The transport controls from left to right are: Lock, Skip Back, Stop, Pause, Play, Skip Forward and Content Select. The table below describes the function of each of the transport controls.

lcon	Function	Notes
	Lock/Unlock	When locked, click and hold ( <b>Long Press</b> ) until unlocked to enable transport controls. The transport controls will auto lock after 20 seconds.
	Skip Back	Skips back in the playlist by one reel.
	Stop	Stops streaming with a black screen. The stop icon will be red to indicate the stopped state.
	Pause	Pauses the show, with the last image on screen. The pause control will be green to indicate paused.
	Play	Plays the playlist. Play will be green when in play mode.
	Skip Forward	Skips forward one reel.
	Content Select	Content Select is used to select content to play. This control is enabled when the current show is stopped, or no show is selected. Either playlists or individual clips may be selected.

Table 6-2. Transport control buttons





At the top of the player timeline is the **progress / seek bar**. This bar will slide from left to right to indicate the **progress** as the playlist is streamed. When the transport controls are unlocked, this bar can be dragged to any position along the timeline to **seek** to that position.

The player timeline graphically illustrates the current show information in timeline form. Each of the clips in the playlist is show from left to right order. Each content box contains a number of details about that specific clip.

Figure 6-5 below shows the variety of information that can be found within the content boxes.



# 7.0 Content Tab

The Content tab is where all content is managed. The right side of the page displays the internal content, which resides in the CMS-2200 solid state drives. Along of top of the content tab are data filter tabs, to allow filtering of the content. The filters include; **All Clips, Features, Trailers, Ads, Test Clips**, and **Licenses**. The data list may be further sorted by clicking on the individual headings. Sorting may be done for the **Title**, **Type**, **Duration**, **Size**, **2-3D** and **Aspect Ratio**.

The left side panel shows the external content, which could be on a USB, eSATA, or Network location. There is also a transfer status tab which will display the status of content that is currently being transferred to the CMS-2200.

Along the bottom are the standard tool buttons, which are listed here.



-	Show Manager				-											x
ž	K Installer	ESATA Drive Pr	resent		()€	ာက	Screen-1	I		(	Select		Tue	Jan 7 10:34	GMT-0800 2	2014
	External (	Content	Network	Content	Τr	ansfer Status				-		Internal	Content	Se	erial Number (	0014
	All Clips	Features	Trailers	Ads Te	est Clips	Lice	1865		,	All Clips	Features	Trailers	Ads	Test Clips	License	<b>es</b>
	Title			Type Du	ration	Size	2			Internal C	ontent Title		Туре	Duration	Size	2.
٠	007-TOKUH	O_TRL_S_JA-X	X_JP_51_2K_2	trailer 00:	01:49	909.16 MB	2									
۲	2-GUNS_TL	R-2_F_EN-XX_L	US-GB_51_2K_	trailer 00:	02:32	3.70 GB	2									
۰	2-GUNS_TL	R-2_S_EN-XX_L	JS-GB_51_2K_	trailer 00:	02:32	3.75 GB	2									
	2K DCI Max	imum Bitrate Coi	mposition (Enci	test 00:	10:40	20.62 GB	2									
•	300-RSE-EM	IPIRE_TLR-1B_	S_EN-XX_US-	trailer 00:	02:32	2.64 GB	2	4								
۰	3ALITY-SPL	ASH-DEMO_SH	R_F_EN-XX_U	short 00:	03:53	4.71 GB	4									
e	4K DCI Max	imum Bitrate Coi	mposition (Enci	test 00:	10:40	20.87 GB	2	_								
۲	700 Welcom	e 7050 Flat		trailer 00:	00:16	111.88 MB	2									
۲	700 WELCC	ME 7050 FLAT		trailer 00:	00:16	111.88 MB	2									
۰	700 Welcom	e 7050 Scope		trailer 00:	00:16	86.50 MB	2									
۰	700 WELCC	ME 7050 SCOP	E	trailer 00:	00:16	86.50 MB	2									
۲	96k_16ch_s	mpte_tlr		test 00:	02:24	4.57 GB	2									
۰	ABOUT_TIM	IE_TLR1_F_EN-	-XX_US-GB_51	trailer 00:	02:32	2.69 GB	2									
•	ABOUT_TIM	IE_TLR1_S_EN-	-XX_US-GB_51	trailer 00:	02:32	2.73 GB	2									
۲	Aint-Bodies-	Saints_TLR-1_F	EN-XX_US-G	trailer 00:	02:29	1.81 GB	2									
۰	Aint-Bodies-	Saints_TLR-1_S	EN-XX_US-G	trailer 00:	02:29	1.81 GB	2									
•	AMERICAN	GANGSTER_TL	.R-1_F_EN-XX_	trailer 00:	01:54	2. <b>79</b> GB	2									
												Free Space 1	38 TB			
	$\sim$									2			Used Space	197.34 MB		
	Pla	yer	Auto	omation		Builde	er			Content		Schedu	ler		System	

Figure 7-1. Content Screen

In Figure 7-1 an eSATA drive is plugged into the CMS-2200 as indicated by the green drive icon E. The content on the eSATA drive is listed on the left side panel. The CMS does not yet have any content on its internal SSD storage, as the right side panel is empty.

The lower right hand corner storage bar lists both the used space and the free space available on the solid state drives. In the example above 1.38 TB is available for content storage.

The first column in the external content grid contains icons to indicate the status of that content. Each of the status icons are described in the following table.

٠	Green Light	Good to Go
<b>4</b>	Encrypted content – Locked	Needs Current license before it can be streamed
¢	Encrypted Content - Unlocked	The content is encrypted, but current licenses are available. This content can be streamed
B	Glasses – 3D	3D content
	Valid License	Valid license
C	Expired License	The license has expired and is no longer valid.
	Corrupt or Missing Data	Playback will cause error

Table 7-1. Content status icons

Warning pop up for copying selected content



Figure 7-2. Warning Pop-Up for Copy

<b>4</b>	ihow Manager	r													00	×
>	Installer	SATA Drive F	Present				Screen-1			Select			Tı	ie Jan 7 12:04	GMT-0800	2014
	Externa	Content	Network	Content	т	Transfer Status						Internal C	ontent	s	erial Number	r 0014
	All Clips	Features	Trailers	Ads	Test Clips	Lic	enses		All Clips	Features	B	Trailers	Ads	Test Clips	Licens	ses
	Title			Туре	Duration	Size	2		Internal C	Content Title	9		Туре	Duration	Size	2
Ζ,	BATTLE-0	F-YEAR_ILR-3_	F_EN-XX_US-G	traller	00:02:17	2.27 GB	2	•	007-TOK		_JA-XX_	_JP_51_2K_	trailer		909.16 MB	2
1	BATTLE-O	F-YEAR_TLR-3_	S_EN-XX_US-G	trailer	00:02:17	1.78 GB	2	4	2-GUNS_	TLR-2_F_EM	i-xx_us	-GB_51_2K	trailer	00:02:32	3.70 GB	2
1	BEE_MOV	IE_TRL-2_F_EN-	-XX_US-GB_51	trailer	00:02:09	3.27 GB	2									
1	BEST-MAN	I-HOLIDAY_TLR-	-2_F_EN-XX_US	trailer	00:02:26	2.97 GB	2									
۶	BEST-MAN	-HOLIDAY_TLR-	-2_S_EN-XX_US	trailer	00:02:26	3.04 GB	2									
۶	Black (1 se	cond) 185 JPEG		transitional	00:00:01	4.25 MB	2 –									
4	Black (1 se	cond) 239 JPEG		transitional	00:00:01	5.33 MB	2									
¥	Black (1 se	cond)*		transitional	00:00:01	903.02 KE	3 2									+ 11
4	Black (5 se	conds) 185 JPEC	3	transitional	00:00:05	4.25 MB	2									+
¥	Black (5 se	conds) 239 JPEC	G	transitional	00:00:05	5.33 MB	2									+ 11
4	Black (5 se	conds)*		transitional	00:00:05	4.25 MB	2									+ 11
•	Black-10-S	ec-2D_XSN-2D_	XX-XX_MOS_2	transitional	00:00:10	8.69 MB	2									
•	BLACK-1-S	ECOND_XSN_F	_4K_20111010_	transitional	00:00:01	8.07 MB	2									
•	BLACK-1-S	SECOND-3D_XSI	N_F_48_201110	transitional	00:00:01	8.11 MB	4									+ 11
•	BLACK-1-S	SECOND-3D_XSI	N_F_60_201110	transitional	00:00:01	8.12 MB	4									
•	BLACK-3S	EC_XSN-2D_S_M	MOS_2CH_2K_2	transitional	00:00:03	5.29 MB	2									- 11
•	BLACK-3S	EC_XSN-2D_S_M	MOS_6CH_2K_2	transitional	00:00:03	4.94 MB	2									
	Black-5-Se	c-2D XSN-2D X	X-XX MOS 2K	transitional	00:00:05	4.36 MB	2									
					- 04 05 05								ree Space	e 1.38 TB		
	7			selection Siz	e 91.95 GB			Í	Ē				sed Space	e 197.34 MB		
	PI	ayer	Auto	mation		Buik	ter		Content			Schedule			System	

Figure 7-3. Content Selected for Copy

Figure 7-3 is an example of a block of content that is selected to be copied to the internal drives.

The transfer icon  $\neq$  indicates the content is currently being transferred. The **Transfer Status Tab** shown in Figure 7-4 is useful for monitoring the progress of content transfers.

🏭 Show Manager			the second second											×
🛠 Installer 🔵	ESATA Drive F	Present	() 🖨 🏠 Sc	reen-1				Select			Tu	e Jan 7 12:18	3 GMT-0800 2	2014
External Con	tent	Network Content	Transfer Status				_	_	-	Internal C	ontent	s	erial Number	0014
							All Clips	Features		Trailers	Ads	Test Clips	Licens	ies
Title	Туре	Status	Transferred				Internal C	Content Title	;	_	Туре	Duration	Size	2
AMERICAN-GANG	S CPL	PENDING	0%			•	007-TOKI	JHO_TRL_S	_JA-XX	_JP_51_2K_	trailer	00:01:49	909.16 MB	2
Aint-Bodies-Saints	CPL	PENDING	0%			•	2-GUNS_	TLR-2_F_EN	-xx_u	8-GB_51_2K	trailer	00:02:32	3.70 GB	2
Aint-Bodies-Saints	CPL	PENDING	0%			•	2-GUNS_	TLR-2_S_EN	-xx_u	6-GB_51_2K	trailer	00:02:32	3.75 GB	2
ABOUT_TIME_TL	R CPL	PENDING	0%		0		2K DCI M	aximum Bitra	ite Com	position (En	test	00:10:40	20.62 GB	2
ABOUT_TIME_TL	R CPL	PENDING	0%			P	300-RSE-	EMPIRE_TL	R-1B_S	_EN-XX_US	trailer	00:02:32	2.64 GB	2
96k_16ch_smpte_	tli CPL	PENDING	0%			Ľ	3ALITY-S	PLASH-DEM	O_SHR	_F_EN-XX_I	short	00:03:53	4.71 GB	6
700 WELCOME 70	5 CPL	PENDING	0%		_	1	4K DCI M	aximum Bitra	te Com	position (En	test	00:10:40	20.87 GB	2
700 Welcome 705	) CPL	PENDING	0%											
700 WELCOME 70	5 CPL	PENDING	0%											
700 Welcome 705	) CPL	PENDING	0%											
4K DCI Maximum	Bi CPL	TRANSFERRING	40%											
3ALITY-SPLASH-D	E CPL	INGESTED	100%											
300-RSE-EMPIRE	1 CPL	INGESTED	100%											
2K DCI Maximum	Bi CPL	INGESTED	100%											
2-GUNS_TLR-2_S	CPL	INGESTED	100%											
2-GUNS_TLR-2_F	CPL	INGESTED	100%											
007-TOKUHO_TR	L CPL	INGESTED	100%											
2	×	Selection Size 9					Z				ree Space sed Space	1.38 TB 197.34 MB		
Player		Automation	Builder Co					Content Scheduler Syste						

Figure 7-4. Transfer Status View

## **Content Properties**

The properties button can be used with either external or internal content to see the details for any piece of content. The **OK** button will close the content details window. The **<Previous** button and the **Next>** button can be used to quickly scroll up and down the content list to view the properties for each. Figure 7-5 illustrates the properties box with the information available for each clip.

Asset Properties				×
FREE-BIRD urm:uuid:999c License valid	OS_FTR_F_EN-EN-C 4463-8856-4292-90d2-f	CAP_OV_51_2K_RN 46c053ebd19	1_20131009_TDC	
Properties				1
Creator Issuer Type Label Set Encrypted HMAC Rating Edit Rate Duration	ClipsterDCl 5.9.0.0 TDC feature Interop Yes Yes 24 fps 01:30:56	Alpha/Atmos		
Annotation Text	FREE-BIRDS_FTR	_F_EN-EN-CCAP_OV_	_51_2K_RM_20131009_	_TDC
In age Is 3D Image Format Aspect Ratio	No 2K JP2K 1.85			
Sound	48000			
Channel Format Language MDA Rendered Audio Channels	Not Defined EN-EN-CCAP No No 6			
Subtitle				
	< Previous	ок	Next >	

Figure 7-5. Content Properties

In the example in Figure 7-6, a USB drive with KDMs is plugged into the CMS-2200 as indicated by the icon. The KDMs are scanned and only valid keys for this particular CMS-2200 show up in the left data grid. Keys not specifically target for this CMS-2200 will not show up on the list, even if they exist on the drive. In the **Licenses** view the date issued, **Valid From** and **Valid To** fields are shown. The **green check** icons indicate the keys are currently valid. Note there is one key with the **lock** icon, indicating this is a valid key for this particular CMS-2200, but the key has expired. There is a second key above with a **green check** that is currently valid for that content. The CMS-2200 will automatically match valid keys with content when multiple keys are transferred.

In Figure 7-6, the **Licenses** filter is selected on the internal content for the CMS-2200 with no keys installed on the device. Transferring a license is the same process as all other content. The **right arrow** will copy all selected items.



42 S	how Manager			Here Same Dr.	And Street Lange	in later		-	_						
2	Installer ( Log Off	USB Drive Prese			Scree	n 14		Selec	t	Wed Jan 8 11:28 GMT-0800					
	External (	Content	Network Conte	nt	Transfer Status					Interna	I Content	S	erial Number 0014		
	All Clips	Features	Trailers Ad	s Test Clip	s Licenses		All C	Clips Fe	atures 1	Trailers		Test Clips	Licenses		
	Title	Annotation	Date Issued	Valid From	Valid To		Tit	tle	Annotation	Date	Issued	Valid From	Valid To		
$\checkmark$	DCI_Mini_M	ovie Created at lo	2012-08-27T17:	2012-04-24T00	2032-05-24T00:										
$\checkmark$	ENCRYPTE	D_LI Generated b	2012-08-27T17:	2012-08-17T00	: 2032-09-16T00:										
<b>a</b>	GAME_PLA	N_F	2011-11-27T17:	2011-07-24T00	): 2013-11-24T23:										
$\checkmark$	GAME_PLA	N_F	2012-07-24T17:	2012-07-24T00	): 2016-07-24T23:										
$\checkmark$	GIRL-DRAG	ON-	2012-06-29T18:	2012-06-12T13	2016-07-09T15:										
$\checkmark$	MPEG2-Cur	ious Generated b	2012-08-27T17:	2012-07-05T00	): 2020-08-04T00:										
$\checkmark$	NIGHTMAR	E_BE Generated b	2012-08-27T17:	2012-05-25T00	): 2032-06-24T00:										
$\checkmark$	PUSS-IN-BC	OTS	2012-06-29T19:	2012-06-01T07	2016-07-02T06:										
$\checkmark$	RIO-3D_FT	ર-10	2012-11-13T18:	2012-11-09T21	2016-12-01T07:										
$\checkmark$	SAMSARA_	-TR	2013-11-27T00:	2013-10-23T04	2016-11-04T04:										
$\checkmark$	THB-CINETI	EST	2012-11-06T19:	2012-11-05T00	): 2016-11-05T00:										
											Free Sna	ICE 1 01 TB	'		
	2										Used Spa	ace 373.38 GB	373 38 GB		
	Pla	/er	Automatio	on	Builder			Content		Sched	uler		System		

Figure 7-6. Ingesting Licenses

It is worth noting in Figure 7-7 that one key "**THB CINETEST 2**" has a **green check** when it is displayed as external content on the USB drive, but it changes to a **red X** when it is transferred to the CMS-2200. This is because when on an external drive, only the key is checked to confirm it is targeted for this CMS-2200 and that the date range is valid. Once the license is moved to the CMS-2200 it is revalidated in detail. In this case there is a problem with the signing information of the key and therefore it is invalid.

kii S	how Manage	r		-		New York Date	-		-	-	- test						
>	Installer Log Off	ິ ບ:	SB Drive Preser	nt			⊒¢) ध	creen	14		Se	elect		Wed Jan 8 11:49	GMT-0800 2014		
	Externa	l Conten	ıt	Netwo	k Conten	it .	Transfer Status						Internal Conte	mal Content Serial Number 001			
	All Clips	Fe	atures	Trailers	Ads	s Test Clips	Licer	ISes			All Clips	Features 1	railers Ad	Test Clips	Licenses		
	Title		Annotation	Date Iss	ued	Valid From	Valid To				Title	Annotation	Date Issued	Valid From	Valid To		
$\checkmark$			Created at lo	2012-08-	27T17:	2012-04-24T00:	2032-05-24	Г00:		$\checkmark$	DCI_Mini_Mov	/ii Created at loca	2012-08-27T1	7 2012-04-24T00	2032-05-24T0(		
$\checkmark$	ENCRYPT	ED_LI	Generated b	2012-08-	27T17:	2012-08-17T00:	2032-09-16	Г00:		$\checkmark$	ENCRYPTED_	L Generated by (	2012-08-27T1	7 2012-08-17T00	2032-09-16T0(		
$\checkmark$	GAME_PL	AN_F		2012-07-	24T17:	2012-07-24T00:	2016-07-24	Г23:		, <del>6</del>	GAME_PLAN_	J	2011-11-27T1	7 2011-07-24T00	2013-11-24T2:		
<b>a</b>	GAME_PL	AN_F		2011-11-	27T17:	2011-07-24T00:	2013-11-24	Г23:		$\checkmark$	GAME_PLAN_	F	2012-07-24T1	7 2012-07-24T00	2016-07-24T2:		
$\checkmark$	GIRL-DRA	GON-		2012-06-	29T18:	2012-06-12T13:	2016-07-09	F15:	-7	$\checkmark$	GIRL-DRAGO	N	2012-06-29T1	8 2012-06-12T13	2016-07-09T1{		
$\checkmark$	MPEG2-C	urious	Generated b	2012-08-	27T17:	2012-07-05T00:	2020-08-04	ГОО:		$\checkmark$	MPEG2-Curio	u: Generated by (	2012-08-27T1	7 2012-07-05T00	2020-08-04T0(		
$\checkmark$	NIGHTMA	RE_BE	Generated b	2012-08-	27T17:	2012-05-25T00:	2032-06-24	ГОО:		$\checkmark$	NIGHTMARE_	E Generated by (	2012-08-27T1	7 2012-05-25T00	2032-06-24T0(		
$\checkmark$	PUSS-IN-E	воотя		2012-06-	29T19:	2012-06-01T07:	2016-07-02	Г06:		$\checkmark$	PUSS-IN-BOC	п	2012-06-29T1	9 2012-06-01T07	2016-07-02T0€		
$\checkmark$	RIO-3D_F	TR-10		2012-11-	13T18:	2012-11-09T21:	2016-12-01	г07:		$\checkmark$	RIO-3D_FTR-	1	2012-11-13T1	8 2012-11-09T21	2016-12-01T07		
$\checkmark$	SAMSARA	_FTR		2013-11-	27T00:	2013-10-23T04:	2016-11-04	Γ04:		$\checkmark$	SAMSARA_F1	Ŧ	2013-11-2710	0 2013-10-23T04	2016-11-04T04		
$\checkmark$	THB-CINE	TEST:		2012-11-	06T19:	2012-11-05T00:	2016-11-05	00:		X	THB-CINETES	51	2012-11-06T1	9 2012-11-05T00	2016-11-05T0(		
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						/							Eroo S	200 1 01 TB			
	2										2 👘		Lised S	Date 373 38 GB			
	~																
	PI	ayer		Au	itomatio	n 🔶	Builde				Content		Scheduler		System		
										_	_						
												$\sim$	_				
					Ex	pired Key	/						In	valid Key			

Figure 7-7. Key Validity Check

# **FTP Transfers**

To transfer Internal Content to other CMS devices first select the clip from the right side list and press

the  $\widehat{}$  icon. A menu will pop-up allowing you to select the intended destination and input the login credentials for that server. Transfer speeds may vary network to network.

				×
Source			D	estination
WORLD-WAR-Z_TLR-1_F_EN->	(X_US-GB_51 2.00 GB		Server : L IP Address	arry's TEST s: 10.209.48.101
			Server : M IP Address	ledia Storage Server s: 192.168.6.32
		<b> </b>	Server : (I IP Addres	JBI) Conf. Rm. Left (32B) s: 192.168.1.214
Selection Size 2	2.00 GB			
User Name ftp	+ Password	***		$\langle \phi \rangle$

Figure 7-7. FTP Export Pop-Up

**NOTE**: Read & Write options for internal server must be enabled for both the sending and receiving device. These settings can be configured in System -> Settings -> Server tab.

# 8.0 Builder Tab

With content ingested onto the CMS-2200, the **Builder Tab** is used to build playlists. This tab is used to create the playlists, with transitions, trailers, ads, automation cues, and other content. Once shows are built they can be scheduled for playback on the CMS-2200.

In Figure 8-1 the available content is shown on the right hand side of the show builder pane. Along the top are the content filter tabs to aid in selecting the desired content. A **Cues** tab is also available for selecting the various automation cues for the playlist.

Once created, playlists will be listed on the left side of the builder tab. Along the bottom is the timeline where shows are constructed. In this figure there are no existing playlists, so the Show Builder graphic is displayed.



Figure 8-1. Builder Tab View

Each of the required steps for building shows will be detailed in this section. Below the content grids are the tool buttons listed here.



# **Building a Playlist**

Selecting the **New Playlist** button will bring up the new show dialog window and add a title block to the start of the timeline as shown in Figure 8-2. In this example the title is left as **New Show** and **Ok** is selected to start the build process.

Show N	lanager																	3	
X Installe	er 🔘 Logged into ser	rver		(	¥ é	<b>∋</b> ආ	Scre	en-1			(	Select	Mon Dec 16 13:06 GMT-0800 2013						
Title		Durati	Annot	Date Is	su	Creator	Issue	er		All Clips		Features	Trailers	Ads	Ot	her Clips	Cues		
10 sec	ond playlist	00:00:10		2013-1	1-19	admin	Issue	r			Title	_		Duration	As	Туре	Lang	1	
20 sec	ond playlist	00:00:20		2013-1	1-19	admin	Issue	r	7	2	2K DCI Maxi	mum Bitrate (	Composition (Encry	00:10:40	1.9	test	Unknowr		
30 sec	ond playlist	00:00:30		2013-1	1-19	admin	Issue	er 👘			300-RSE-EM		B S EN-XX US-GE	00.00.20	2.30	trailer	EN-XX	Т	
40 sec	ond playlist	00:00:40		2013-1	1-19	admin	Issue	r			3ALITY_SDL		SHD E EN_XX 118	00.02.52	1 78	short			
😑 50 sec	ond playlist	00:00:50		2013-1	1-19	admin	Issue	r	7			mum Bitrato (		00.03.03	1.10	toot			
60 sec	ond playlist	00:01:00		2013-1	4 40 Diavli	admin	lecuo	ar i		•				00:10:40	1.9	Annilan	Unknown		
🚡 A real	show	01:57:43		2013-1	Fidyi	151	_					~		00:00:16	1.9		Unknowr		
🚡 Future	Show	00:04:14	Used to n	2013-1			D: u	ırn:uuid:01e	edc18b-	5e0	7-5c17-5745-fd	13a393127d6		00:00:16	1.9	traller	Unknowr		
🚡 Kind o	fShow	00:00:35	Close to a	2013-1		Titl	le: 🕟	lew Show						00:00:16	1.9	trailer	Unknowr		
🚡 Mike's	new show	02:07:05		2013-1									РЕ 	00:00:16	1.9	trailer	Unknowr		
A Missin	n Kev Plavlist	00.00.10	10 Secon	2013-1	Ann	otation Tex	<b>d:</b>							00:01:54	2.39	test	Unknowr		
						Creato	o <b>r:</b> ir	nstaller											
1						Issue	er: Is	ssuer					-						
		×				Date Issue	d: 2	2013-12-16	13:05:2	20									
								_		_	_								
New Sho	w							Ok	Ca	псе	H								
Date Issued: 2013-12-16 13:05:20 Issuer: Issuer Creator: installer Duration: 00:00:00													_						
	Player Automation					Bu	ilder				Content		Schedu	ler		Syster	n		

Figure 8-2. Playlist Details

Next clips can be selected from the content data list and the **Add Clip** button  $\checkmark$  is used to drop selected clips into the timeline. At the top of each clip the time from the beginning of the playlist is displayed. Figure 8-3 illustrates the beginning of the **New Show** with three black clips added. A quick alternative way to add clips to a playlist is to double click on the content.

🍓 Show Manager	inere and		a faile line	-	Comprise Total		and the second second						
K Installer	emoved				Screen 14			Select		We	ed Jan 8 16	35 GMT-08	00 2014
Title	Durati	Annot	Date Issu	Creator	Issuer		All Clips	Features	Trailers	Ads	Othe	r Clips	Cues
							Title	_		Туре	Duration	Size	2-30
							2K DCI Maxi	mum Bitrate Con	position (End	test	00:10:40	20.62 GB	2D
						•	3ALITY-SPL	ASH-DEMO_SHF	R_F_EN-XX_I	short	00:03:53	4.71 GB	30
						<u></u>	4K DCI Maxi	mum Bitrate Con	position (End	test	00:10:40	20.87 GB	2D
						•	96k_16ch_s	mpte_tlr		test	00:02:24	4.57 GB	2D
						•	Black (1 sec	ond) 185 JPEG		transitional	00:00:01	4.25 MB	2D
						•	Black (1 sec	ond) 239 JPEG		transitional	00:00:01	5.33 MB	2D
						•	Black (1 sec	ond)*		transitional	00:00:01	903.02 KB	2D
						•	Black (5 sec	onds) 185 JPEG		transitional	00:00:05	4.25 MB	2D
						•	Black (5 sec	onds) 239 JPEG		transitional	00:00:05	5.33 MB	2D
			_				Black (5 sec	onds)*		transitional	00:00:05	4 25 MB	2D
		4					Ż		Ļ				
	× tran	sitional	00:0	0:01 → t	ransitional	(	00:00:06 🗕	transitional	00:0	0:11 🗕			
New Show	Black	(1 second) 23	39 JPEG	в	llack (5 seconds) 23	9 JPEG		Black (5 seconds	s) 239 JPEG				
Date Issued: 2014-01-08 16:16:05 Issuer: Issuer Creator: installer Duration: 00:00:11	Duratik Langu Rating Encod Asped	on: 00:00:01 age: : :ng: 2K JP2K : Ratio: 1.9		Di Lá R As	uration: 00:00:05 anguage: ating: ncoding: 2K JP2K spect Ratio: 1.9			Duration: 00:00:09 Language: Rating: Encoding: 2K JP2 Aspect Ratio: 1.9	ĸ				
Player	A	utomation		Bu	ilder		Content		Sched	luler		System	

Figure 8-3. Adding Content to Playlist

### Adding Trailers to the Playlist

Trailers are added in the same way, by selecting the content and adding them to the timeline. The timeline will automatically slide to the left as additional content is added to the playlist. A double click on the desired trailer will quickly add it to the timeline. Figure 8-4 includes trailers that have been added to the playlist.



Figure 8-4. Adding Trailers to Playlist

### Making Changes

If a mistake is made and the wrong content is added or the clip needs to be repositioned in the timeline, a **long press** (clicking and holding) on the content that needs to be altered will bring up the edit buttons. In Figure 8-5 the **Captain Phillips** trailer was added twice. A long press was done to the second instance and the edit icons have appeared.

The back arrow is used to move the clip to an earlier position in the playlist. The **Delete** icon will remove the selected clip.

	Mover ear	lier 💼	Delete	Hove lat	ter
Show Manager	the line has	Dates - Deal County Value	name had		
X Installer O ESATA Drive R	emoved (	Screen 14	Select	Wee	d Jan 8 16:48 GMT-0800 2014
Title	Durati Annot Date Is	su Creator Issuer	All Clips Features	Trailers Ads	Other Clips Cues
			Title WAY-WAY-BACK_TLR-A Salinger_TLR-1_S_EN-X SEVENTH-SON_TLR-1-2 RIDDICK_TLR-1_S_EN-XX RUSH_TLR-2_S_EN-XX CAPTAIN-PHILLIPS_TLR WOLVERINE_TLR-A-2D LAST-VEGAS_TLR-1_S DISCONNECT_TLR-1_S PRISONERS_TLR-1_S_E PRISONERS_TLR-1_S_E	Type         Di          S_EN-XX_US-G         trailer         00           X_US-GB_51-HI_         trailer         00           2D_S_EN-XX_US-         trailer         00           xL_US-GB_51_2H         trailer         00          US-GB_51_2K_L         trailer         00          US-GB_51_2K_L         trailer         00          US-GB_51_2K_L         trailer         00          S_EN-XX_US-GI         trailer         00          S_EN-XX_US-GI         trailer         00          S_EN-XX_US-GI         trailer         00          EN-XX_US_51_2K_C         trailer         00          EN-XX_US_56         trailer         00	Size         2         Aspe           2.90 GB         2D         2.39           002:30         2.90 GB         2D         2.39           002:31         1.70 GB         2D         2.39           002:30         2.25 GB         2D         2.39           002:30         3.26 GB         2D         2.39           001:30         1.51 GB         2D         2.39           001:32         3.74 GB         2D         2.39           001:56         1.85 GB         2D         2.39           001:07         1.45 GB         2D         2.39           001:07         2.55 GB         2D         2.39           001:07         2.55 GB         2D         2.39
New Show Date Issued: 2014-01-08 16:16:05 Issuer: Issuer Creator: Installer Duration: 00:09:39	trailer     HOBBIT-2_TLR-1-20_S_EN-X     GB_51_2X_WR_20130517_I     Duration: 0002:07     Language: EN-XX     Rating: US-GB     Encooding: 2X_JP2X     Aspect Ratio: 2.39	00:04:35 → trailer CAPTAIN-PHILLIPS_ GB_51_4K_SPE_201 Duration:00:02:32 Language: EN-XX Rating: US-GB Encoding: 4K.JP2K Aspect Ratio: 2.39	00:07:07 ILR-1_S_EN-XX_US- 30501_DLA_OV Language: E Rating: US-2 Enceting: 44 Enceting: 44	er 00:09:39 → HLLIPS_TLR-1_S_EN-XX_US- SPE_20130501_DLA_OV 02:32 N-XX 88 :2:39	
Player	Automation	Builder	Content	Scheduler	System

Figure 8-5. Making changes to a Clip

### Saving the Playlist

When the desired content is added to the playlist, selecting the **Save** button in the playlist title block will save the show. The playlist will appear in the left data grid, with the **Title**, **Duration**, **Annotation**, **Creator**, and **Issuer** information as shown in 8-6. The unlock icon is displayed with the playlist as the encrypted feature contained in the show has a valid license. The unlock icon is also displayed in the timeline for the feature clip to make it clear that content has a valid key.

The timeline may be slid to the left or right to view other portions of the playlist when it extends past the view pane.

To help easily distinguish various types of content, differing colors are assigned to each content type as illustrated in Figure 8-6.

Save Play	list 🧧	Prop	erties	<b>^</b> .	Unloc	ked conte	nt	1	Locke	d con	ten	nt
😂 Show Manager	See.	Marg Sales 1	-	of Computer Salar	catron first							x
K Installer O ESATA Drive R	emoved			Screen 14		Select		١	Ved Jan 8 '	18:47 GMT	-080	0 2014
Title	Durati A	nnot Date Issu	Creator	Issuer	All Clips	Features	Trailers	Ads	Otl	her Clips		Cues
New Show	01:38:18	2014-01-	08 installer	Issuer	Title			Туре	Duration	Size	2	Aspe
					🔒 2K DCI Max	imum Bitrate Comp	position (End	test	00:10:40	20.62 GB	2D	1.9
				<u> </u>	3ALITY-SPL	_ASH-DEMO_SHR_	_F_EN-XX_I	short	00:03:53	4.71 GB	ápì	1.78
				<u> </u>	🔓 4K DCI Max	imum Bitrate Comp	position (End	test	00:10:40	20.87 GB	2D	1.9
				<u> </u>	96k_16ch_s	smpte_tlr		test	00:02:24	4.57 GB	2D	1.9
					Black (1 sec	cond) 185 JPEG		transitior	00:00:01	4.25 MB	2D	1.9
				<u> </u>	Black (1 sec	cond) 239 JPEG		transitior	00:00:01	5.33 MB	2D	1.9
					Black (1 sec	cond)*		transitior	00:00:01	903.02 KE	2D	1.9
				<u> </u>	Black (5 sec	conds) 185 JPEG		transitior	00:00:05	4.25 MB	2D	1.9
					Black (5 sec	conds) 239 JPEG		transitior	00:00:05	5.33 MB	2D	1.9
		Ţ	4		Black (5 sec	conds)*	ł	transitior	00.00.02	4 25 MB	2D	1.9
	× trailer		:07:07 <b>→</b>	advertisement	00:07:53 →	feature 🍙	01:3	8:07 🔿	transition	al	01:	:38:12 -
New Show Date Issued: 2014-01-08 16:16:05 Issuer: Issuer Creator: installer Duration: 01:38:17	6B_51_4H Duration: ( Language Rating: US Encoding: Aspect Ra	<u>(_\$PE_20130501_D)</u> 10 02:32 :EN-XX :≎GB 4K JP2K tio: 2.39		XX_AU_51_2K_2008 Duration: 00:00:46 anguage: EN-XX Rating: Encoding: 2K_JP2K Aspect Ratio: 1.85	<u>1114_DGB</u>	XX_OV_71_2K_PC Duration: 01:30:14 Language: EN-XX Rating: Encoding: 2K JP2K Aspect Ratio: 2:39	<u>20110921</u> 11	DC_13D_	Diack (5 sect Duration: 00:0 Language: Rating: Encoding: 2K Aspect Ratio:	900:05 JP2K 1.9		
Player	Autor	nation	B	uilder	Conten	nt	Sched	uler		Syster		

Figure 8-6. Saving Playlist

## Automation Cues

With all of the content added, the next step is to add the automation cues required for this playlist. The CMS-2200 comes with many built-in cues to support the projectors, CMSA-100 and USL cinema processors. Figure 8-7, 8-8, and 8-9 show examples of the CMSA, projector, and audio cues that come built into the CMS-2200. Additional custom cues may be defined and added to the list as necessary

Cues	CMSA	Р	rojector	A	oibu	Automation
Action		Descriptio	n		System	Туре
CMSA_LIGH1	IS_UP	CMSA-100	Lights Up		CMSA A	Automation
CMSA_LIGH1	rs_mid	CMSA-100	Lights MID		CMSA A	Automation
CMSA_LIGH1	rs_down	CMSA-100	Lights Up		CMSA A	Automation
CMSA_AUDIO	D_NS	CMSA-100	AUDIO No So	und	CMSA A	Automation
CMSA_AUDIC	D_TRAILER	CMSA-100	AUDIO for Tra	ilers	CMSA A	Automation
CMSA_AUDIC	D_MOVIE	CMSA-100	AUDIO for Mo	vie	CMSA A	Automation
CMSA_MASK	_FLAT	CMSA-100	Projector Flat	Maskir	CMSA A	Automation
CMSA_MASK	_SCOPE	CMSA-100	Projector Scor	be Mas	CMSA A	Automation

Figure 8-7. CMSA Automation Cues

Cues	CMSA	Project	tor	Audio		Automation
Action			Descrip	tion		System Type
BARCO_PRO	JECTOR_DOWS	ER_CLOSE	Close th	e projector dow	ser	Barco Projector
BARCO_PRO	JECTOR_DOWS	ER_OPEN	Open th	e projector dow	ser	Barco Projector
BARCO_PRO	JECTOR_LAMP_	_ON	Turn on	the projector la	mp	Barco Projector
BARCO_PRO	JECTOR_LAMP_	_OFF	Turn of	the projector la	mp	Barco Projector
BARCO_PRO	JECTOR_SLEEP	)	Put the	Projector to SLE	EP	Barco Projector
BARCO_PRO	JECTOR_WAKE		Wake u	p the Projector		Barco Projector
FLAT_4K			Auto De	tected Macro		BARCO PROJ M
SCOPE_4K			Auto De	tected Macro		BARCO PROJ M

Figure 8-8. Projector Automation Cues

Cues	CMSA	Projector	Audio	Automation
Action		Description	Sy	stem Type
AUDIO_MUTE		Mute the audio system	JSI	D-60 Audio
AUDIO_UNMI	JTE	Unmute the audio syster	n JSI	D-60 Audio
AUDIO_LOW		Adjust volume level to lo	N JSI	D-60 Audio
AUDIO_MID		Adjust volume level to m	edium JSI	D-60 Audio
AUDIO_HIGH		Adjust volume level to hi	gh JSI	D-60 Audio
AUDIO_COAX	(	Set the COAX as Input	JSI	D-60 Audio
AUDIO_TOSL	INK	Set the TOSLINK as Inpu	ut JSI	D-60 Audio
AUDIO_8CH		Set the 8CH as Input	JSI	D-60 Audio
			H 101	

Figure 8-9. Audio Automation Cues

To add automation cues to the playlist, the first step is to select the clip to receive the cue. Double clicking on any of the predefined cues will quickly attach it to the selected clip in the timeline. A cue can also be attached to a clip by using the **Add** button.

In automation view there are buttons along the bottom of each clip to add automation cues. The **Add Cue** button is used to add an automation cue to the selected clip. The **Edit Cue** button is used to make changes to an existing automation cue and the **Delete Cue** button can remove a selected cue.

Clicking on the **Add Cue** button will bring up the cues dialog window (Figure 8-10), which will allow the selection of the appropriate cue and setting of the offset. The offset may be either from the **start** or the **end** of the clip.

Cues				
Cues	CMSA	Projector		Automation
	JSD	60_6_CH_ANALOG	i	
Act	ion: JSD	60_NON-SYNC		
	JSD	60_MIC	_	
Offset Fi	rom:	Start		End
Seco	nds: 10		00 00	: 10
_	)			
		Ok	Cancel	

Figure 8-10. Cues Dialog

Figure 8-11 illustrates the **Dowser Close** and **Audio Mute** cues that were added to the first clip of the playlist. Each as the default offset (00:00:00) from the start of the cue. Note that the timeline has changed to the automation view, so that each automation cue can be easily seen with its offset.



Figure 8-11. Cue Detail

## **Clip View**

The **clip view** button will return the timeline to its normal view as shown if Figure 8-12. The automation cues are now identified as icons in the clip. The location of the graphics will be positioned relative to their offset within the clip. The timeline view makes it easy to quickly identify both where automation cues are, and what type of cue is located in each clip. The icons below categorize the cues.

Pr	ojector Cu	es	Q	Ethe	ernet Auto	mation	Cues		Audio	Cues
Show Manager      Installer      Log Off      Logged into set	rver	(ł)	<b>□</b> 介	Screen 14		Select			nu Jan 9 18:	48 GMT-0800 2014
Title	Durati Annot	t Date Issu	. Creator	Issuer	All Clips	Features	Trailers	Ads	Other	Clips Cues
New Show	01:38:18	2014-01-08	installer	Issuer	Cues	CMSA	Projector	A	Audio	Automation
					Action		Desc	ription		System Type
					BARCO_PROJE	CTOR_DOWSE	ER_CLOSE Close	e the projec	tor dowser	Barco Projector
					BARCO_PROJE	CTOR_DOWSE	R_OPEN Oper	the projec	tor dowser	Barco Projector
					BARCO_PROJE	CTOR_LAMP_C	ON Turn	on the proj	ector lamp	Barco Projector
					BARCO_PROJE	CTOR_LAMP_C	OFF Turn	off the proj	ector lamp	Barco Projector
					BARCO_PROJE	CTOR_SLEEP	Put t	he Projecto	r to SLEEP	Barco Projector
					BARCO_PROJE	CTOR_WAKE	Wak	e up the Pro	ojector	Barco Projector
		J	<b>A</b>				Ţ			
	× transitiona	00:0	00:01 🔶 👔	transitional	00:00:06 →	transitional	00:0	):11 → tr	railer	00:02:28 -
New Show	Black (1 secon	d) 239 JPEG	1	Black (5 seconds) 23	9 JPEG	Black (5 second	is) 239 JPEG	G	R_MAGORIUM_ B_51_2K_FW_	_TLR-C_S_EN-XX_US- 20070814_FKI
Date Issued: 2014-01-08 16:16:05 Issuer: Issuer Creator: installer	Duration: 00:00: Language: Rating: Encoding: 2K Jf Aspect Ratio: 1.	01 P2K 9	D L R E	uration: 00:00:05 .anguage: Rating: Encoding: 2K JP2K Aspect Ratio: 1.9		Duration: 00:00:0 Language: Rating: Encoding: 2K JP: Aspect Ratio: 1.9	05  2K  }	Du La Ra En As	uration: 00:02:1 anguage: EN-XX ating: US-GB ncoding: 2K JP2 spect Ratio: 2.3	7 k 2K 9
	<b>N</b>			<b>4</b> ))		<b>●</b> 》 <b>⇔</b>				
Player	Automatio	n	Bu	uilder	Conten	t	Schedu	ler		System

Figure 8-12. Clip View of Timeline with Automation Cues

# Copy Playlist

Using the **Copy Playlist** button will duplicate the playlist in the grid that is currently selected. A dialog window will ask to confirm copying the playlist.



Figure 8-13. Copy Playlist

In the Figure 8-14 the **New Show** was copied to a second show and a third show. The title and main feature of each copied show was then edited. All three shows are now visible in the playlist pane on the left side of the builder display.

<b>4</b> 2 S	how Manager			- Seat	-	-							• X
2	Installer OLogged into serv	er				Screen 14		Select		Т	hu Jan 9 19	9:41 GMT-08	300 2014
	Title	Durati	Annot	Date Issu	Creator	Issuer	All Clips	Features	Trailers	Ads	Othe	er Clips	Cues
ſ.	New Show Puss-In-Boots	01:38:18	3D/24fps	2014-01-08	installer	Issuer	Cues	CMSA	Drojector	_	Audio	Automa	tion
۲	Second Show Red450 Red65	00:57:52	4K/24fps	2014-01-08	installer	Issuer	Cues	Смая	FIOJECIOI		Audio	Automa	
<b>^</b> _	Third Show LittleRivers	02:08:25	3D/48fps	2014-01-08	installer	Issuer	Action		De	scription		System Typ	be in the second se
							AUDIO_MUTE		Mu	te the audio	system	JSD-100 Au	dio
							AUDIO_UNMUT	E	Un	mute the au	dio system	JSD-100 Au	dio
							AUDIO_LOW		Adj	ust volume I	level to low	JSD-100 Au	dio
							AUDIO_MID		Adj	ust volume I	level to med	JSD-100 Au	dio
						<u> </u>	AUDIO_HIGH		Adj	ust volume l	level to high	JSD-100 Au	dio
							AUDIO_MUTE		Mu	te the audio	system	JSD-60 Aud	io
						<u> </u>	AUDIO_UNMUT	E	Un	mute the au	dio system	JSD-60 Aud	io
-						<u> </u>	AUDIO_LOW		Adj	ust volume l	level to low	JSD-60 Aud	io
									A	uct volumo l	lovel to mod	100 00 400	in I
	😂 📄				P		Ż		Ļ				
		× tran	sitional	00:00	0:01 🔿	transitional	00:00:06 🔶	transitiona	I 00:	00:11 🔿 I	trailer	C	0:02:28 -
N	w Show Pues In Boots	Black	(1 second) 2	239 JPEG		Black (5 seconds) 23	9 JPEG	Black (5 secon	ds) 239 JPEG		MR_MAGORIU GB_51_2K_FW	M_TLR-C_S_EN /_20070814_FF	-XX_US- (I
3D Da Iss Cr Du	/24fps te Issued: 2014-01-08 16:16:05 uer. Issuer aator: installer ration: 01:38:17	Durati Langu Rating Encod Aspec	on: 00:00:01  age:  :  ing: 2K JP2K I Ratio: 1.9   	:	C F E A	Duration: 00:00:05 anguage: Rating: Encoding: 2K JP2K Ispect Ratio: 1.9		Duration: 00:00: Language: Rating: Encoding: 2K JF Aspect Ratio: 1.	05 2K 9	C F F A	Duration: 00:02 .anguage: EN- Rating: US-GB Encoding: 2K J Ispect Ratio: 2	17 XX 29 39	
	Player	Au	utomation		В	uilder	Content		Scheo	luler		System	

Figure 8-14. Several Copied Shows

# Show Playlist Transfer

Users can transfer show playlists to other CMS devices using the upload button 4. This feature will copy the order of clips and their attached cues to another CMS system. The content associated with those clips will need to be ingested on the receiving CMS for valid playback to occur.

## Intermissions

Intermission support has been added. On the CMS Builder tab, you can add a secondary playlist as a cue to a playlist. When playback reaches this cue, the main playlist will stop, the secondary playlist will load and play to completion, then the main playlist will load and resume.

- 1. Build a playlist as desired that will be the intermission.
- 2. Click the middle of a clip pane to bring up "cue" view.
- 3. Click the reel icon to select a playlist to add as intermission.
- 4. A cue with the name of the playlist will be added. Select the cue and click the "edit" pencil button to change the timing.
- 5. Save the playlist.



# 9.0 Scheduler Tab

With show playlists created, the **scheduler tab** is used to schedule the shows. The scheduler tab is organized with the available shows listed in the upper left data grid. On the right side of the Schedule tab is the schedule calendar. The schedule calendar can be filtered by **All Days** or a **Single Day** along the top tabs. The **left arrow** and **right arrow** buttons can be used to move ahead or back in time.

To schedule a show, one of the available shows is selected by clicking on the show name and using the spinner control to select the start date and time. The **right arrow** button will place the show into the calendar. The calendar will display the **start time**, the **end time** and the **duration** of the show.

Schedule Show



Figure 9-1. Scheduler Tab

### In Figure 9-2, New Show Puss-In-Boots was added at 3:00 pm, 5:00 pm, 7:00 pm, and 9:00 pm.

The **Repeat Days** buttons are used to automatically add additional shows for the selected number of subsequent days. In the case of the 3:00 PM show the **Repeat Days** was selected for **5**, which also added the show for the next five days. Thus in Figure 8-3 the calendar shows the 3:00 show is also scheduled on the subsequent five days Friday, Saturday, Sunday and Monday and Tuesday.

🍇 Show Ma	nager	Sec. 1	8- 1										X			
💥 Instal Log	er 🔘 Logged into serve Off					Scree	en 14			Select				Thu Jan 9 19:	57 GMT-0800	2014
	Available Shows						DAVE		Thu	Fri	Sat	Sun	Mon	Tue	Wed	
	New Show Puss-Ir	1-Boot	s			ALL	LUATS		01-09	01-10	01-11	01-12	01-13	3 01-14	01-15	
	Second Show Red	450 R	ed650	)					Th	ursday	/ Jan	uary (	)9, 20	014		
	Third Show LittleF	livers				Plavlist Title Start Time End Time							Durati			
						New Show Puss-In-Boots 3:00 PM 4:38:18 PM 01:3							01:38:18			
						New Show Puss-In-Boots 5:00 PM 6:38:18 PM						01:38:18				
							New Show Puss-In-Boots 7:00 PM 8:38:18 PM							8:38:18 PM	01:38:18	
						•	New S	how Pus	s-In-Bo	ots		9:00	PM	10:38:18 PM	01:38:18	
					I											
	04+ D		<b>.</b>													
	Start Day	and	IIm	e												
	Wed, Jan 8	1	58													
	Thu, Jan 9	2	59	AM	_											
	Fri, Jan 10	3	00	PM												
	Sat, Jan 11	4	01													
	Sun, Jan 12	5	02													
	Fri January 10	2014 03	:00 PM													
	Repeat Day	s														
	None 1 2 3 4	5	6		Show Pomindor											
(							-									
							5									
	Player		Automa	tion	Bui	lder			Conte	ent		Schedu	uler		System	
				F	igure 9-2 /	1 h h	ing S	hows	to th	he Sch	ماريله					

3D Mode

3D Mode

If a playlist contains a 3D content select the consistence of the schedule of the schedule. This will switch the CMS to 3D mode automatically when the schedule show is loaded. All 2D content in the playlist will be played in clone mode and display properly. For example a playlist containing a 3D feature with 2D trailers will be played seamlessly with the 3D icon applied to the scheduled playlist

Show Manag	ger		Red -	8- L									
X Installer	Logged into server			Scree	en 14		Select				Thu Jan 9 20:	02 GMT-08	00 2014
A	vailable Shows			ALL	DAYS	Thu	Fri	Sat	Sun	Mon	Tue	Wed	
N	lew Show Puss-In-	Boots				01-09	01-10	01-11	01-12	01-13	01-14	01-15	
s	econd Show Red4	50 Red650					All Sc	hedul	ed Sh	ows			
т	hird Show LittleRiv	vers			Start Date	Plavlist 1	ītle		Start	Time	End Time	Durati	
				۲	Thu-01-09	New Sho	w Puss-l	n-Boots	3:00	PM	4:38:18 PM	01:38:18	
						New Sho			5:00	PM	6:38:18 PM	01:38:18	
				•		New Sho	w Puss-l	n-Boots	7:00	PM	8:38:18 PM	01:38:18	
				•		New Sho	w Puss-l	n-Boots	9:00	РМ	10:38:18 PM	01:38:18	
	Start Day a	and Time		•	Fri-01-10	New Sho	w Puss-l	n-Boots	3:00	РМ	4:38:18 PM	01:38:18	
	Wed, Jan 8	1 58 2 59 AM		•	Sat-01-11	New Sho	w Puss-l	n-Boots	3:00	РМ	4:38:18 PM	01:38:18	
	Fri, Jan 10	3 00 PM		•	Sun-01-12	New Sho	w Puss-l	n-Boots	3:00	РМ	4:38:18 PM	01:38:18	
	Sat, Jan 11	4 01		•	Mon-01-13	New Sho	w Puss-l	n-Boots	3:00	РМ	4:38:18 PM	01:38:18	
	Sun, Jan 12	5 02		•	Tue-01-14	New Sho	w Puss-I	n-Boots	3:00	РМ	4:38:18 PM	01:38:18	
N	Repeat Days	5 6 台 🕓	how Reminder										
									Ì				
	Player	Automation	Bui	lder		Conter			Schedu	ler		System	

Figure 9-3. Show Schedule Across Several Days

All Scheduled Shows displays shows scheduled over all days

Show Manage	r		-	-	and the second sec			
<b>⅔ Installer</b> Log Off	Logged into server			Screen 14	Select		ri Jan 10 12:16 GI	/IT-0800 201
Av	ailable Shows			ALL DAYS	Fri Sat Sun	Mon Tue	Wed Thu	
Ne	w Show Puss-In-E	Boots			01-10 01-11 01-12 0	01-13 01-14	01-15 01-1	
Se	cond Show Red4	50 Red650			All Scheduled	Shows		
Th	ird Show LittleRiv	vers		Start Date	Playlist Title	Start Time	End Time Dur	ati
				• Fri-01-10	New Show Puss-In-Boots	3:00 PM 4	38:18 PM 01:3	8:18
				• Fri-01-10	Second Show Red450 Red650	4:50 PM 5	5:47:52 PM 00:6	7:52
				General Fri-01-10	Third Show LittleRivers	6:55 PM 9	0:03:25 PM 02:0	8:25
				• Sat-01-11	New Show Puss-In-Boots	3:00 PM 4	:38:18 PM 01:3	8:18
	Start Dav a	ind Time		Sat-01-11	Second Show Red450 Red650	4:50 PM 5	5:47:52 PM 00:5	7:52
	Wed, Jan 8	10 13		Sat-01-11	Third Show LittleRivers	6:55 PM 9	0:03:25 PM 02:0	8:25
	Thu, Jan 9	11 14 AM		• Sun-01-12	New Show Puss-In-Boots	3:00 PM 4	:38:18 PM 01:3	8:18
	Eri Jon 10	12 15 DM		Sun-01-12	Second Show Red450 Red650	4:50 PM 5	5:47:52 PM 00:5	7:52
	FII, Jan IU			Sun-01-12	Third Show LittleRivers	6:55 PM 9	0:03:25 PM 02:0	8:25
	Sat, Jan 11	1 16		Mon-01-13	New Show Puss-In-Boots	3:00 PM 4	:38:18 PM 01:3	8:18
	Sun, Jan 12	2 17		O Mon-01-13	Second Show Red450 Red650	4:50 PM 5	5:47:52 PM 00:6	7:52
	Fri January 10,20	14 12:15 PM		Omega Mon-01-13	Third Show LittleRivers	6:55 PM 9	0:03:25 PM 02:0	8:25
	Repeat Days			• Tue-01-14	New Show Puss-In-Boots	3:00 PM 4	:38:18 PM 01:3	8:18
Nor	ne 1 2 3 4	5 6 台 📖		• Tue-01-14	Second Show Red450 Red650	4:50 PM 5	5:47:52 PM 00:6	57:52 T
		St	low Reminder					
PI	layer	Automation	Buik	der	Content	Scheduler	Sys	tem

Figure 9-4. All Scheduled Shows

In the case where adding a show will overlap in the schedule the following pop-up will warn of the overlap and the show will not be added to the schedule.



Figure 9-5. Warning Overlapping Schedules

In the case where a scheduled show needs to be moved, double clicking on the already scheduled show will bring up a change box as shown in Figure 8-6. This dialog box will allow the start time to be changed.

Show Manager																• ×
Administrator	ESATA Drive Pr	esent			(†) <b>(</b>	<b>고</b> 슈	Mike's m	iniature	theater	Selec	et		êó	Fri Feb 14 1	1:20 GMT-0	300 2014
Administrator Available S Cue rest Encrypted Granularity Lots of fur Lots of fur New Show Sta Wed, I Thu, I Fri, I Sat, I Sun, I Fri	ESATA Drive Pr Shows show with y a sometim a test r r Feb 12 Feb 12 Feb 13 Feb 14 Feb 14 Feb 15 Feb 16	esent h one es 11 12 1 2 3 014 01:	<ul> <li>► key</li> <li>Tim</li> <li>34</li> <li>35</li> <li>36</li> <li>37</li> <li>38</li> <li>36 PM</li> </ul>	e AM	Ouration     No:10:40     P2:20:22     P0:10:40     P0:11:20     P0:18:16		Mike's m ALL DAYS Playlis Cost of Cost of Co	t Title t Title f fun tee f fun sc arity	theater Fri 02-14 F metimes Chan	seter 02-15 riday F ge the start 2014-F 11 12 1 2 3	sun 02-16 ebri feb-14 To 34 35 36 37 38 37	Mon 02-17 Uary 1 Sta 11:2 12:0 fa Sched 13:36:00 AM PM	4, 20 rt Time 20 AM 00 PM uled Sh	Fri Feb 14 11 Wed 02-19 14 End Time 11:41:20 AM 12:10:40 PM 22 PM	20 GMT-0:	
None 1 2	2 3 4	5	6 6	4	Show Reminder											
Player			Automa	tion		Builde	er		Conte	ent		Sche	duler		System	

Figure 9-6. Change Start Time of Scheduled Show

## Show Start Reminder

A show reminder can be set, which will create a pop-up alert before each scheduled show. The available alerts are 1 minutes, 5 minutes, 15 minutes, 30 minutes and 1 hour. The reminder will automatically close in 10 seconds, or can be closed immediately with the close button.

🍓 Show Ma	inager				-								• ×
💥 Instal Log	ler 🔘 Logged into ser	er				Screen 14		Select			Fri Jan 10 12:	31 GMT-080	00 2014
	Available Shows							Fri Sat Sun	ľ	<i>l</i> ion Tue	Wed	Thu	
	New Show Puss-In-Boots				ALL DAYS		01-10 01-11 01-12		1-13 01-14	4 01-15	01-16		
Second Show Red450 Red650 All Scheduled Shows													
	Third Show Little	Rivers											
						Stan	t Date	Playlist litle		Start Time	End lime	Durati	
						💿 Thu-	01-09			3:00 PM	4:38:18 PM	01:38:18	
						🔵 Thu-	01-09	New Show Puss-In-Boots	1	5:00 PM	6:38:18 PM	01:38:18	
					Sche	eduled Sh	ow Star	New Show Russ In Roots		7:00 PM	8:38:18 PM	01:38:18	
					Please enter a t	ime for an a	lert before	each scheduled show		9:00 PM	10:38:18 PM	01:38:18	
	Start Da	/ and	l Tim	ie	r lease enter a t		ient berone	caon soncaaled show.		10-06 DM	2-04-49 DM	04-20-40	
	Wed Jan	8 10	24		1	0 Minu	tes	_	-	3:00 PM	4:38:18 PM	01:38:18	
						5 Minut	es		d650	4:50 PM	5:47:52 PM	00:57:52	
	Thu, Jan	9 11	25	АМ		1 Minut	e		-	6:55 PM	9:03:25 PM	02:08:25	
	Fri, Jan 1	0 12	2 26	PM		_	_						
	Sat. Jan 1	1 1	27			Save	e Close			3:00 PM	4:38:18 PM	01:38:18	Ĭ
	Sup lon 1		00			- Our	) (- ( ) (	accona anow Reason Re	d650	4:50 PM	5:47:52 PM	00:57:52	
	Sun, Jan I					Sat-0		Third Show LittleRivers		6:55 PM	9:03:25 PM	02:08:25	
	FII January	0,2014 1	2.20 PM			Sun.	.01.12	New Show Puss-In-Boots		3-00 PM	4:38:18 PM	01:38:18	
	Repeat Da	vs				Sun-	01-12	Second Show Red450 Re	d650	4:50 PM	5:47:52 PM	00:57:52	
						Sun-		Third Show LittleRivers		6:55 PM	9:03:25 PM	02:08:25	
				how Reminder									
						-						y	
	Player		Automa	ation	Buik	der		Content		Scheduler		System	

Figure 9-7. Show Start Reminder



Figure 9-8. Reminder Pop-Up on Player Screen

Schedules are active as soon as they are created and the **Player** is set in **Scheduled** mode. When in scheduled mode, the player will automatically load the next available scheduled show and place it in the stopped mode. The scheduled **start** and **end** time will be available on the player in the upper right and the **Starts In** timer will countdown until the scheduled start time arrives and the show begins. When a scheduled show time arrives, the player will automatically start the show.

Even when in scheduled mode, the transport controls can be unlocked and used to manually override the schedule. The scheduler will not preempt a manual override or playing feature. The scheduler will wait until the player is in a **Stopped** state and then wait for the next available start time in a scheduled show. If the player is in a **Stopped** state when a scheduled start time arrives the player will play that show.

## Copy Schedule

The **Copy Schedule** button will bring up a copy dialog box that allows a show to be copied forward up to seven days. Figure 8-8 illustrates the **Copy Schedule** feature. The **Second Show Red450 Red 650** show is selected (dark blue) so it will be the show that is copied forward. One or more shows can be selected for copying. If no shows are selected, then ALL shows will be copied forward the specified number of days.



Figure 9-9. Copy Schedule

# 10.0 Automation Tab

## CMSA-100

The **Automation** tab provides a direct visual representation of the USL CMSA-100 automation system. When a CMSA automation system is connected, pressing any of the automation buttons will flash that automation cue on the CMAS-100 unit. The LED on automation view will flash to indicate the cue was activated and the LED on the automation unit will also flash. The indicators above each function will flash when CMSA automation cues are triggered during a show that is playing.

The labels that below each button on the virtual CMSA-100 may be customized to display any alternative text

## Browsing Automation Commands

On the bottom half of the **Automation** tab is a list of all the available automation commands. The **All**, **CMSA**, **Projector** and **Audio** buttons on the left can filter commands. To execute an automation



command, first select it, and then press the Fire Cue button  $\nearrow$  .

Figure 10-1. Automation Tab

# 11.0 System Tab

The System tab page is divided into System Status, Users, Security Reports and Settings subsections.

## System Status

The System Status page provides detailed information on the CMS-2200 that is useful for diagnostic purposes. System statistics are displayed here, along with disk space usage, and the current RAID status. Additionally, the system log messages are displayed in the bottom part of the screen with the log message and the associated timestamp.

In the event the RAID needs to be resynchronized, clicking the O button will begin this process. The CMS-2200 can run RAID resynchronization while playing content without any interruption or interference from this process.

🛃 Show Mai	nager						
Device							
💥 Installer Log Off	USB Drive Pres	sent	Screen-1	Select	Mon Dec 16 14:46 GMT-0		
System Status			Users	Security Repo	orts	Settings	
System	n Status						
Statistic	Name	Current Value	Disk Space Usage		Current RAI	D Status	
del		95654				State: cl	aan
req		95654	Free Space			Action: id	le
dmaerr		0	906.85 GB			Degraded: N	o
ebcto		0	64.38%		Percent Complete: 0% Estimated Time Remaining: 00:00:00 Resynchronize RAID		
late0		0					
late1		0					
locked0		0		Head Space			
locked1		0		501 52 GB			
repeat		0		35.61%			
notready		0		-232217			
streamer	r	0	Total Avail	able Disk Space			
waitto		0		1.38 TB			
System	n Loas						
Timestamp		Message			_		
Moscurp Mo							
Mon Dec 16 14:45:38 GMT-0800 2013 Connecting to TI projector ICP [ 192.168.254.243 ]							
Mon Dec 16 14:44:38 GMT-0800 2013 Failed to connect to projector [Failed to connect to peer address [Connection timed oul]]							
Mon Dec 16 14:44:17 GMT-0800 2013 Connecting to TI projector ICP [ 192.168.254.243 ]							
Mon Dec 16 14	4:43:17 GMT-0800 201:	3 Failed to conne	ect to projector [ Failed to connect to peer address	s [Connection timed out] ]			
	Player	Automatio	on Builder	Content	Sche	eduler	System

Figure 11-1. System Status

## **Users** Details

On the user details page, users may be added and assigned a user level. Users may be enabled or disabled. The user accounts reside on the CMS-2200. The standard tool buttons are available and listed below.

<b>Refre</b>	sh user list 🚽	Add new use	r 🗡 Edit exist	ing user 💼	Delete user		
Show Manager					<b>—</b> • <b>×</b>		
Device							
Kinstaller Log Off	int (	Screen-1	Select	Mo	n Dec 16 14:47 GM1-0800 2013		
System Status	S	Users	Security Report	rts	Settings		
User Administratio	n						
	User Name		User Level	Enable	ed Status		
	🤱 projection		Projectionist	Yes	Yes		
	🤱 manager		Manager	Yes	Yes		
	🤰 installer		Installer	Yes	Yes		
	🤱 admin		Administrator	Yes	Yes		
	2 Projectionis	st 1	Projectionist	Yes			
	🤰 Mike		Installer	Yes	Yes		
	🧕 Jenny		Projectionist	Yes			
	1 test		Projectionist	Yes			
	🧵 Rob		Projectionist	Yes	Yes		
	🧕 George		Projectionist	Yes	Yes		
		Ż	<b>-</b>				
Player	Automation	Builder	Content	Scheduler	System		

Figure 11-2. User Details

The Add User pop up provides space for the user name, the user level, **Projectionist**, **Manager**, **Installer**, or **Administrator**; and a user password. User accounts can be enabled or disabled with the **User Enable** check box. It is important to note that users cannot create user accounts above their own level, thus only an administrator can create other administrator accounts.

Add User	
User Name	
User LevelUser Level	Projectionist Manager
User Password	
Confirm Password	
User Enabled	✓

Figure 11-3. Add User Pop-Up

The Edit User tool will bring up the User details, however the passwords will not be displayed. In order to change the password the **Change Password** box must be checked. This will add a field for the old password to be entered, which will enable the new user password and confirm password values to be stored using the **Save Settings** button

Edit User	
User Name	Seth
User LevelUser Level	Projectionist Manager Installer
User Password	
Confirm Password	
User Enabled	<b>~</b>
Change Password	<b>~</b>

Figure 11-4. Edit User

## Security Reports

The **Security Report Manager** enables the user to generate Digital Rights Management logs for reporting to content distributors. Once a date range is chosen using the two spinners a XML Security Report can be generated and saved locally by using the **Save Security Report** button. The saved Security Report will only contain logged data that occurred in the chosen date range.

System Status			Use	ərs		Sec	urit	y Rep	orts	_	Settings
System Statu	s anager Security logs To create an Start Mon, Apr 14 Tue, Apr 15 Wed, Apr 16 Thu, Apr 17 Fri, Apr 18 Wed Apr 16 10:56	prov Secu Date 8 9 10 11 12 32 GM	Use ride Di rity Re 54 55 56 AM 57 PM 58 57 PM 58	ers gital Rights Ma eport, specify a Mo Tu We Th F 014 Wed Apr	nageme Start Da End In, Apr 14 Ie, Apr 15 Id, Apr 16 Iu, Apr 17 Iri, Apr 18 r 16 10:56:	Sec ent i ate / Dat 8 9 10 11 12 32 G	urit; info / Tir 54 55 56 57 58 MT-0	y Rep rmati ne ar PM 700 20	orts ion at the re nd an End D	quest of c ate / Time Save Se	Settings ontent distributors.
Player	Automation			Builder		Cont	ent		Sche	duler	System

Figure 11-5. Security Reports

## System Settings

## Projector Settings

### Projector Type

**Projector Type** should be selected with **Barco**, **NEC** and **Christie** are the available choices. The predefined Projector automation commands depend on having the correct Projector Type set.

### 2K/4K Setup

The **Downsample 4K** switch should be set **ON** for 2K projectors, so that 4K content will be automatically down sampled to 2K for projection. It should be set to **OFF**, for 4K projectors.

### 3D System Setup

The **3D System Type** should be set to the appropriate 3D configuration. Choices include None, Real-D, Dolby 3D and Other for different 3D systems.



Figure 11-6. Projector Settings

Note: Once the desired settings are configured use the **Save** button to apply them.

### Server Settings

K Installer Log Off	· (1)	Bill's Desk	Select	Schedule	<b>E</b> Thu Mar 27 07:23			
System Statu	8	Users	Security Reports Settings					
Projector Ser	ver Media Block	Automation	Audio					
Server Settings and	I Information		External Server		nternal Server			
CineCan	vas ON		Server : Bill's Desk IP Address: 192.168.6.106		Address 192.168.6.106			
Auxiliary Content Ser	ver ON		Server : Rick's Desk IP Address: 172.20.1.1		Read OFF			
SHA Verify Bypa	ass OFF				Write OFF			
	Time Zone	<u> </u>						
Africa	Lima							
America	Los_Ang	eles						
Antarctica	Louisvi	lle 📙	Addrase					
Auditorium			Address					
	1-		User Name					
Screen Name Bill's D	CSK		Password					
Launch WEB Tool			File Service OFF		H			
Player	Automation	Builder	Content	Scheduler	System			

Figure 11-7. Server Settings

#### CineCanvas

Controls subtitles via the projector. It should be set to **ON** to support CineCanvas subtitles.

### Auxiliary Content Server

If captioning support is desired the Auxiliary Content Server switch should be set to **ON**.

### SHA Verify Bypass

This switch provides a way to bypass the verification of the SHA hash. It is recommended to be set to **OFF** so that the validity of content assets can be verified during the ingest process. Having the bypass set to **OFF** will increase the time of the ingest process.

#### Time Zone

The device time zone should be set for the local time zone that the CMS-2200 is in. To avoid confusion, verify that the system running the SMS software is also in the same time zone.

#### Screen Name

This field changes how the CMS-2200 appears in the Overview Screen and to other clients.

#### Launch Web Tool

Brings up the USL CMS-2200 Web interface. This interface is used to update the software, retrieve logs, and configure settings described in Section 12.

#### **External File Service**

Each CMS-2200 has the ability to connect to Manger stations, Network Attached Storage (NAS) servers and other CMS-2200's located on the Media Network. A properly configured Media Network allows

content to be transferred seamlessly between separate networked devices, simplifying the ingest process for multiplex theaters. To enable these features make sure the **File Service** switch is set to **ON**. To add an external server either choose it from the list of discovered devices or manually add it using address field.

If you are mounting another CMS-2200 as an external server the default login credentials are below.

## Username: ftp Password: ftp

A green cloud icon 4 will activate in the Status Bar once a successful connection has been established. Content from other devices will now populate in the External Content pane of the **Content** tab and can be transferred like any other physically attached storage device. For more information on Media Network setup see the Media Network portion of Section 3.

**Note:** After establishing a connection, allow a few minutes for a full initial scan of the networked storage device.

Internal File Service

To share a CMS-2200 on the Media Network – allowing internal content to be accessed on other devices – turn the **Read** switch to **ON**. Ensure that the address field is consistent with the IP address schema outlined in Section 3 – Media Network. If you wish to allow **Write** capabilities on other devices set the corresponding switch to **ON**. When the desired settings are made save them with the icon in the lower right.

**Note:** Both **Read** and **Write** functions must be enabled for transferring content between CMS devices and for most Theatre Management (TMS) actions.

To check if the Internal Server has been configured correctly, fall back to the Overview screen. Any CMS-2200's with enabled Internal File Service will appear with the green cloud icon in its status with the corresponding IP address.

Auditorium: Mini-Palm 3 (UBI) Online		7.0
Trailer Test 2 00:00:00 / 00:31:05		NON/SYNC 10.209.48.103
Bears_TLR-1_F_EN-XX_US-GB_51-HI_2K_DI_20130726_DL	Lamp: Off Douser: Closed	Projector: Barco 23b IP Address: 10.208.48.153

Figure 11-8. Overview of Internal Server
# Media Block Details

System Status			Users	Security Rep	Security Reports		Settings
Projector	Server	Media Block	Automation	Audio			
Internal Media Block Information				Security Status			
Component Vendor Model Serial Numbo Media Server Server OS	97 97 -	Version USL, Inc. IMB HFR-1200 000004344B040D12 1.0.0.13.34403 Linux 2.6 32.2-cascade	1.08.10	Marriage: Inactive Physical Marriage: OK Logical Marriage: Tam;	pered	Enclosure: Service Doe Battery: Of	Active or: Closed <
Media Block MB Driver		3.0.0.13.33011 3.0.0.13.34322		Adjust Media Block Time			
MB OS		2.6.33.1		The current MB time is: Mon Dec 16 14:50:58 GMT-0800 2013			58 GMT-0800 2013
MB Security		1.0.2		Time may be adj	usted -360 to	+360 second	ls within 365 days
DSP EPGA		13.0819C0		Current MB offset: 0			
FPGA Securi	tv	DECRYPT TOP.VHD VI	ER 246		(	<b></b>	
		_			New MB	Offset: 0	
Player		Automation	Builder	Content	Sche	eduler	System

Figure 11-9. Media Block Settings

#### Internal Information

The Internal Media Block Information pane has specific model and version details for the media block.

#### Security Status and Marriage

Marriage – Will be Active if both Physical and Logical Marriages are OK

Physical Marriage – Monitors the tamper state of the ICP

Logical Marriage – Monitors the secure communication between the CMS and projector

Enclosure – Indicates the state of the IMB security heatsink

Service Door – Monitors the current state of the service door tamper switches.

**Battery** – Indicates the current status of the security battery. When the battery indicates low, it should be replaced according to the procedure in Section 14.

**Warning:** It is important that this procedure be completed carefully and according to the procedure, as the battery is responsible for maintaining the secure keys for the CMS-2200. If the procedure is not followed correctly, the keys will be lost and the CMS-2200 will be unusable.

## Adjust Media Block Time

This section indicates the current media block time, which is used for all logs and secure time. The media block time is allowed to be adjusted +/- 360 seconds within 365 days. The current offset is shown and the slider may be adjusted to provide a new offset setting. The **Save button** must be used to store the new offset.

Adjust HD-SDI Settings This pane allows you to match the input mode of a variety of HD-SDI sources.

#### Automation System

The Automation subsection of System Settings is where automation commands can be viewed, added, edited, or removed. The left most button toggles between predefined and user defined commands. The remaining buttons filter automations by category. Predefined automation commands cannot be edited or removed in the SMS software.

Log Off	er		Scr	reen 23 - USLO	0020	elect	👰 Tue	Feb 11 12:25 GMT-0	800 20
System Status		Users			Security Reports		Settings		
Projector Serv	er	Media Block	Auton	nation	Audio				
Predefined		All CM	/ISA P	rojector	Audio				
Action		Description		Command		Address	_	System	1
BARCO_PROJECTOR_	DOWSER_CL	Close the projector do	wser	\xfe\x00\x23	\x42\x00\x65\xff	192.168.25	54.242	Earco Projector	
BARCO_PROJECTOR_	DOWSER_OF	Open the projector do	wser	\xfe\x00\x22	\x42\x00\x64\xff	192.168.25	54.242	Barco Projector	J
BARCO_FROJECTOR_	LAMP_ON	Turn on the projector	lamp	\xfe\x00\x00	\x03\x02\x76\x1a\x01	x96\xff 192.168.25	54.242	Barco Projector	
BARCO_PROJECTOR_I	LAMP_OFF	Turn off the projector	lamp	\xfe\x00\x00	\x03\x02\x76\x1a\x00	x95\xff 192.168.25	54.242	Barco Projector	
BARCO_PROJECTOR_	SLEEP	Put the Projector to SI	_EEP	\xfe\x00\x66	\x66\xff	192.168.25	54.242	E Barco Projector	
BARCO_PROJECTOR_	WAKE	Wake up the Projector	r	\xfe\x00\x65	\x65\xff	192.168.25	54.242	Barco Projector	
AUDIO_MUTE		Mute the audio system jsd60		jsd60.sys.mu	sd60.sys.mute\t1\r 192.168		242	∎) JSD-60	
AUDIO_UNI/UTE		Unmute the audio sys	tem	jsd60.sys.mu	ute\t0\r	192.168.1.	242	ျာ) JSD-60	
AUDIO_LOV		Adjust volume level to	low	jsd60.sys.fac	der\t300\r	192.168.1.	242	∎) JSD-60	
AUDIO_MID		Adjust volume level to	medium	jsd60.sys.fac	der\t500\r	192.168.1.	242	🌗 JSD-60	
AUDIO_HIGH		Adjust volume level to	high	jsd60.sys.fac	der\t700\r	192.168.1.	242	∎) JSD-60	
AUDIO_COA)		Set the COAX as Inpu	t	jsd60.sys.inp	out_mode\t0\r	192.168.1.	242	🌒 ) JSD-60	

Figure 11-10. Automation System Settings

To add a command to the automation library, set the toggle button to **User Defined** and use the **T** Add icon. Fill in the required red fields and choose a relevant category for the command before saving. You may test that command sends properly by using the **Fire** button.

Add Ethernet Automation							
Action:							
Description:							
Command:							
Automation Type:	Automation	Lighting	Audio	Projector			
. <b>.</b>							
IP Address:		Port:					
	Input field or cor	rection required					

Figure 11-11. Custom Automations

# Audio Settings

#### Audio System Type

The spinner should be set to the cinema audio processor being used. When the audio system type is changed, the Predefined audio automation commands in the system will change to match the new device.

#### Audio System IP Address

Enter the IP address for the cinema audio processor, which will be used to send Ethernet automation commands to the cinema audio processor. The **save button** must be used to store the new setting.

#### Audio Delay

The audio delay is used to synchronize the audio and video from the CMS-2200. The slider may be used to set a +/- 200 ms offset in the audio. The **save button** must be used to store the new setting.

#### Audio Sampling Mode

The sampling mode can be set to 96 KHz or 48 KHz sampling. When set to 48K, the CMS-2200 will down sample all audio to 48 KHz sampling. When set to 96 KHz, the CMS-2200 will play audio in either 48 KHz, or 96 KHz sampling as provided by the DCP.

#### Channel Routing

The CMS-2200 can be configured to support custom audio routing of DCP's with SMPTE audio formatting. If the DCP is not packaged as SMPTE audio, interop channel assignments will be the default output.

## MDA Audio Rendering

A DCP containing the MDA immersive audio format can be pre-rendered for specific auditoriums during the ingest process. To enable ensure the **Render MDA Audio** switch is set to **ON**. Next, use the **Browse** button to load the VBAP theater configuration file that specifies your auditoriums dimensions. If you are unsure if content has MDA audio formatting check its properties in the Content tab.

**Note**: To apply any setting change, press the Save icon at the lower right of the window.

# 12.0 Web Interface

The USL Web interface is a browser-based tool that utilizes Python scripts to automate numerous tasks for the CMS-2200. To use the USL CMS-2200 Web interface open a web browser to the following address.

http://ip\_address\_of\_the\_projector:43758

## For example:

#### http://192.168.254.246:43758

or

### http://192.168.254.246:43758/cgi-bin/pycgi.py

Here is a list of actions that can be accomplished via the CGI interface.

- Configure CMS
- Export automation database
- Export configuration files
- Get playback status
- Import configuration files
- Import settings package
- Revert automation to factory settings
- Set IMB projector IP and type
- Start playback

- Download SMS software update
- Export playlist
- Generate log package
- Import automation database
- Import playlist
- Reboot CMS-2200
- Revert configuration to factory settings
- Show last update log
- Stop playback

Firefox <b>*</b>	an find		
USL CMS-2200 CGI Interface	+		
♦ 3 192.168.254.246:43758/cgi-bin/	русді.ру	☆ マ C 🛛 🗧 - Go	ngle 🔎 🖸 🕇 🏠
Most Visited 🗍 Getting Started 💈 Goo	gle 🗍 Suggested Sites 😿 USL Engineerin	g Wiki 🗌 Web Slice Gallery 🗍 USL CM	S-2200 CGI Int
			00 054 040
USL, INC. USL C	MS-2200 CGI I	nterface - 192.1	68.254.246
Precision Sound + Light + Color	USL. Inc. Home F	Page CMS WSDL	
		-9-	
	Action: Update	CMS -	
	Username:	Password:	
	Location: Download - File:	Browse_ No file selected.	
	Send	Command	
	Please sel	ect an action.	

#### Figure 12-1. Web Interface

# Update CMS

**Update CMS**, shown in Figure 11-2 is used to load a software update to the device. The **Username** and **Password** fields verify user access level credentials. The update location may be the USB port on the front of the CMS-2200 or a local file (**Download**). The **Browse** button is be used to navigate to the code package file. The **Send Command** button will send the command to the CMS-2200 and initiate the update process. Figure 12-3 shows the results of an update CMS command, which provides details as each process completes.

The CMS-2200 update will include updates to the Web interface and updates to the SMS software stored on the CMS-2200. After any CMS-2200 update, the **Download SMS** command should be used at all SMS locations to download the matching SMS client.

USL, Inc. Home Page CMS WSDL							
	Action: Update	CMS -					
	Username:	Password:					
	Location: Download - File	Browse_ No file selected.					
	Send	Command					
	Please sel	ect an action.					

Figure 12-2. Update CMS



Figure 12-3. Update CMS Results

Figure 12-4 illustrates the **Set IMB Projector IP and Type** function. This sets the **Projector Type** (Barco, NEC, or Christie) and **IP address** on the CMS-2200. This function is important in configuring the CMS-2200 to communicate with the projector and the auditorium networks.

USL CMS-2200 CGI Interface - 192.168.254.246							
USL, INC. HOME Page CMS WSDL							
Action: Set IMB Projector IP and Type -							
Username: manager Password: ••••••							
Projector IP: 192.168.254.246 Projector Type: Barco -							
Send Command							
IMB IP address has been set to 192.168.254.246.							
CMS communication: success							

Figure 12-4. Set Projector IP Address and Type

# Generate Log Package

The **Generate Log Package** function is used to extract the logs from the CMS-2200. This process can take several minutes to complete.

**Caution:** Do NOT generate log packages while playing content. The process could interfere with the playback and possibly interrupt the show.

USL, inc.	USL CMS-2200 CGI Interface - 192.168.254.246
	USL, Inc. Home Page CMS WSDL
	Action: Generate Log Package
	Location: Download -
	Send Command
	Executing Generate Log Package. Please wait. This may take several minutes.
	Upening Ust_Logs_testAter_20131218_012118r/gz
	USL_Logs_TESTREY_20131218_0121.tar.gz which is: WimRAR archive from: http://102.168.254.246.43758
	What should Firefox do with this file?
	Qpen with  WinRAR (default)
	Save File  Do this automatically for files like this from now on.
	OK Cancel

Figure 12-5. Generate Log Package

# Edit System Configuration

An important use of Web Interface is to easily edit some of the CMS-2200's backend settings. To make changes to these settings, choose Edit System Configuration from the dropdown menu and enter valid login credentials. Many of these settings are also accessible from SMS software.

## Network Configuration

This menu allows edits to be made to the IP address assignments for the Projector, Aux Port (Automation Network), and Data B Port (Media Network).

Network Configuration   System Settings   3D Configuration					
Projector Configuration					
Projector IP: 192.168.7.32	Projector IP: 192.168.7.32 Projector Type: Barco +				
AUX Port (	Configuration				
Enable AUX Port Yes ÷	IP Address: 192.168.6.54				
	Subnet Mask: 255.255.255.0				
	Gateway: 192.168.7.1				
DATA B Por	t Configuration				
Enable Data B Port No ÷	IP Address: 130.1.2.2				
	Subnet Mask: 255.255.0.0				
	Gateway: 130.1.2.1				
Allow FTP Read Disabled \$	Allow FTP Write Disabled ÷				
Update System Configuration					

Figure 12-6. Network Configuration

#### **Projector Configuration**

The Projector IP should match the location of the projector on the network.

#### AUX Port Configuration

The AUX port allows an alternate route for automation commands to reach the projector. The IP assignments can be manually set in this menu.

#### Data B Port Configuration

The Data B Port is used for many of the content transfer features of the Media Network described in Section 11 – Server Settings. To enable content transfers between CMS-2200s, manager computers, and NAS servers **Enable** the Data B Port and FTP Read/Write. The recommended IP schemes are located on the Tables in Section 3.

Note: Any setting updates in the Web interface will require a reboot of CMS-2200 to be applied.

### System Settings

This menu contains many of the settings described in the System Settings tab of the SMS software. For more information on a specific setting see the matching category of Section 11.

Network Configuration   System Settings   3D Configuration								
Server Settings								
Screen Name USL Conf. Rm. Right (								
Auxilliary Content Server	Enabled +							
CineCanvas	Enabled \$							
Bypass Ingest Verification	Yes ‡							
Downsample 4K content to 2K	No ‡							
Audio Settings								
Audio Processor Type	USL JSD100 +							
Processor IP Address	192.168.7.27							
Audio Delay	22 <b>MS</b>							
Downsample 96KHz to 48KHz	No ‡							
Render Object Sound	No ‡							
Automation S	ettings							
Automation IP Address Listen for GPI start/stop								
NAS Server S	ettings							
NAS Server Connection	Enabled ‡							
NAS Server Address	192.168.6.141 Port 21							
Backup NAS Address								
Username anonymous	Password							
Monitoring I	Device							
Monitoring	Enabled \$							
Device Type	LSS-100 \$							
Monitor Device Address 192.	168.6.55							
Network Mon	itoring							
SNMP	Disabled 💠							
SMTP Email Address								
SMTP Server Address								
Update System Configuration								

Figure 12-7. System Settings

Note: Any setting updates in the Web interface will require a reboot of CMS-2200 to be applied.

Note: Some options in this menu may still be in development

## **3D** Configuration

It is recommended to use the default 3D settings for your 3D system, but if changes are needed visit the 3D Configuration Menu of the Web Interface. Default settings may be restored at any time by using the **Restore Defaults** button.

Network Configuration   System Settings   <u>3D Configuration</u>								
3D System Type Dolby :								
Dolby 3D Configuration								
3D Dolby color wizard Restore Defaults								
Color Correction								
Lei Red	Blue		Rie Red	ght Eye Green	Blue			
Red 1.018329	-0.02276	0.004433	Red	0.962682	0.05352	1 -0.0162		
Green 0.055687	0.880205	0.015425	Green	-0.02106	0.94994	7 -0.00781		
-0.00437	0.027756	0.957544	Blue	-0.00099	-0.0432	0.907319		
	Cr	osstalk	Cancelati	on				
Lei Bod Gi	ft Eye Roop Blue			Rig Bod (	ght Eye	<b>R</b> hue		
-0.01 -0	0.01 -0.01			-0.01	-0.01 -	0.01		
	RealD	3D C	onfigu	iration	<u>)</u>			
Please	set the Dolb	y Cross	alk coeff	icients to	"0.02"			
RealD	3D wizard	SL 41		Resto	re Defau	lts		
		anostous	sting Coe	micients	_			
2330 2330	2330	2330	2330	2330	2330	2330		
2330 2330	2330	2330	2330	2330	2330	2330		
2330 2330	2330	2330	2330	2330	2330	2330		
2045 2045	2045	2045	2045	2045	2045	2045		
2045 2045	2045	2045	2045	2045	2045	2045		
2045 204	2045	2045	2045	2045	2045	2045		
2452 2452	2 2452	2452	2452	2452	2452	2452		
2452 2452	2 2452	2452	2452	2452	2452	2452		
2452 2452	452	2452	2452	2452	2452	2452		
2452 2452	2452	2452	2452	2452	2452	2492		
		Update 3D (	Configuration	n				

Figure 12-8. 3D Configuration

Dolby 3D Configuration

If Color Correction or Crosstalk Cancelation tweaks need to be made manually enter desired values or follow the 3D Dolby Color Wizard.

RealD 3D Configuration Enter RGB Ghostbusting Coefficients manually or follow the RealD 3D Wizard.

Note: Any setting updates in the Web interface will require a reboot of CMS-2200 to be applied.

# 13.0 Long Term Maintenance

# Care and Maintenance

To meet DCI and FIPS requirements, the CMS-2200 is manufactured with a 3.0V Lithium Ion battery. The battery is designed to have a full 10 years of life from the date of manufacturer. When unused, the battery is designed to have a one year shelf life from the date of manufacture.

USL recommends the EP-100 supply be used to keep CMS-2200 units powered if they are kept unused for long periods of time. The EP-100 supply will keep the CMS-2200 powered and in reset mode, to provide maximum battery life to the product. When the CMS-2200 is powered it will have a 10 year battery shelf life.

**Note**: The highest battery drain occurs when a CMS-2200 is first powered and then subsequently removed and stored for a long period of time. In this state the battery is holding up the marriage tamper alarm, which is the maximum battery drain on the battery. The EP-100 supply eliminates this battery drain by powering the CMS-2200.

# Replacing the Battery

The battery status can be checked in the security status section of the **Media Block** tab in **System Settings**. The SMS software will issue an alert when the battery needs to be replaced. The battery is designed for a full 10 year life of the product, but it is field swappable if necessary.

**Warning:** It is important that this procedure be completed carefully and according to the procedure, as the battery is responsible for maintaining the secure keys for the CMS-2200. If the procedure is not followed correctly, the keys will be lost and the CMS-2200 will be unusable and must be returned to USL.

**Caution:** Risk of Explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the instructions and local law. Replace only with the same or equivalent type.

There is an online video demonstration for replacing the battery on a CMS-2200. USL recommends watching this video to become familiar with the process before attempting a battery replacement.

- Parts and Tools required for the procedure include: The replacement battery (CR2477) An interim battery (CR2032) Loctite
   Phillips screw driver
- Remove six screws holding the top board in place
  Do not lose the lock washers that go with the screws.
- Remove ISS upper board by lifting gently near the PCI interface connector at the rear of the unit. Note that the keyed card between the cards must be inserted correctly, or it will damage the boards.
- Locate the battery and remove rubber retaining lid from existing battery.
  Do not remove the battery yet
- Install the interim battery (CR2032) into the interim slot on the board.
  Allow approximately 30 seconds for the voltages to equalize before proceeding.
- □ Remove the old CR2477 battery by lifting it up.
- □ Replace with the new CR247 battery ensuring that it is fully seated in the holder Again allow approximately 30 seconds for the voltages to equalize before proceeding
- □ Remove the interim battery by gently pulling the retaining clip out of the way and lifting the battery out.
- □ Replace the rubber retaining lid on the new battery
- Re-install the upper ISS-1200 board; ensure the keyed riser is properly installed.
  Note the front of the card is mated with the front panel first and then the rear of the card is pressed down into place.
- □ Replace the six screws holding the two boards together, paying attention to use the lock washers for each screw.
- □ The CMS-2200 is ready for replacement into the projector.

Check the **Media Block** settings, under **Settings** in the **System Tab** to check the battery status. If the procedure was completed properly the battery will report **OK**.

# Replacing a Solid State Drive

Solid state drives were chosen for the CMS-2200 specifically because of their long term reliability. It is expected that over a 10 year product life that no solid state drives will fail, however the drives are field swappable in the unlikely event that a drive needs to be replaced. An online video demonstrating drive replacement can be found on the CMS-2200 product page on the company web site.

The SMS software will indicate a failed drive for a CMS-2200 on the system screen. It is important to replace the correct failed drive to maintain the integrity of the raid storage. It is also critical that the replacement drive from USL matches the firmware and specifications of the existing solid state drives. USL maintains a record of all drives shipped with its CMS-2200 products.

- The parts and tools required for this procedure.
  A replacement solid state drive from USL.
  A tamper seal (included with the replacement drive)
  Anti-static protection.
- □ Remove the two retaining screws on each side of the solid state drive.
- □ Break the tamper seal holding the drive in place.
- Gently remove the hard drive by sliding it out to the side of the CMS-2200.
- □ Slide in the new hard drive and press if firmly into the connector.
- □ Replace the two retaining screws.
- □ Install the tamper seal provided with the replacement hard drive.

The CMS-2200 can now be reinstalled in the projector. The new drive will automatically be integrated into the raid array. This process can take several hours to complete. USL recommends leaving the system turned on for two hours to ensure the process is complete and the drive is fully integrated into the raid system. The system may be turned off at any time before completion, it will simply take longer for the raid integration process to complete. The CMS-2200 is fully functional and ready to ingest content and stream movies while the raid integration is proceeding. The process will run entirely and transparently in the background.

# Diagnostics

There are a wide variety of things that can go wrong when installing and using the CMS-2200 system. USL has provided a number of built in diagnostic tools that can be used to help identify the issue and determine what the required actions are.

In general problems fall into two categories, those related to install and configuration, and those that occur during normal operations. In both cases USL's customer service is available to assist with whatever problems occur. It is important to always have the serial number of the CMS-2200 unit when contacting USL so the product history can be looked up to help resolve the problem.

#### First Steps

The first step for many problems are to make sure all the cables are properly connected and that all the equipment, projector, CMS-2200, cinema audio processor, automation equipment, amplifiers, network routers, etc. are powered on.

Next, be sure there are no network issues and that the SMS software can communicate correctly with the processor. It is also valuable to check the GUI interfaces for the projector and audio processors to be sure that equipment is configured correctly and operating as expected.

## Front Panel LEDs

Status Light on the CMS-2200. Normally the **Power LED** will be **ON** indicating power is available and the **Ready LED** will be **ON** indicating the processor is up and functioning properly. It is normal to have **Status** and **Sync LEDs OFF**.

The internal solid state drive LEDs (**Drives 1-4**) should **flash** when in playback or content ingest. It is normal for these LEDs to be **off** during other times.

## SMS Software Tools

The SMS software has a number of diagnostic displays that should be checked. Simply connecting from the SMS to a CMS-2200 is an indication that the CMS-2200 is on the network and communicating properly with the SMS software.

Be sure to check the SMS software version located in the show manager settings on the **Theater Overview** page. If necessary the Web interface can be used to download current SMS software from the CMS-2200. It is important that the software on the CMS-2200 match each other.

#### Alert Messages.

The SMS Player screen will display the current player state, which is usually stopped or playing. It will show **Error** when there are problems with the keys, or content or playlists. Check the **alert messages**, located in the **status bar** for a list of current warning or errors along with the **time**, **IP address**, and **screen name** associated with the event. **Green dots** indicate information, **yellow dots** indicate warnings and **red dots** indicate errors.

#### System Status

The system status can be checked in the **system tab**. There are a number of statistics listed on this display. Normally the statics should be zero, except the top two items. The first **(del)** is the number of frames delivered and the second **(req)** is the number of frames requested. These two numbers should match and will reflect the current number of frames that have been streamed for the current playback.

#### System Logs

Along the bottom of the system status page is a scrolling list of system logs. The list is a 255 entry buffer from the CMS-2200. This display provides a convenient window into the CMS-2200 system logs to see what is happening at any given time.

#### Disk Space and Current Raid Status

For drive space and storage issues, the RAID status will list the status for the drives and provide the tools to resynchronize the RAID as necessary.

#### The Web interface

The primary diagnostic tool in the Web interface is the log package generator. The Generate Log package command is used to download the log file to the browser for storage, or to a USB drive attached to the CMS-2200. This command can take 5 minutes or more to complete, so patience is required. The log file can be saved and sent to USL. The logs are the most detailed source of diagnostic information that can be used to resolve almost any difficulty.

Another Web interface command commonly used is Reboot CMS-2200. This command will reboot the CMS-2200. This command has the advantage of resetting the CMS-2200 without needing to power-cycle the projector. Thus it avoids the lamp cool-down time associated with projector power cycles.

## The USL website

The USL website can be very helpful in resolving issues. Check the website for CMS-2200 and SMS FAQs, to see if the problem has been reported and a solution is available.

Installation and configuration issues can often be resolved by watching the training videos that USL provides on various CMS-2200 subjects.

A trouble ticket may be completed online, which USL's customer service team will investigate and provide a response to.

If the problem is still not resolved, call USL customer support directly at +1 (805) 549-0161.

# 14.0 Product Support

USL proudly stands behind its products. We are ready to answer questions about the installation or operation of the CMS-2200. The manual, application notes and other documents are available on our website. You may contact USL by:

Phone: +1 (805) 549-0161 Email: <u>support@uslinc.com</u> File a support ticket electronically at: www.uslinc.com/support

Please check the USL website for the latest software packages and updates for the CMS-2200 product. <u>www.uslinc.com</u>

USL is interested in your comments. Please feel free to contact us with any comments or suggestions.

# Support for tampered boards

**Caution:** Per DCI and FIPS specifications this product contains integrated tamer security features. In the event that it is tampered with, the product will render itself inoperable. Tamper events are not recoverable in the field and the product must be returned to the factory to be repaired.

Tampering includes, but is not limited to, removing screws, tampering with the heat sink, removing the battery, or modifying the electronics in any way.

A good indication that a board has been tampered with includes a tamper alarm in the **Systems Settings** tab, or a board that will not marry to a projector.

Should a tamper event occur, notify USL customer service.

# Support for advanced replacements

**Warning:** Each CMS-2200 unit is uniquely keyed per DCI and FIPS specifications to provide the required security features. Should hardware be changed in the field, the replacement will by necessity have a new and unique serial number. It is not possible to obtain a replacement CMS-2200 with the same serial number as a unit already in the field.

USL, INC. warrants that each product manufactured by it will be free from defects in material and workmanship under normal usage over a period of one (1) year after its purchase new from and authorized dealer. Our obligation under this warranty is limited to repairing or replacing any product or component which we are satisfied does not conform with the foregoing warrantee and which is returned to our factory freight paid, or serviced by one of our authorized contractors. The forgoing warranty is exclusive and in lieu of all other warranties, whether expressed or implied. Such warranty shall not apply to any product or component (A) repaired or altered by anyone other than USL, Inc. or an authorized service contractor; (B) tampered with or altered in any way or subjected to misuse, negligence or accident or (C) which has been improperly connected, installed or adjusted other than in accordance with USL, Inc.'s instruction.

