



MediaDSTM

MDS1

Instructions

NDITM

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TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION AND SETUP	3
Section 1.1 Overview	3
Section 1.2 Setting Up.....	4
1.2.1 Command and Control	4
1.2.2 Input Connections	4
Section 1.3 Registration.....	5
Section 1.4 Networking.....	5
Section 1.5 Getting Started.....	5
CHAPTER 2 USER INTERFACE	9
Section 2.1 Desktop Overview	9
Section 2.2 Channel Configuration	10
2.2.1 Input Tab	10
2.2.2 Color Tab	13
Section 2.3 Streaming Options	14
2.3.1 Connection Menu	15
2.3.2 Streaming Profile	16
Section 2.4 Viewing Options.....	16
Section 2.5 Titlebar & Dashboard Tools	16
2.5.1 System Configuration	17
Section 2.6 Dashboard Features	18
2.6.1 Audio (Headphones).....	18
2.6.2 Stream All	19
2.6.3 Display (Monitoring).....	19
CHAPTER 3 SERVING WEBPAGES	21
Section 3.1 Default Web Pages.....	21
Section 3.2 Custom Web pages	22
APPENDIX A: NDI (NETWORK DEVICE INTERFACE).....	25

APPENDIX B: DIMENSIONS AND MOUNTING 25

APPENDIX C: ENHANCED SUPPORT (PROTEK) 26

APPENDIX D: RELIABILITY TESTING 26

CREDITS 27

Chapter 1 INTRODUCTION AND SETUP



This chapter explains how to connect power, monitors and audio visual sources, and external control devices to your MediaDS™ system. It also reviews the registration process. After completing this short section, you'll be all set to begin using MediaDS.

SECTION 1.1 OVERVIEW

Thank you for purchasing this product. NewTek™ is justifiably proud of its lengthy record of innovation and commitment to excellence in design, manufacture, and product support in the field of live video production.

NewTek solutions have repeatedly redefined production workflows, providing new creative possibilities and superb value. In particular, NewTek has led the field in introducing integrated production systems. Likewise, Wowza™ is widely acknowledged as providing many of the most advanced streaming tools and services in the world. It requires no exaggeration to state that NewTek and Wowza technologies comprise the very best of audio and video ingest, processing and streaming features.



These traditions are embodied in MediaDS™, a revolutionary real-time media encoding and live streaming video delivery platform—the first integrated production system establishing a direct link between the producers who create the content and the viewers that consume it. Merging NewTek's industry-leading live production technology with powerful Wowza streaming software, MediaDS democratizes video encoding and streaming for producers of live and linear programming, introducing myriad new opportunities for distribution, expansion, and content monetization.

Too, MediaDS fully supports NewTek's innovative NDI™ (Network Device Interface) protocol, placing your new system squarely in the forefront of IP technology solutions for video broadcast.



Each of MediaDS's four streaming channels includes its own independently customizable web page for network audience viewing, and allows HTML and CSS editing to ensure that the on-screen experience adheres to your organization's brand guidelines. Embed codes are also available to insert the hosted media player into existing webpages to complement your current web presence.

SECTION 1.2 SETTING UP

1.2.1 COMMAND AND CONTROL

Hint: The MediaDS interface requires a monitor resolution setting of at least 1280x1024.

1. Connect an external computer monitor to either the DVI or HDMI port on the backplate (see 1.2.2).
2. Connect *mouse* and *keyboard* to backplate USB ports.
3. Connect the *power cord* to the MediaDS backplate.
4. Turn on the computer monitor.
5. Press the *Power* switch on MediaDS's faceplate (located behind the drop-down door).

At this point, the blue *Power LED* will illuminate, as the device boots up. (If this does not happen, check your connections and retry).

Though not a requirement, we do strongly recommend that you connect MediaDS using an uninterruptable power supply (UPS), as for any 'mission critical' system.

Likewise, consider A/C "power conditioning", especially in situations where local power is unreliable or 'noisy'. Surge protection is especially important in some locales. Power conditioners can reduce wear on MediaDS's power supply and other electronics, and provide a further measure of protection from surges, spikes, lightning and high voltage.

A word about UPS devices:

'Modified sine wave' UPS devices are popular due to low manufacturing costs. However, such units should generally be viewed as being of low quality and possibly inadequate to fully protect the system from abnormal power events.

For a modest added cost, consider a "pure sine wave" UPS. These units can be relied on to supply very clean power, eliminating potential problems,

1.2.2 INPUT CONNECTIONS

External audio and video sources are connected to the appropriate inputs on MDS1's backplate.

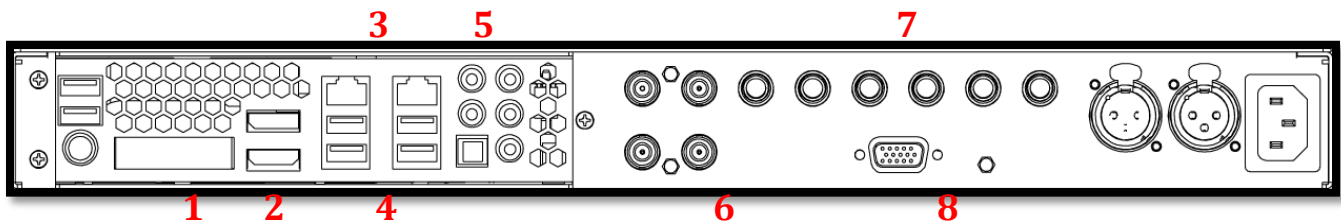


FIGURE 1-1

1. DVI – monitor port
2. HDMI – monitor port
3. Ethernet – network connection
4. USB – connect keyboard, mouse and other peripheral devices.
5. Motherboard audio connectors
6. Video In (SDI)
7. Audio In – 6x 1/4" jacks in pairs, inputs 2-4 (input 1, at right, uses balanced line level XLR connectors)
8. Unused
9. Power

SECTION 1.3 REGISTRATION

On first launch, you will be asked to accept end user license agreements for MediaDS software components from both NewTek and Wowza, and to supply relevant registration information.

SECTION 1.4 NETWORKING

Generally, simply connecting a suitable cable from an Ethernet port on MediaDS's backplate to your local network is all that is required to add it to a *local area network* (LAN). In some settings, additional steps may be required. You can access the system *Network and Sharing* control panel to accomplish more extensive configuration tasks. If further help connecting is required, please consult your system administrator.

SECTION 1.5 GETTING STARTED

Video streaming, whether for local consumption on a corporate or institutional intranet or for global distribution on the internet, is remarkably easy.

1. The first thing you should do is configure MediaDS to the correct *Video Standard* the type of video sources you might typically connect in your part of the world.).

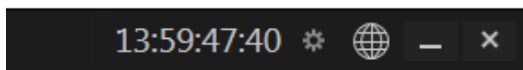


FIGURE 1-2

To do so, click the configuration gear beside the clock in the *titlebar* of the MediaDS *Desktop* (Figure 1-2). This will open the *System Configuration* dialog shown in Figure 1-3.

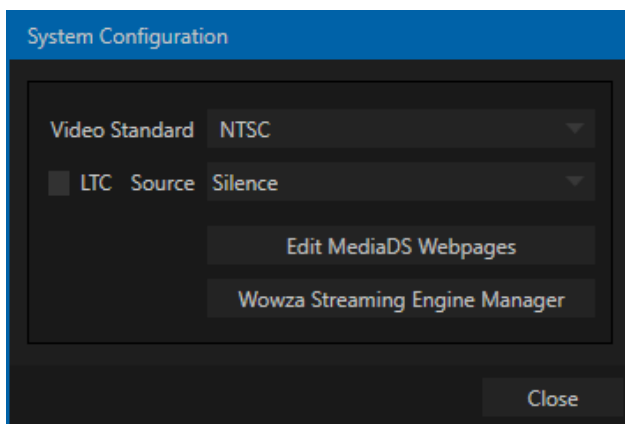


FIGURE 1-3

Having chosen either *PAL* or *NTSC*, close the *System Configuration* dialog.

2. Next, you need to decide which *Connections* (streaming targets) you want to send MediaDS output to. For example, you may wish to send your video stream to an external CDN (Content Deliver Network) such as Wowza Streaming Cloud™ or YouTube Live™ for distribution to the world over the internet.

Hint: If you only intend to stream a channel for viewing on your local network, you can skip this step, since the only connection you need to enable is “Wowza Streaming Engine”, which requires no configuration.

If you already have an account with the desired CDN, you simply need to enter your account credentials for the Connection. To do so, open the *Connection* menu located beside the *STREAM* button below the MediaDS *Desktop* viewport for a channel, move your mouse over the entry, and click the gear that appears at right (Figure 1-4).

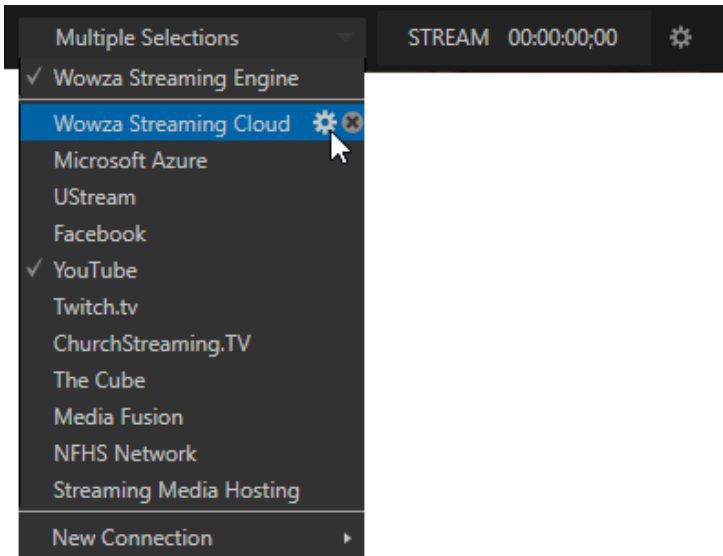


FIGURE 1-4

This opens the *Configuration* dialog for the corresponding Connection, as shown next.

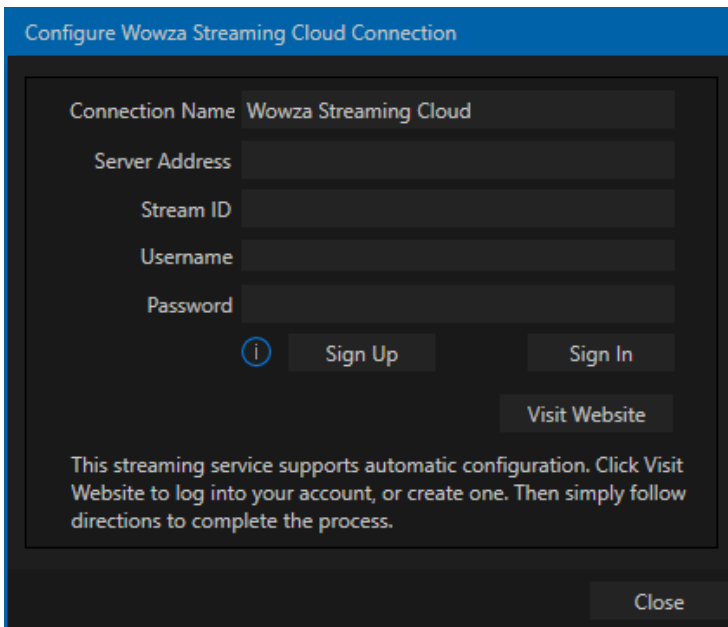


FIGURE 1-5

Continuing with the current example which uses Wowza, click the *Visit Website* button (Figure 1-5) and log onto the cloud. From here navigate to the *Video Source and Transcoder* tab (Figure 1-6) for this live stream.

Note: You will need to have a Stream profile setup to get to this set of tabs.

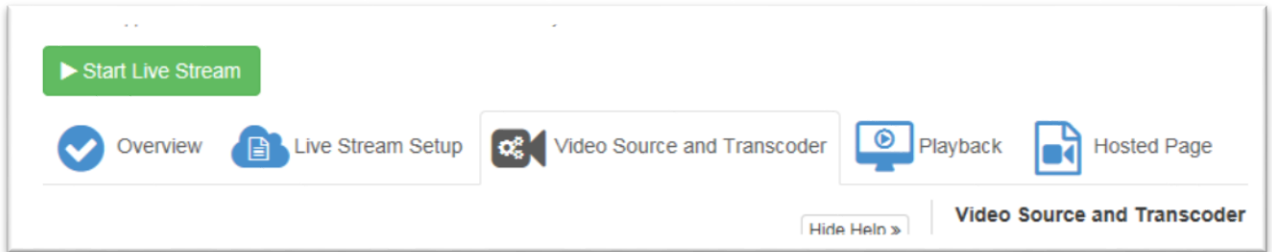


FIGURE 1-6

Click on the *download* button (Figure 1-7), you will be taken back to the Configure panel where the Username and Password fields will now be populated.

With other CDNs you may only need to enter the required account details (the details vary slightly from one CDN to another), and click *Close*. (Otherwise, if you don't yet have an account, the *Configuration* panel can help you open one.)

3. Having configured one or more *Connections*, checkmark the ones you wish to use in the *Connection* menu for the channel.

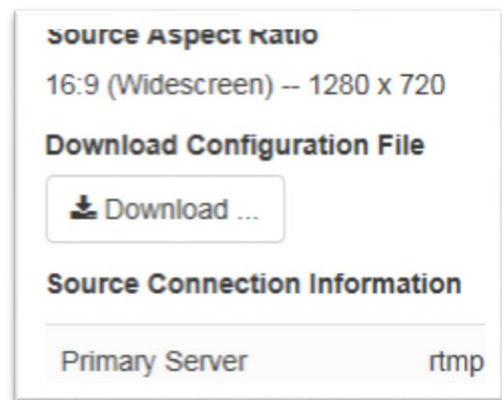


FIGURE 1-7

Note: Many CDNs are incapable of properly handling several different streaming channels assigned to one single Connection - even if the channels are set to the same source. Generally, they will accept the first stream and reject the second.

4. There is one more setting to consider, and that is the *Streaming Profile* - specifically, what are the resolution, framerate and bitrate settings you want your outgoing stream for this channel to use?

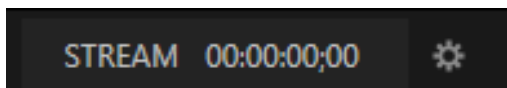


FIGURE 1-8

Click the configuration gear located to the right of the streaming button to show a menu listing standard streaming profiles (Figure 1-9).

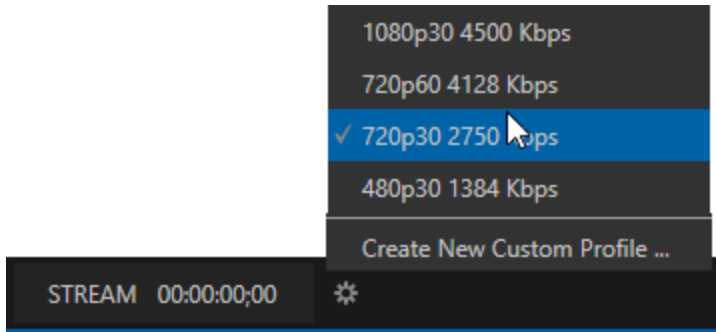


FIGURE 1-9

Hint: The default selection in this menu is a 'network-friendly' 720p profile. For the moment, you might use that to see if it suits your needs, but of course you can adjust this setting to taste in this menu, and even create custom profiles.

5. At this point, your MediaDS channel is ready to supply streaming output. If you have check-marked the *Wowza Streaming Engine* entry in the *Connection* menu, streaming output will be sent to your local network as soon as you press the *STREAM* button beneath the channel's viewport.

Note: Some external streaming services (CDNs) require you to start the target stream remotely using features on their site, before you begin streaming video to it from MediaDS. (Wowza Streaming cloud is one such service.)

Again, if you are streaming locally using the integrated Wowza Streaming Engine software, you can access the video on your local network immediately, even without an internet connection. The webpage addresses you will enter into the web browser of systems on your network to view the video stream are shown in MediaDS's *Web Page Editor* – see Chapter 3, *Serving Webpages*.

Chapter 2 USER INTERFACE



This chapter explains the layout and options of the user interface, and how to configure MediaDS™ audio and video input and output.

It also introduces the various supplemental video production features MediaDS provides, including Proc Amps, Scopes and capture.

SECTION 2.1 DESKTOP OVERVIEW

The MediaDS™ default *Desktop* interface shown below provides system and streaming channel configuration and control features, along with very useful remote monitoring features and options.

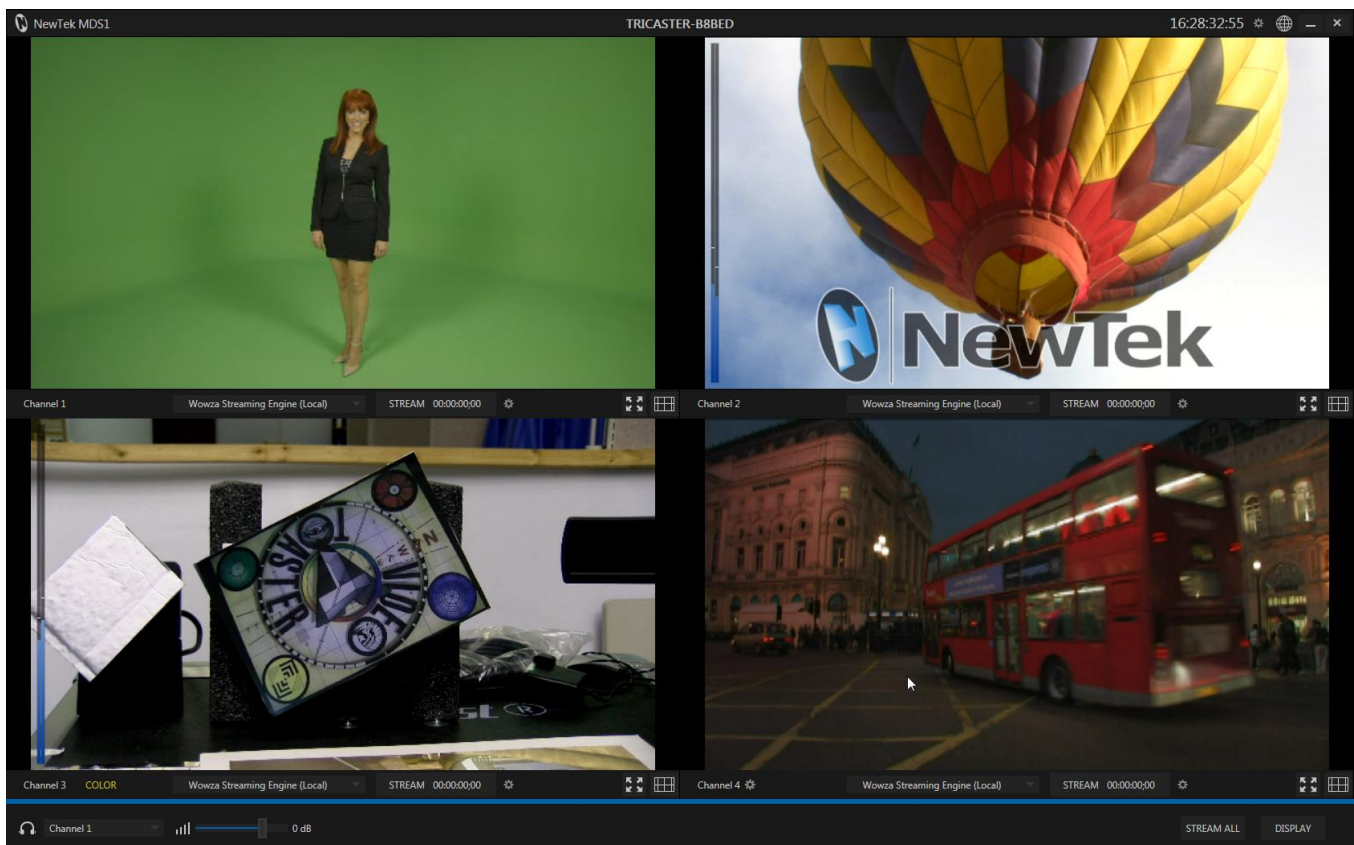
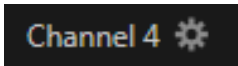


FIGURE 2-1

The *Desktop* interface includes *titlebar* and *dashboard* tools running across the top and the bottom of the screen.

By default, the *Desktop* is divided into quadrants, each representing one streaming ‘channel’. Beneath each channel’s viewport is a toolbar (Figure 2-1). Continue reading to get an overview on the features of the MediaDS *Desktop*.

SECTION 2.2 CHANNEL CONFIGURATION



MediaDS allows you to select from various audio and video sources for each of its four channels via the *Configure Channel* panel (Figure 2-3).

FIGURE 2-2

Clicking the gear next to the label below a channel's viewport (Figure 2-2) opens its *Configure* panel.

Hint: You can also double-click the viewport to quickly access the Configuration panel for a channel.

2.2.1 INPUT TAB

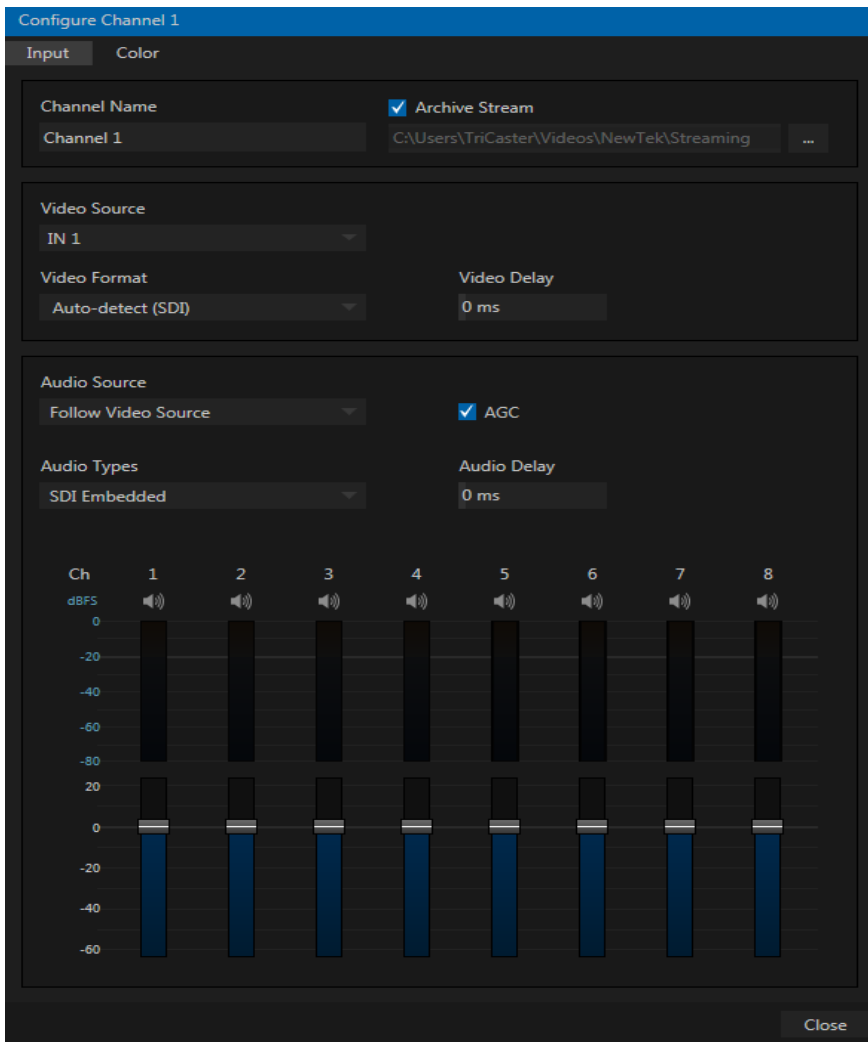


FIGURE 2-3

The tabbed *Input* pane in the channel *Configure* panel is where you assign audio and video sources to the channel, and configure their respective input formats as required. You can choose an SDI video source connected to one of the BNC inputs connectors on MediaDS's backplane, or an NDI (Network Device Interface) source, a PTZ camera with compatible network output, or even a webcam or input from a suitable external A/V capture device connected to the system (typically using a USB port).

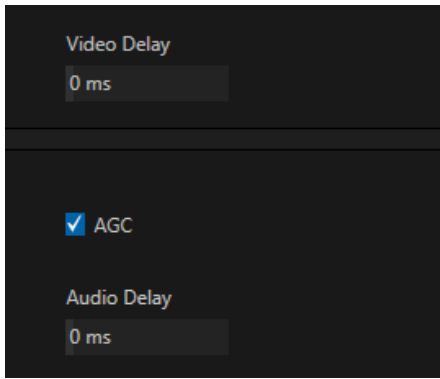


FIGURE 2-4

Delay settings are provided for both audio and video sources, allowing precise A/V synchronization where a/v source timing differs.

IP SOURCES

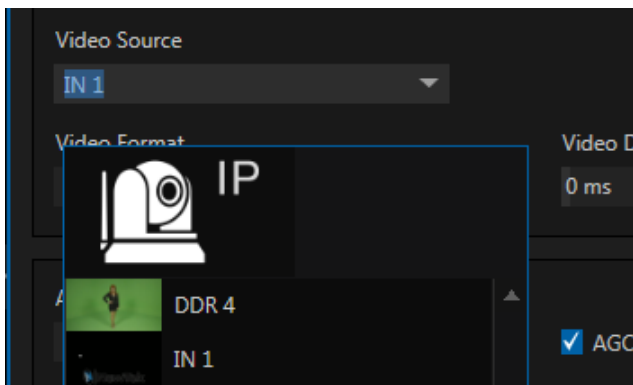


FIGURE 2-5

As mentioned earlier, an IP (network) source such as a PTZ camera with compatible network video output can be selected. The *Video Source* drop down menu contains an *IP icon* (Figure 2-5).

Clicking the *IP icon* opens the *IP Source Manager* (Figure 2-6).

Adding entries to the list of sources shown in this panel causes corresponding icons for new sources to appear in the *Local* group shown in the *Video Source* menu of the *Configure* panel.

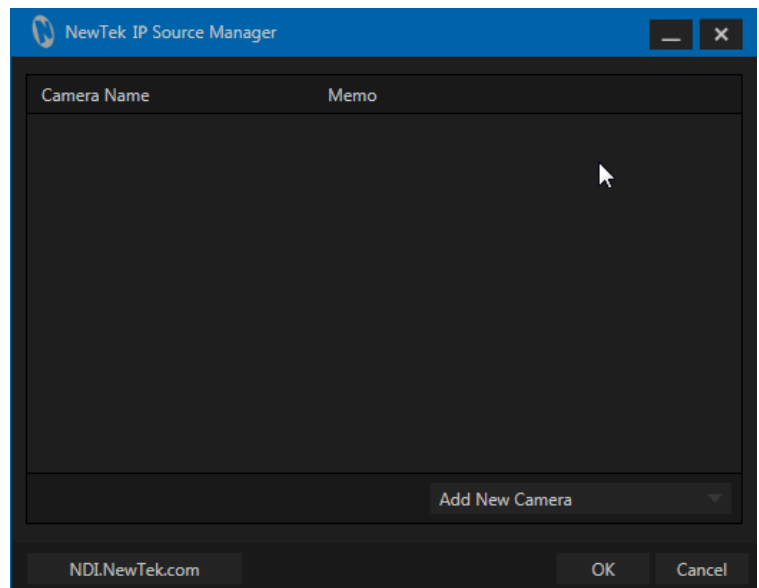


FIGURE 2-6

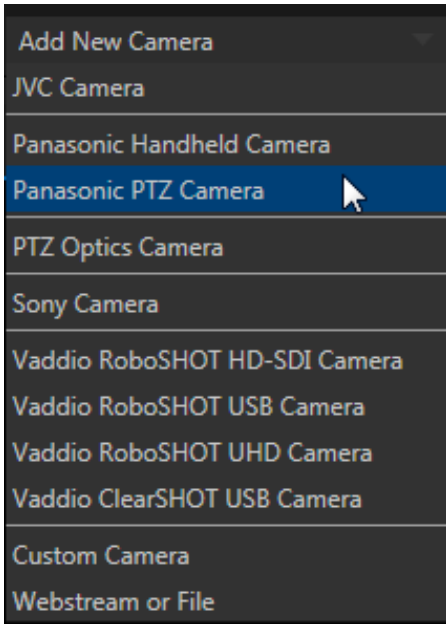


FIGURE 2-7

To begin. Click the *Add New Camera* menu, and select a source category from the list shown.

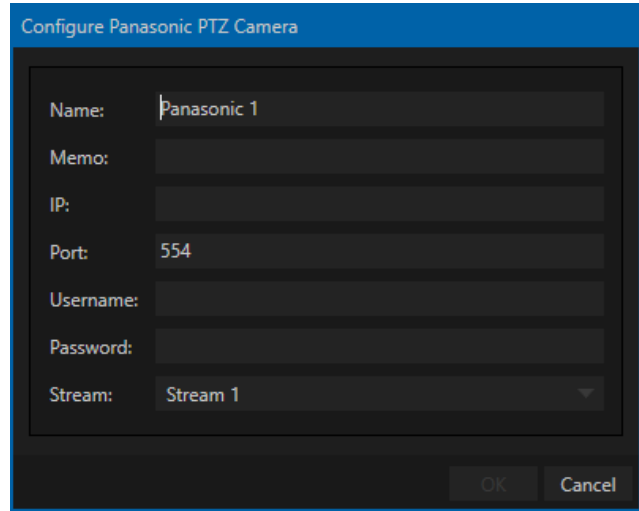


FIGURE 2-8

A dialog suited to the particular source device you wish to add will open (for example, a dialog appropriate for a supported PTZ camera brand and model).

Note: New IP sources are not shown in the Source menu until you exit and restart the software.

AUDIO

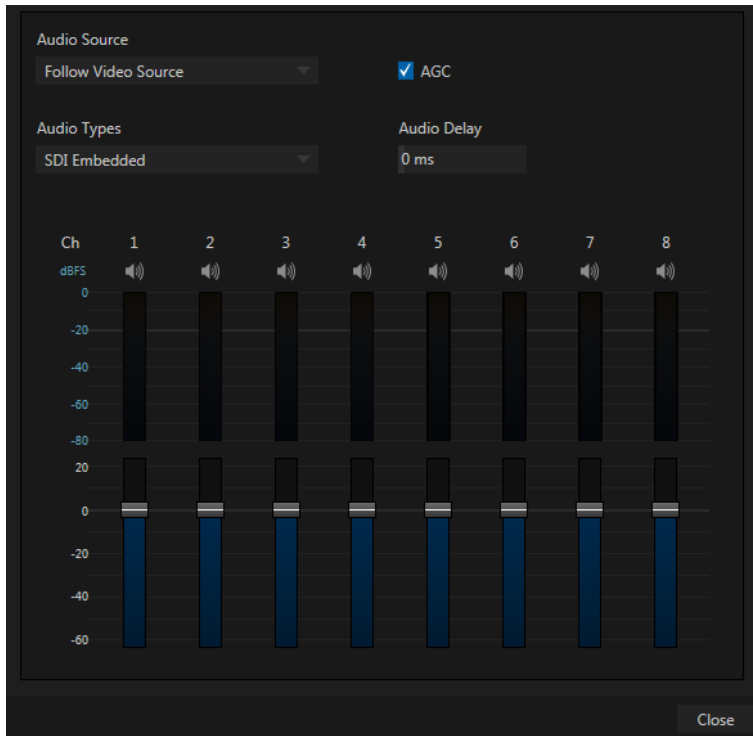


FIGURE 2-9

Audio for the channel is selected in similar fashion from all available sources using the *Audio Source* menu.

When the selected audio source is one of the hardware connections on the system's backplane (whether an SDI port, or analog BNC connector or phone jack), the *Audio Type* menu below governs whether the analog or SDI-embedded connector provides sound for the channel.

For many sources, the default *Auto-Detect* Type menu option will suffice.

Note: The Analog and SDI selection for a given Audio Source is applied for all channels set to that source. You cannot, for example, use SDI-embedded for IN 1 for one channel at the same time as using IN 1's analog inputs for a different channel.

The *AGC* switch enables automatic gain control for the audio source. Level control faders and *Mute* (speaker) gadgets for individual audio channels are provided, up to 8 channels for digital input types.

2.2.2 COLOR TAB

The *Color* tab in the *Configure* panel provides an extensive set of tools for adjusting the color characteristics of each video channel.

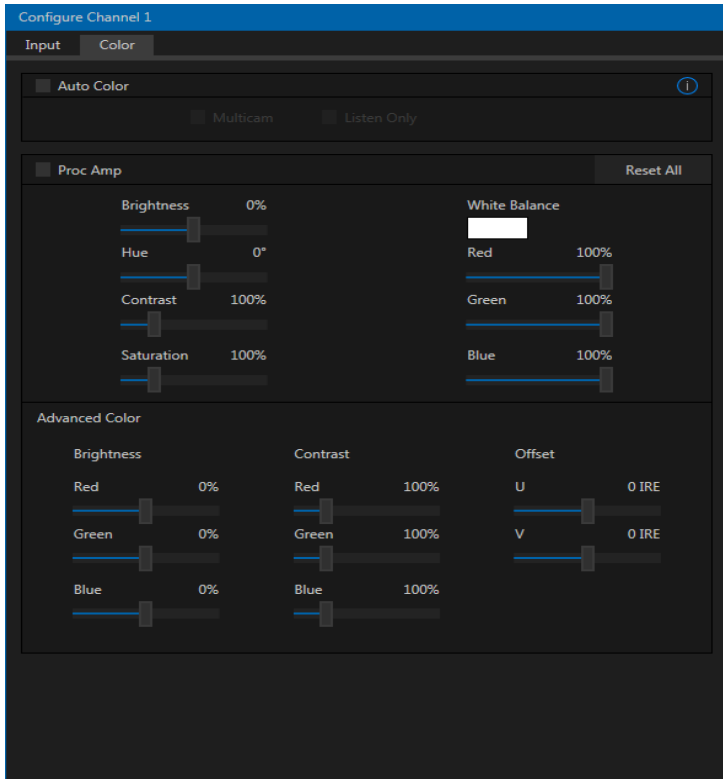


FIGURE 2-10

AUTO COLOR

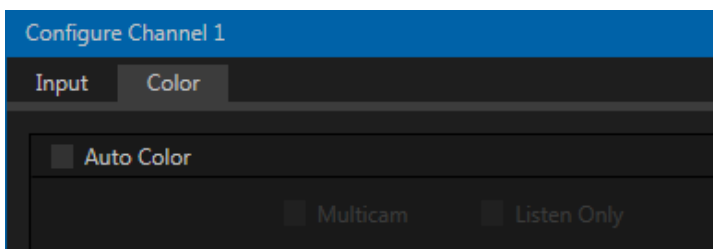


FIGURE 2-11

Choosing *Auto Color* automatically adapts color balance as lighting conditions change over time.

Note: Proc Amp adjustments follow Auto Color processing.

By default, each camera with *Auto Color* enabled is processed by itself. Enable *Multicam* to process multiple cameras as a group.

To apply *Multicam* processing to a source without its own colors being evaluated, checkmark *Listen Only*. Or enable *Listen only* for all *Multicam* group members except one to make that source the ‘master’ color reference.

Note: Custom settings in the Color tab trigger a COLOR notification message that appears in the footer below the viewport of the channel (Figure 2-12).

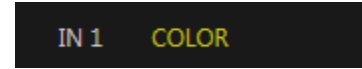


FIGURE 2-12

PROC AMP

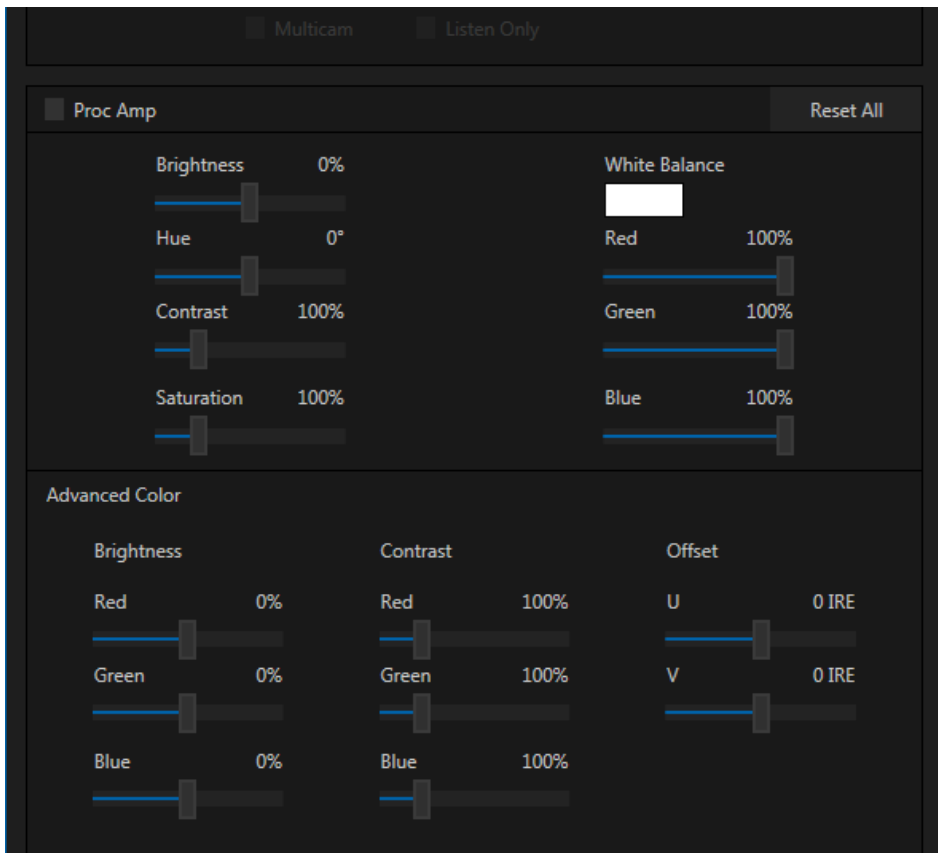


FIGURE 2-13

The *Color* tab’s full-featured *Proc Amp* (Figure 2-13) allows precision color balancing of the video stream (the *DISPLAY* options widget provides access to *Waveform* and *Vectorscope* tools to assist in this process).

SECTION 2.3 STREAMING OPTIONS

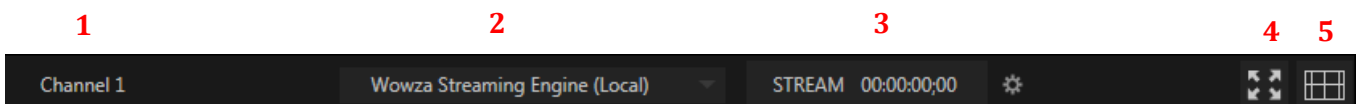


FIGURE 2-14

MDS1’s channels each have a toolbar beneath their respective viewports. The various elements comprising the toolbar are shown in Figure 2-14, and listed below from left to right:

1. *Channel name* – Can be changed by clicking on the label, and also in the *Configure Channel* panel.

2. A *Configuration* gadget (gear) pops up next to the channel name when the mouse is over a viewport.
 - a. *Connection menu* – Create presets (“Connections”) for streaming destinations and services, and select which *connections* to send the channel’s streaming output to.
3. *Stream* (and *Stream Time*) – This button toggles streaming for the associated channel.

Hint: A button labeled STREAM ALL in the lower dashboard toggles streaming for all channels.

- a. The *Configuration* gadget (gear) at right allows selection of a streaming profile and allows you to create custom streaming profiles.
4. *Fullscreen icon* (see the Fullscreen subheading later in this section).
5. *Overlays* (See the Overlay subheading later in this section).

2.3.1 CONNECTION MENU

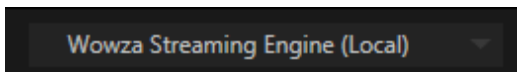


FIGURE 2-15

Select your streaming service(s) of choice in the dropdown list (Figure 2-16). Of course initially, many of these *Connections* (streaming service presets) need to be configured with your account details.

Roll your mouse pointer over an entry in the list and click the gear that is shown to open the corresponding *Configuration* dialog (you’ll also see an ‘x’ gadget nearby, which you can use to remove unused entries from the *Connection* menu). If you already have an account with the streaming service, simply enter your credentials. Otherwise, you will find tools to help you sign up for the service.

More options can be found at the bottom of this dropdown list under *New Connection*. You can make multiple selections in this menu if you wish.

NOTE: Service providers often have specific login requirements. You should have your account information handy or sign up for the service in advance.

Take particular notice of the first entry, *Wowza Streaming Engine*. Choosing this option delivers output from the channel to the integrated Wowza Streaming Engine application, which in turn delivers encoded video to the integrated webserver and local network without involving an outside CDN (Content Delivery network).

Note: The Wowza Streaming Engine entry is check marked by default, making local video streaming a simple matter requiring little more than a) supplying a video source to a channel, b) making sure it is correctly configured so as to appear on the channel’s viewport, and c) clicking the Stream button.

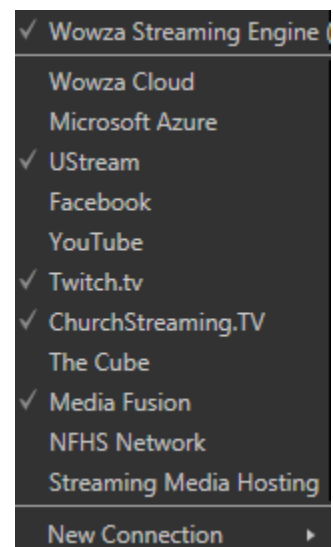


FIGURE 2-16

This option is perfect for streaming to local audiences, as for example in the case of a campus, corporate headquarters intranet, hospital, etc. Uniquely, this *Connection* requires no configuration, nor can it be removed from the list. Thus its *Connection menu* entry does not show either a gear or and x gadget when the mouse is over it.

Hint: A streaming service providers is often referred to as a “CDN”, short for “Content Delivery Network.”

2.3.2 STREAMING PROFILE

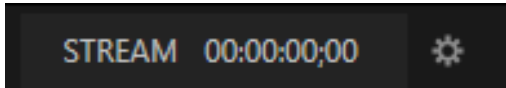


FIGURE 2-17

One of the default, production-ready streaming profiles can be selected for each channel by clicking the gear icon to the right of the *STREAM* button; or, you can create a new custom streaming profile using a menu point at the bottom of the same menu.

SECTION 2.4 VIEWING OPTIONS

FULLSCREEN



FIGURE 2-18

Clicking this button expands the video display for the selected channel to fill your monitor. Press ESC on your keyboard or click the mouse to return to the standard display.

OVERLAY



FIGURE 2-19

The *Overlay* icon at right below each channel can be useful for visualizing safe zones, centering and more. To use an overlay, just click on an icon in the list (Figure 2-20). More than one overlay can be active at the same time.

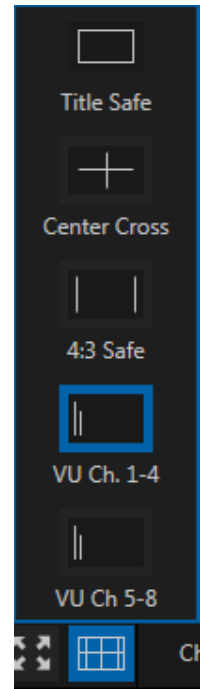


FIGURE 2-20

SECTION 2.5 TITLEBAR & DASHBOARD TOOLS

MediaDS’s Desktop *Titlebar* and *Footer* are home to a number of important displays, tools and controls. Prominently located at the top and bottom of the *Desktop*, these occupy the full width of the screen.

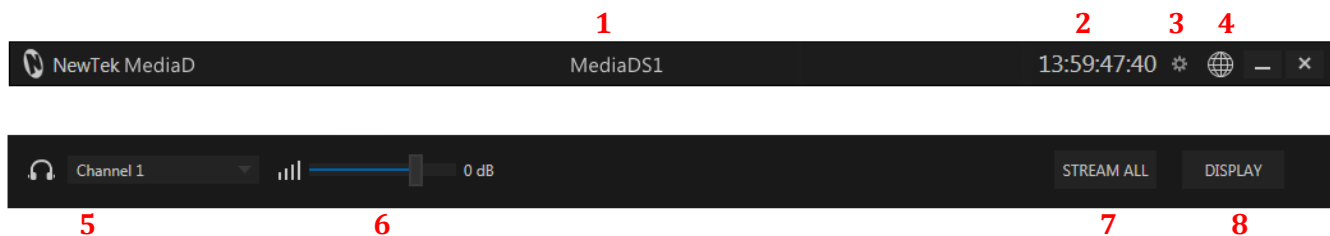


FIGURE 2-21

The various elements comprising the *Titlebar* and *Dashboard* tools are listed below (starting from top left):

1. *Machine name* – The system network name is editable, and supplies the prefix identifying NDI output channels on the network)
2. *System Configuration* (gear) – Provides access to system wide settings such as Video Standard, LTC timecode source, along with the ability to edit the default webpages served by MediaDS and access to Wowza Streaming Engine Manager.
3. *Help* – the globe icon provides links to online resources and system information
4. *Headphones Source* (see Section 2.5.1)
5. *Headphone Volume* (see Section 2.5.1)
6. *Stream All* (see Section 2.5.1)
7. *Display* (see Section 2.5.1)

2.5.1 SYSTEM CONFIGURATION

TIMECODE

Timecode displayed at right in the MediaDS *Desktop* titlebar. By default, the time shown corresponds to 'system time'. However it's common to sync the clocks of devices in a studio setting using LTC (Linear Time Code) timecode, supplied as an analog audio source to those systems.

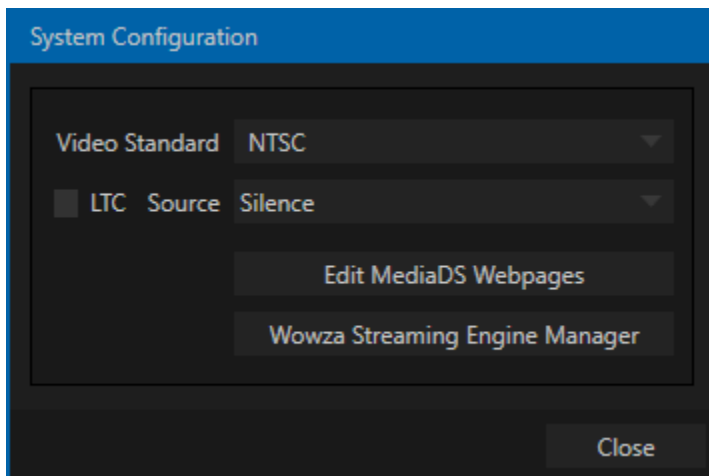


FIGURE 2-22

Optional LTC (Linear Time Code) timecode support is supplied in the *System Configuration* panel (Figure 2-22). To open this dialog, click the configuration gadget (gear) located at right next to the titlebar timecode display.

Additional configuration features presented in this panel are listed below:

VIDEO STANDARD

Select NTSC or PAL as appropriate for your region. (This will affect the video input connection types shown in *Video Source* menus for MediaDS channels.)

LTC SOURCE

Enable the LTC switch and select the audio source supplying Linear Time Code. The menu lets you to choose almost any available audio input type to supply the timecode signal.

EDIT MEDIAADS WEBPAGES

This button provides access to simple webpage options for the webpages served by MediaDS and to the local network. See Chapter 3, *Serving Webpages* for more information on this feature.

WOWZA STREAMING ENGINE MANAGER

Click this button to directly access the Wowza Streaming Engine in the system web browser.

Note: This page requires a user name and password. Initially, these are set to "admin" and "password" (without quotes) respectively. You may want to personalize these and record your choices somewhere safe for future reference.

SECTION 2.6 DASHBOARD FEATURES

2.6.1 AUDIO (HEADPHONES)

You can connect a headset to the (green) 1/8" audio output jack on the rear of the MediaDS motherboard.

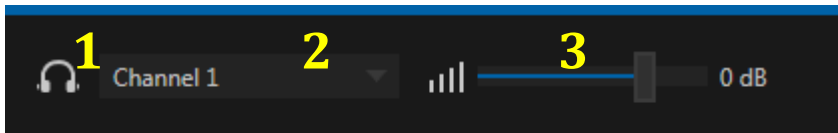


FIGURE 2-23

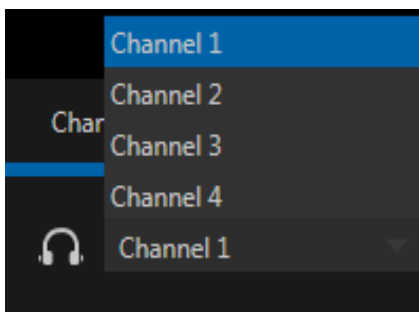


FIGURE 2-24

1. Controls for *Headphone audio* are found in the lower-left corner of the dashboard at the bottom of the screen (Figure 2-23).
2. The audio source supplied to the *Headphone* jack can be selected using the menu next to the *headphone icon* (Figure 2-24).
3. The *Volume* for the headset can be adjusted moving the slider at right (double-click this control to reset it to the default 0dB value).

2.6.2 STREAM ALL

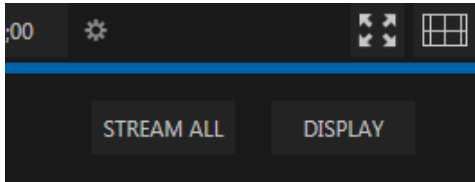


FIGURE 2-25

The *STREAM ALL* button is also located in the lower-right corner of the footer (Figure 2-25). Click it to begin or stop streaming of all channels (or start/ stop all streams.)

Note: The destination for archived clips, their base file names and other settings are controlled in the Configuration panel (see Figure 2-3).

2.6.3 DISPLAY (MONITORING)

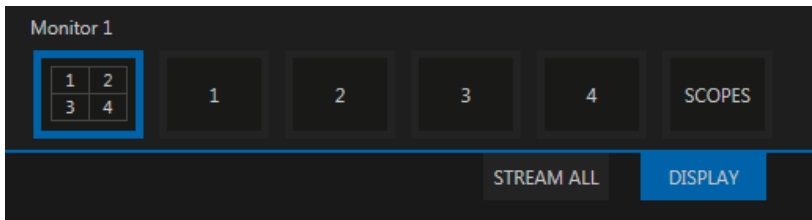


FIGURE 2-26

In the bottom-right corner of the Desktop *footer*, the *Display* widget offers a variety of layout options to let you viewing channels individually or in groups, as well letting you configure a second monitor (Figure 2-26). Among the layout options, a *Waveform* and *Vectorscope* can also be found here in the *Display* widget (Figure 2-27). Click one of the four channel viewports at lower left to assign the scopes to monitor that channel.

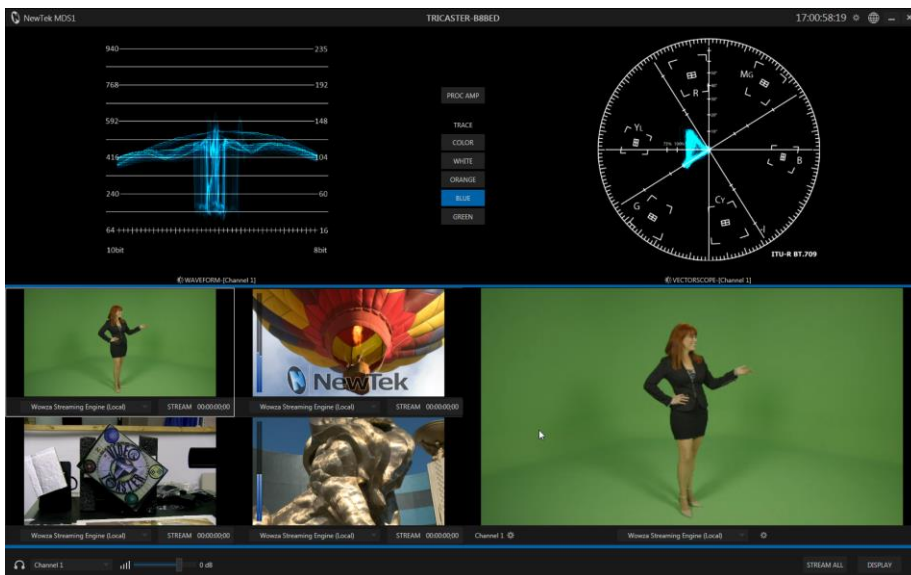


FIGURE 2-27

The selected source is shown in a larger preview pane at right. Click the gear beneath it to access Color controls when you wish to make adjustments to the video signal based on the information provided by the scope displays.

Chapter 3 SERVING WEBPAGES



In addition to sending video streams to typical content delivery networks, MediaDS is also able to serve webpages, complete with embedded video players.

Typically such MediaDS webpages might serve your need to be distribute video to a select audience over your local network or corporate VPN. This chapter discusses the management features of these webpages, as well as ways these features can be extended.

SECTION 3.1 DEFAULT WEB PAGES

If you have selected *Wowza Streaming Engine* as a target *Connection* (see the heading “Connection Menu”, in Section 0) for one or more channels, a corresponding webpage complete with video player and DVR style playback controls is automatically generated and served to your local network (Figure 3-3).

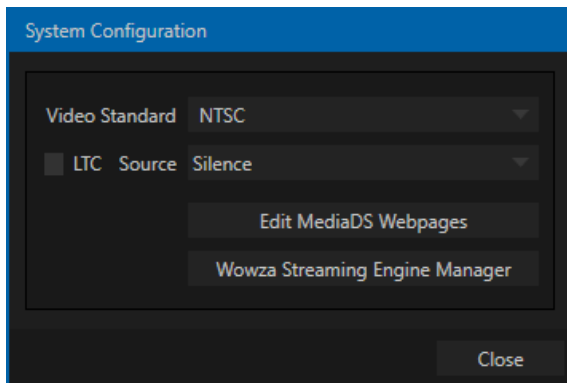


FIGURE 3-1

This will open MediaDS’s *Webpage Editor* (Figure 3-2). The dialog has four tabs, one for each streaming channel.

Here, you can change basic properties such as the page *Title*, and add a comment to the page *Description* field to be shown, in turn, beneath the hosted video player.

You can also load a custom bitmap image file (such as a PNG, TGA, JPG, etc., format file) such as a school or corporate logo to appear above the player window, beside the *Title*.

To edit some of the details of these pages, click the *Edit MediaDS Webpages* button in the *System Configuration* panel (Figure 3-1; see also Section 2.5.1).

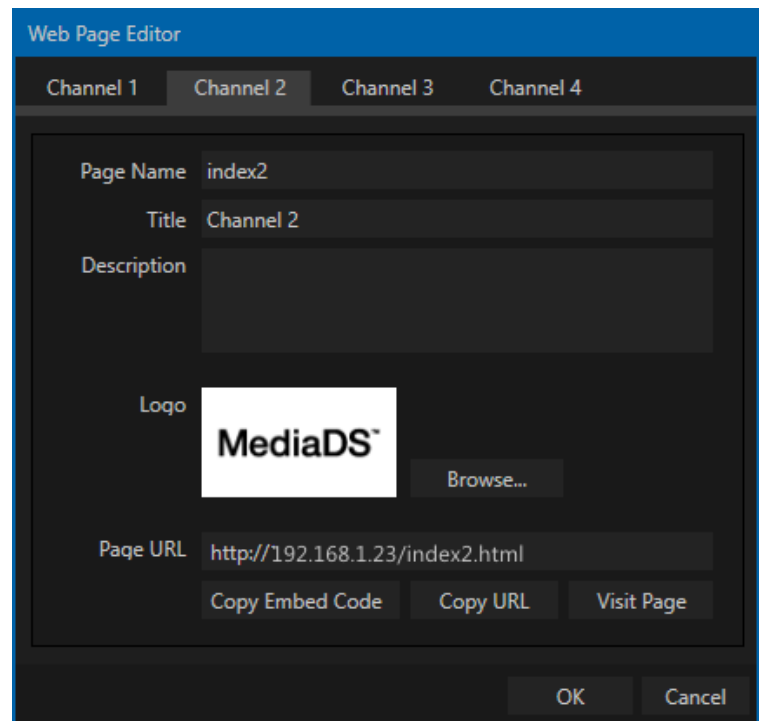


FIGURE 3-2

Near the bottom of the panel, the *Page URL* field informs you what to enter into the address bar of a web browser to access the designated page on your local network. You can also click *Copy URL* to capture the address to your system clipboard, or click *Visit Page* to jump to it using the system web browser.

Hint: The Page Name field for the Channel 1 defaults to “index”. This ensures that, if the Wowza Streaming Engine ‘Connection’ is enabled for that first channel, simply entering the IP number of the MediaDS system as the web browser address will let anyone on the network see the default page. (A ‘static IP’ can be useful here.)

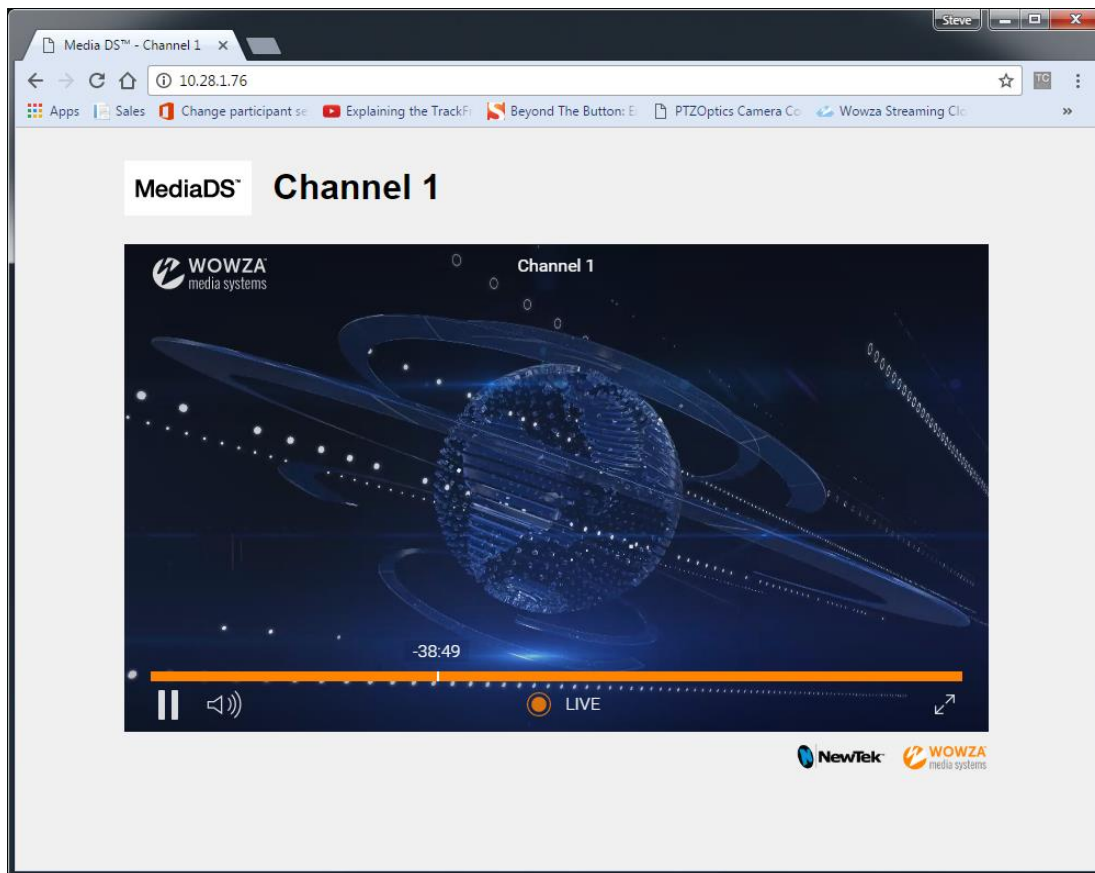


FIGURE 3-3

SECTION 3.2 CUSTOM WEB PAGES

Of course, you may want to serve more elaborate custom webpages too. In this context, it's important to note that MediaDS regenerates the four default webpages dynamically after each launch.

This approach ensures that the default streaming pages are effectively 'failsafe'. However, it also means that attempts to edit the default webpages (without other measures) will not succeed, because the changes are overwritten on each launch. Let's consider some approaches that *would* work.

First, note that MediaDS can not only serve these four default pages, but also additional pages you may create. This means that you can:

- Create webpages of your own design using standard webpage authoring tools (or even Notepad, if you are the rough and tumble sort!)
- And add your custom webpage(s) to the folder at C:\ProgramData\NewTek\MDS1\WebServer\.

For example, if you add a custom page named sales.html to this folder, staff in your Sales Dept. can access the page by entering the IP number for your MediaDS, followed by “\sales” into their web browser address bar.

A typical URL might look like this: 192.168.1.26\sales

Of course you’ll often want to include a video player on your custom page. You can easily add an embedded video player when creating or editing your new page.

Hint. By default, the Wowza Player adapts automatically to the width of the web page. You can, of course, modify this using standard CSS techniques as you please.

To add the video player to your page, click the button labelled *Copy Embed Code* in the MediaDS *Webpage Editor*. This copies the text string needed to create a player for a given streaming channel to the system clipboard. Afterward, you can paste it at a suitable location in the html code for your custom page.

Hint: In this manner, you can prepare pages with multiple streaming channels, as for example when you want to supply viewers with different content options.

In similar fashion, you might add a designated video streaming player to multiple pages. For example, you might show a video player hosting a speech by the CEO of your company on a webpage designed with Sales staff in mind. This Sales.html page might include additional content appropriate to those viewers on the page or available for download. A second page might host the same streaming video in a different context, perhaps designed for executive viewers or with an international audience in mind. In a scholastic environment, the same video stream might be presented differently for classroom use than for administrative monitoring.

Similarly, custom web pages might be serve audiences in different languages, and so on.

Hint: Another approach to this would be to change the default “index” Page Name in the Webpage Editor to something different. When MediaDS is next launched, the new name will be used, allowing you to add a new custom page named “index” that will not be inadvertently overwritten later.

APPENDIX A: NDI (NETWORK DEVICE INTERFACE)

For some, the first question may be “What is NDI?” In a nutshell, NewTek’s Network Device Interface (NDI) technology is a new open standard for live production IP workflows over Ethernet networks. NDI allows systems and devices to identify and communicate with each other, and to encode, transmit, and receive high quality, low latency, frame-accurate video and audio over IP in real time.

NDI enabled-devices and software have the potential to greatly enhance your video production pipeline, by making video input and output available anywhere your network runs. NewTek’s live video production systems and a growing number of third party systems provide direct support for NDI, both for ingest and output. Although MDS1 provides many other useful features, it is noteworthy that it also supplies NDI output video streams from each hardware input assigned to a streaming channel.

For more information on NewTek NDI, you might start with the webpage below:

<http://www.newtek.com/ndi.html>.

APPENDIX B: DIMENSIONS AND MOUNTING

MDS1 is designed for convenient mounting in a standard 19” rack (mounting rails are available separately from NewTek Sales). The unit comprises a 1 Rack Unit (RU) chassis supplied with ‘ears’ designed to permit mounting in standard 19” rack architecture.

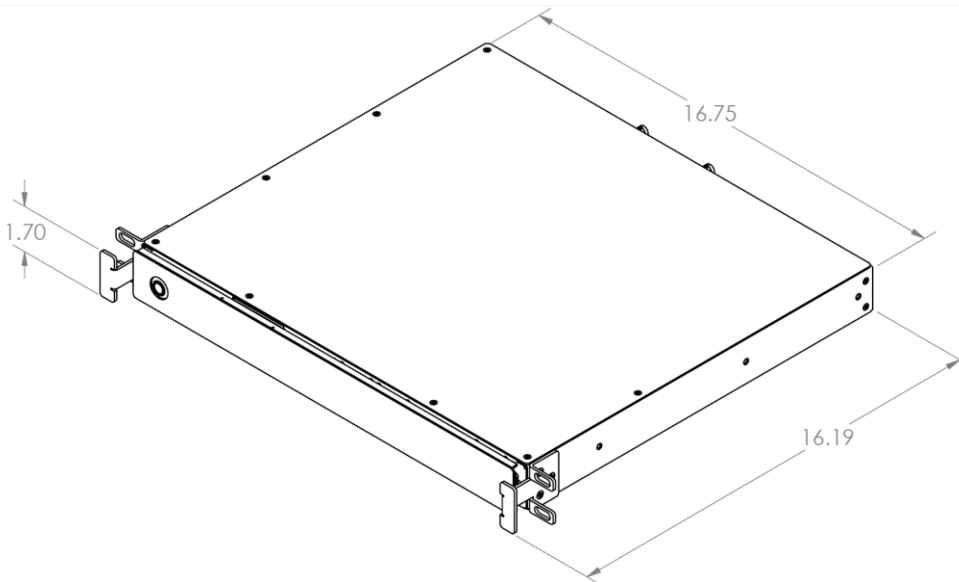


FIGURE 3-4

The units weigh nearly 14 pounds (6.35 KG). A shelf or rear support will distribute the load more evenly if rack-mounted. Good front and rear access is important for convenience in cabling should be considered.

In view of the top panel vents on the chassis, at least one RU should be allowed above these systems for ventilation and cooling. Please keep in mind that adequate cooling is a very important requirement for virtually all electronic and digital equipment, and this is true of MDS1 as well. We recommend allowing 1.5

to 2 inches of space on all sides for cool (i.e., comfortable ‘room temperature’) air to circulate around the chassis. Good ventilation at the front and rear panel is important, and ventilated space above the unit (1RU minimum is recommended).

When designing enclosures or mounting the unit, supplying good free air movement around the chassis as discussed above should be viewed as a critical design consideration. This is especially true in fixed installations where MDS1 will be installed inside furniture-style enclosures.

APPENDIX C: ENHANCED SUPPORT (PROTEK)

NewTek’s optional ProTekSM service programs offer renewable (and transferable) coverage and enhanced support service features extending well beyond the standard warranty period.

Please see <http://www.newtek.com/protek.html> or your local authorized NewTek reseller for more details regarding ProTek plan options.

APPENDIX D: RELIABILITY TESTING

We know our products play vital roles in the productions of our customers. Durability and consistent, robust performance are much more than just adjectives for your business and ours.

For this reason, all NewTek products undergo rigorous reliability testing to ensure they meet our exacting test standards. For MDS1, the following standards are applicable:

Test Parameter	Evaluation Standard
Temperature	Mil-Std-810F Part 2, Sections 501 & 502
Ambient Operating	0°C and +40°C
Ambient Non-Operating	-10°C and +55°C
Humidity	Mil-STD 810, IEC 60068-2-38
Ambient Operating	20% to 90%
Ambient Non-Operating	20% to 95%
Vibration	ASTM D3580-95; Mil-STD 810
Sinusoidal	Exceeds ASTM D3580-95 Paragraph 10.4: 3 Hz to 500 Hz
Random	Mil-Std 810F Part 2.2.2, 60 minutes each axis, Section 514.5 C-VII
Electrostatic Discharge	IEC 61000-4-2
Air Discharge	12K Volts
Contact	8K Volts

CREDITS

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This product uses the following libraries, licensed under the LGPL license (see link below). For the source, and the ability to change and recompile these components, please visit the links provided:

- FreeImage library <http://freeimage.sourceforge.net/>
- LAME library <http://lame.sourceforge.net/>
- FFmpeg library <http://ffmpeg.org/>

For a copy of the LGPL licence, please look in the folder c:\TriCaster\LGPL\

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