



eL1000

User Manual

Cine-tal Systems, Inc.
8651 Castle Park Drive
Indianapolis, IN 46256

FCC Notice

This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

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 Class rules. These limits are designed to Provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

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**CAUTION:
TO REDUCE THE RISK OF FIRE OR
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Preface

This User's Guide includes instruction and reference information for the operation and use of:

eL1000

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eL 1000 User's Guide

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Cine-tal Systems, INC.

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- Our Customer Support Representatives are available to provide telephone support during business hours (M-F, 8am-8pm EST), and after these hours for urgent “emergency” technical support.
- Before returning the Product for repair or replacement, it is necessary to obtain a Return Merchandise Authorization (RMA) number by calling (317) 576-0091. You will be asked to provide the system’s serial number (or a copy of the invoice showing date of original purchase) and/or the Hardware Maintenance Agreement number.
- In order to provide you with an exchange unit in advance of receiving the non-functioning unit, we will need (i) a company purchase order for the value of the unit being provided (ii) the serial number of the component being returned. Your PO will not be billed if the non-functioning unit is returned as described below within 7 days.

- The non-functioning part should be properly packed and shipped pre-paid to CINE-TAL with the **RMA number clearly displayed on the outside of the package** and on the accompanying RMA form. We will refuse to accept any package without a valid RMA number.
- Normal labor, material, and shipping charges will apply to repairs outside the scope of the Limited Warranty.

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Section 1: Getting Started

Chapter 1: Introduction

Welcome!

The Cine-tal eL 1000 delivers precision HD monitoring and color management in the for both production and post production environments. The open architecture provides display device profiling, calibration and digital color processing for monitors and projector technologies, including CRT, LCD, Plasma, DLP and D-ILA. The eL 1000 provides four (4) Single Link HDS DI (4:2:2) inputs or two (2) Dual Link HDS DI (4:4:4) inputs. In addition , there is a DVI-D input supporting resolutions of 1920x1080 and 1920x1200.

Outputs include two (2) Single Link HDS DI (4:2:2) or one (1) Dual Link HDS DI (4:4:4). Additionally, the DVI-D output supports resolutions of 1920x1080 or 1920 x1200. The eL 1000 provides calibration and color management on professional displays that support HDS DI and industrial or consumer displays that support DVI-D or HDMI.

How to use this guide

This *eL 1000 User Guide* is intended to be a learning tool for those new to the eL 1000 product as well as a handy reference for experienced operators. The *User's Guide* offers step by step instructions and general information.

If you are new to the eL 1000 we strongly suggest that you read this manual completely and familiarize yourself with all the tasks presented. An investment in time now may save a lot of time later.

Connections

Starting from the top down:



AC Mains Switch

AC Mains Connection..... 110-230v, 60-50Hz

DVI Output.....*Connection to external monitor or projector
1920 x 1200 or 1920x1080 resolution at 48-75 Hz (vertical)*

Video Out 1.....*HD SDI Out 1*

Video Out 2.....*HD SDI Out 2*

Video Out 1&2.....*Dual Link Out 1*

PS/2 Mouse.....*Green, Mouse*
PS/2 Keyboard

DVI Input.....*Input from computer device
1920 x 1200 or 1920x1080 resolution at-60 Hz (vertical)*

Network Connection*Gigabit Ethernet*

VGA Monitor Output.....*Local Monitoring*

Reference Loop Input.....*Analog Reference*

Video Input 4.....*HD SDI Input 4*

Video Input 3.....*HD SDI Input 3*

Video Input 3&4.....*Dual Link Input 3&4*

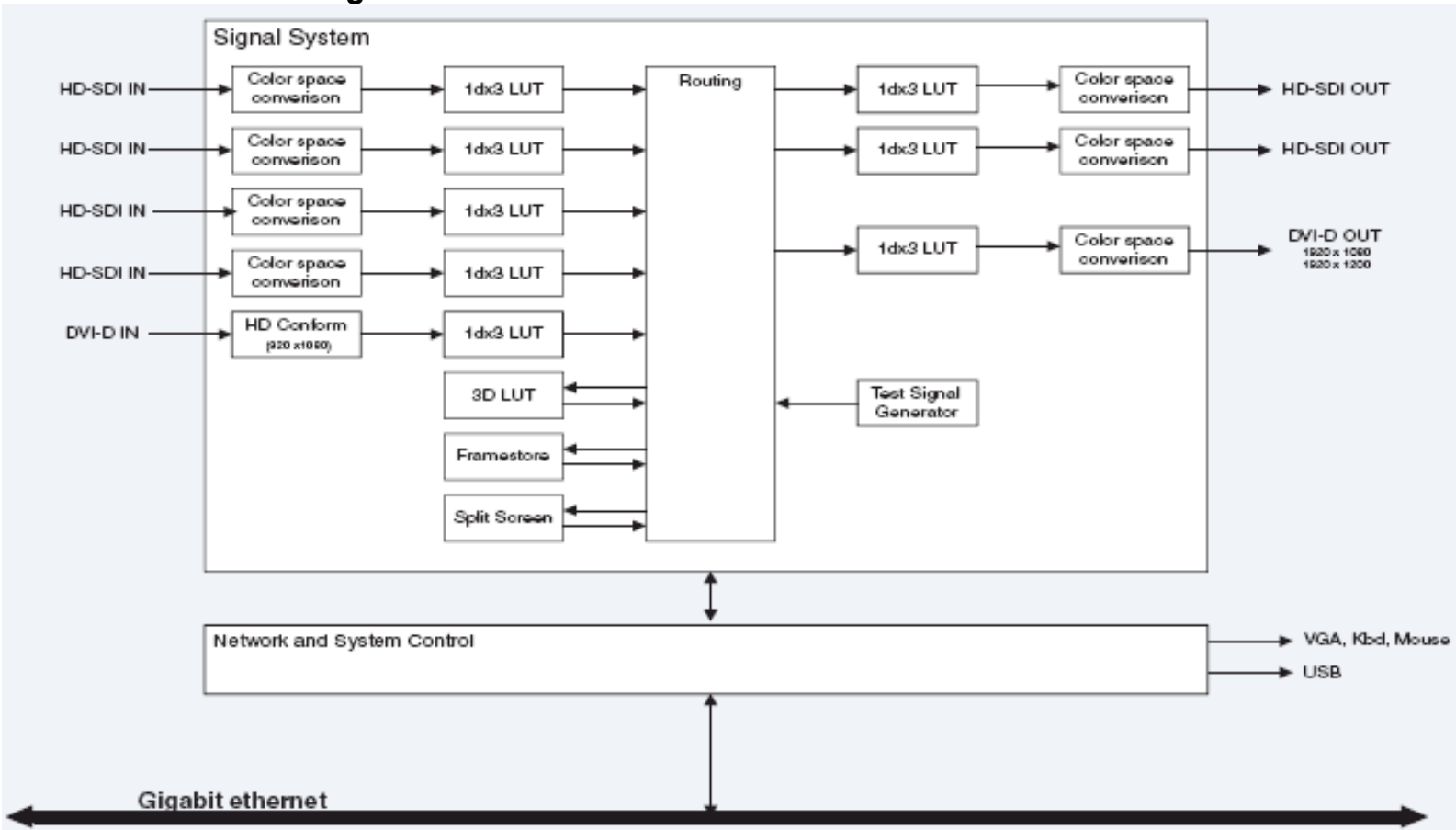
Video Input 2.....*HD SDI Input 2*

Video Input 1.....*HD SDI Input 1*

Video Input 1&2.....*Dual Link Input 1&2*

USB Connectors.....*Storage or Calibration Probe*

Block Diagram



Front Panel

The front panel of the eL 1000 contains two USB ports, a System Boot-up switch, a nameplate containing the machine name, and an indicator LED. The LED will glow blinking green when the unit is in the process of booting, and solid green when the unit is fully booted and ready for operation, and blink red if there is an operational fault. eL1000 can be accessed via the integrated web server by entering http://*****, where ***** is the machine name printed on the nameplate on the front of the unit.

Rear Panel

The rear panel of the eL 1000 contains a VGA monitor port, a PS/2 connection for a standard PS/2 mouse, 4 HD-SDI inputs, 1 DVI-D Input, an Analog Reference input and output, 2 HD-SDI outputs, a DVI-D output, an AC Mains Power connections, and a Mains Power toggle switch.

Mounting

The eL 1000 uses a standard rack mounting pattern and is mounted using the removable rack mount ears.

Power Requirements

The eL 1000 runs on 100 to 240V AC at 50 or 60 hertz. Nominal current is 2A.

User Serviceable Parts

There are no user serviceable parts inside the eL 1000 units. Please refer all service to a Cine-tal authorized technician.

Turning On The System

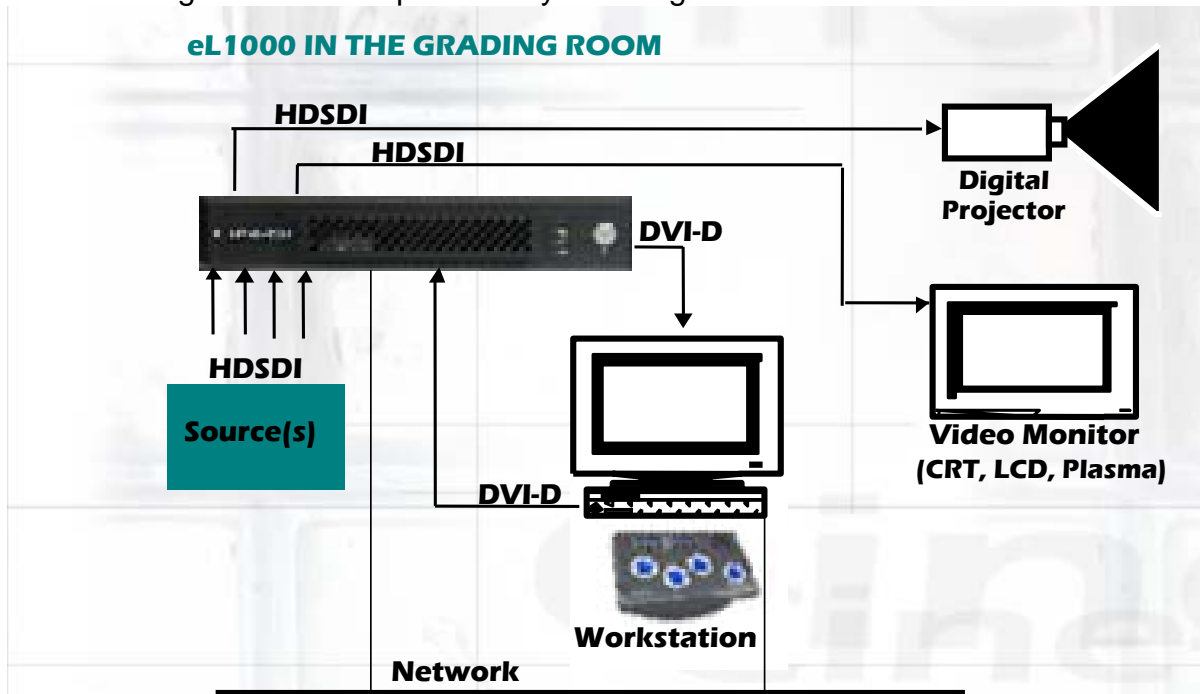
To turn the system on depress the Mains Power toggle switch on the rear of the system, then depress the system Boot-up switch on the front of the unit. Note: To protect the system from erratic power outages the system requires a 10 second wait period between power down and immediate power up.

Section 2: Unit operation, Web Interface

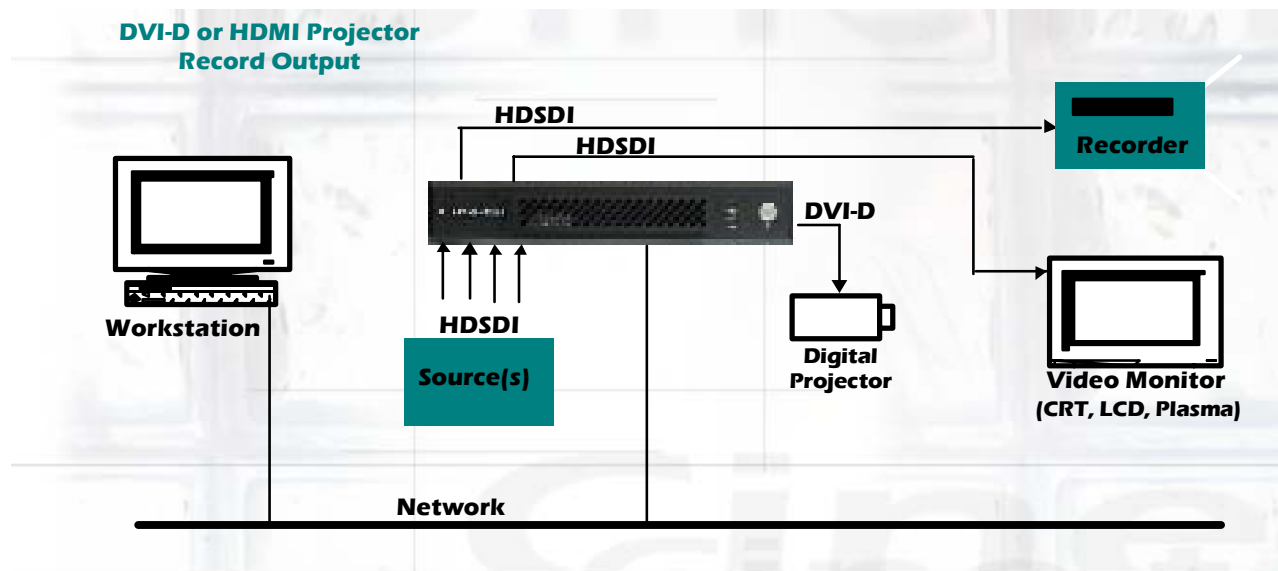
Chapter 2: Quick Start

Typical Setups:

The following are two examples of ways to integrate eL 1000 into a workflow:



This would be one example of how to integrate eL 1000 into a grading room or post production environment. The source is fed across the HD-SDI connection, with the workstation going into the DVI Input of eL 1000. The HD-SDI outputs drive a reference video monitor and a digital projector. This setup allows for a color calibrated desktop to be used in conjunction with an artist reference monitor and client/ master projector to ensure that everyone involved is seeing the same color at the same time. The eL 1000 can be controlled in this setup across the network connection via the web interface directly from the workstation.



This setup would be one example of how to use eL 1000 in an On-Set environment. Your source feeds the eL 1000 across the HD-SDI connection(s), routing color previsualized video to your onset reference monitor for immediate review; or drive the DVI/HDMI capable projector for graded dailies. This setup also allows for a record medium to be attached to capture a graded or non-graded backup for later review. The eL 1000 is controlled in this instance across the network connection, possibly by an on-set color grading station or non-linear editor.

Web Control of the eL 1000

The eL 1000 is able to be controlled using a standard web browser on either a Mac or a PC. In order to access the web interface of the eL 1000 enter http://cinetal-***** into the URL bar of your web browser (where ***** is the last six digits of the serial number of the eL 1000. “cinetal-*****” is also referred to as the machine name, which can be found on the tag located on the front of the eL 1000). Upon entering this into the URL bar you will be redirected to the [operate](#) page.

Local Control of the eL 1000

The eL 1000 can also be controlled by plugging a VGA monitor, mouse, and keyboard into the appropriate ports on the back panel of the eL 1000. The menuing for local control will be an exact replica of the web based control. Simply click the “Launch eL 1000 Operate” button, and you will be ready to operate the unit.

Chapter 3: Common operations

Loading a LUT

Supported Input LUT file formats:

ASC CDL

Iridas .look

NuCoda and Iridas FrameCycler (.cms, .itx, and related files).

Most .csv or .txt files that are RGB columnar data (this is common).

Supported 3D LUT file formats:

Discreet Fire 3D cube file

Discreet Flame 3D cube

Discreet Flint 3D cube

Discreet Smoke 3D cube

Discreet Toxic 3D cube file.

Discreet Maya and Max 3D cube

Assimilate Scratch 3D cube

Kodak CDM 3D cube (unencrypted)

Truelight Filmlight 2D LUTs and 3D cube (unencrypted, as exported by Iridas)

Iridas FrameCycler 3D cube .itx

Iridas Speed Grade 2D LUT and 3D cube

Nucoda 2D LUT and 3D cube file

Quantel iQ 3D cube file

Pandora Pogle 3D cube file

Quantel 3D cube file.

SiliconColor FinalTouch 3D cube file

Mistika 3D cube file

Any .a3d, .mga, .3dl, .cms file.

.lut or .txt files (often the underlying format is really one of the above and can be detected as such).

Chrome matrix

DVS clipster

Davinci Resolve

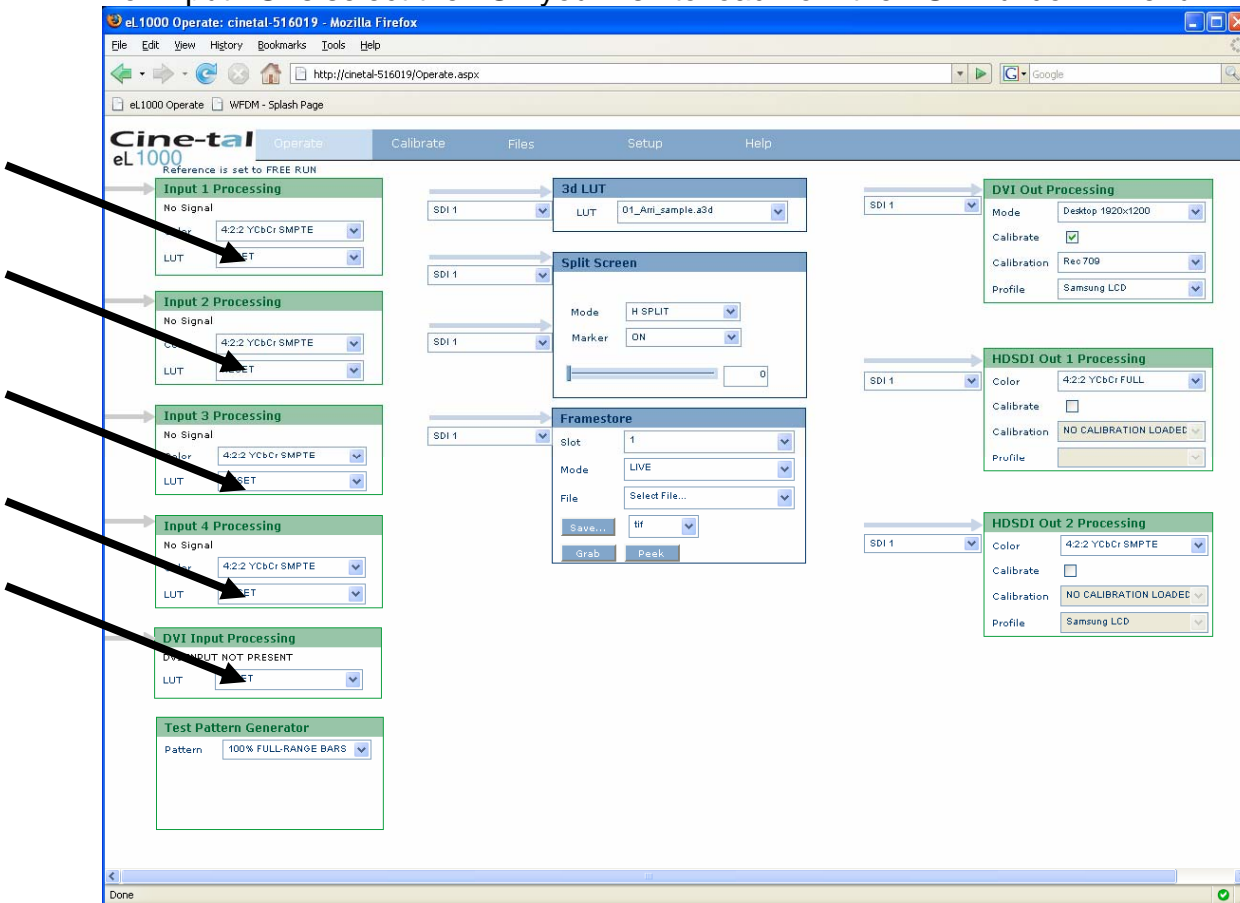
Thomson LUTher (.txt, unencrypted)

Uploading a LUT to eL 1000:

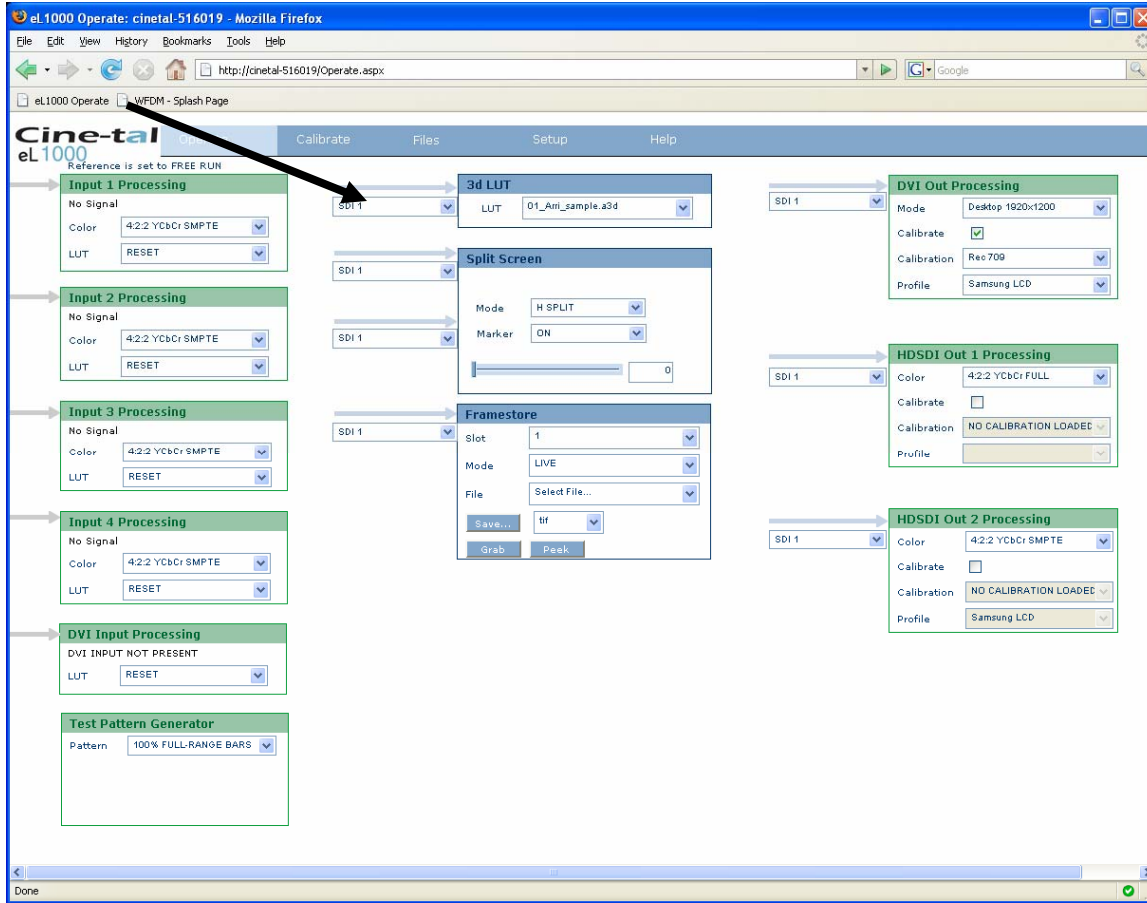
In order to upload a LUT into the eL 1000 you must access the [files](#) page. Select the appropriate folder (Input LUTs for 1D LUTs, 3D LUTs for 3D LUTs). Press the “Browse” button and navigate to the LUT on your local machine. Highlight the LUT you would like to upload and click “Open”
You should see the file path of the selected LUT in the text bar. If so, select Upload LUT, and eL 1000 will load the LUT into its local storage and populate the appropriate pulldown menu with that LUT.

Loading LUTs into the 3D LUT or Input LUT processor:

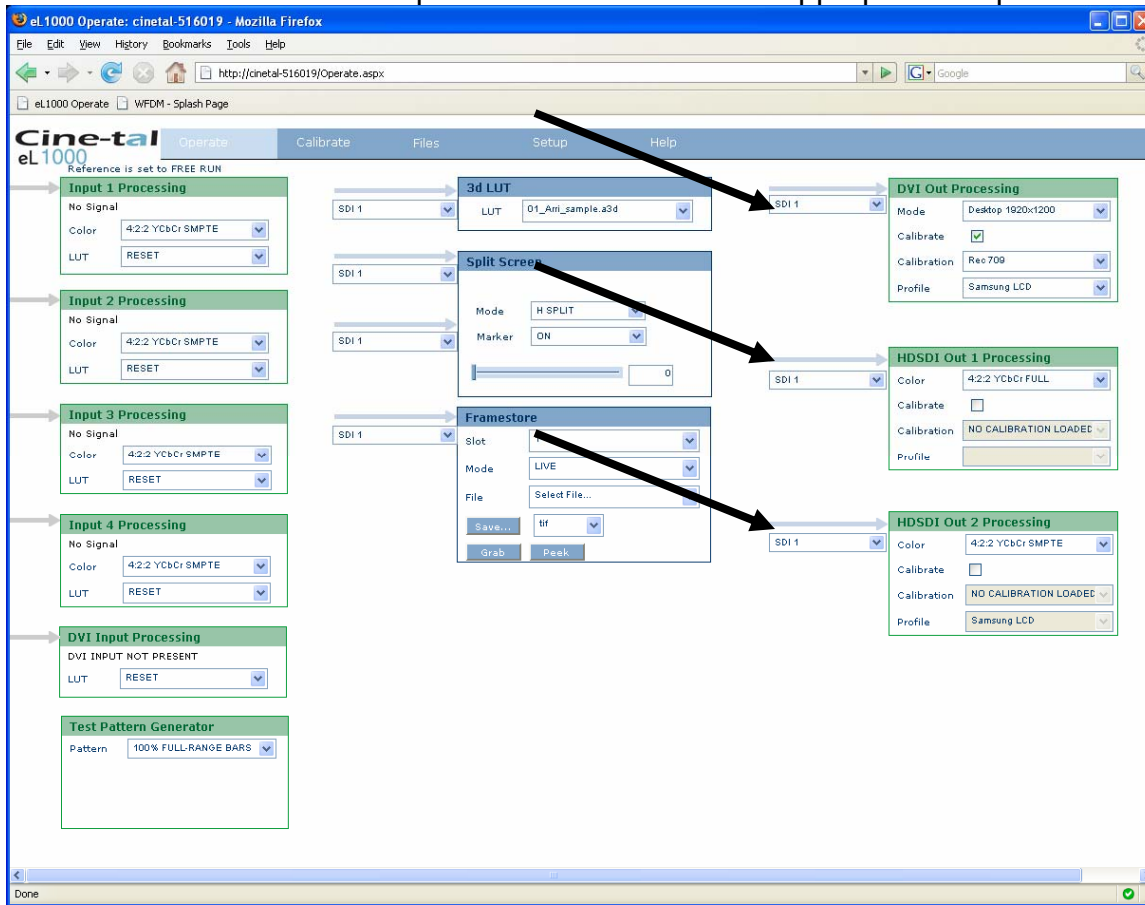
For Input LUTs select the LUT you wish to load from the **LUT Pulldown** menu:



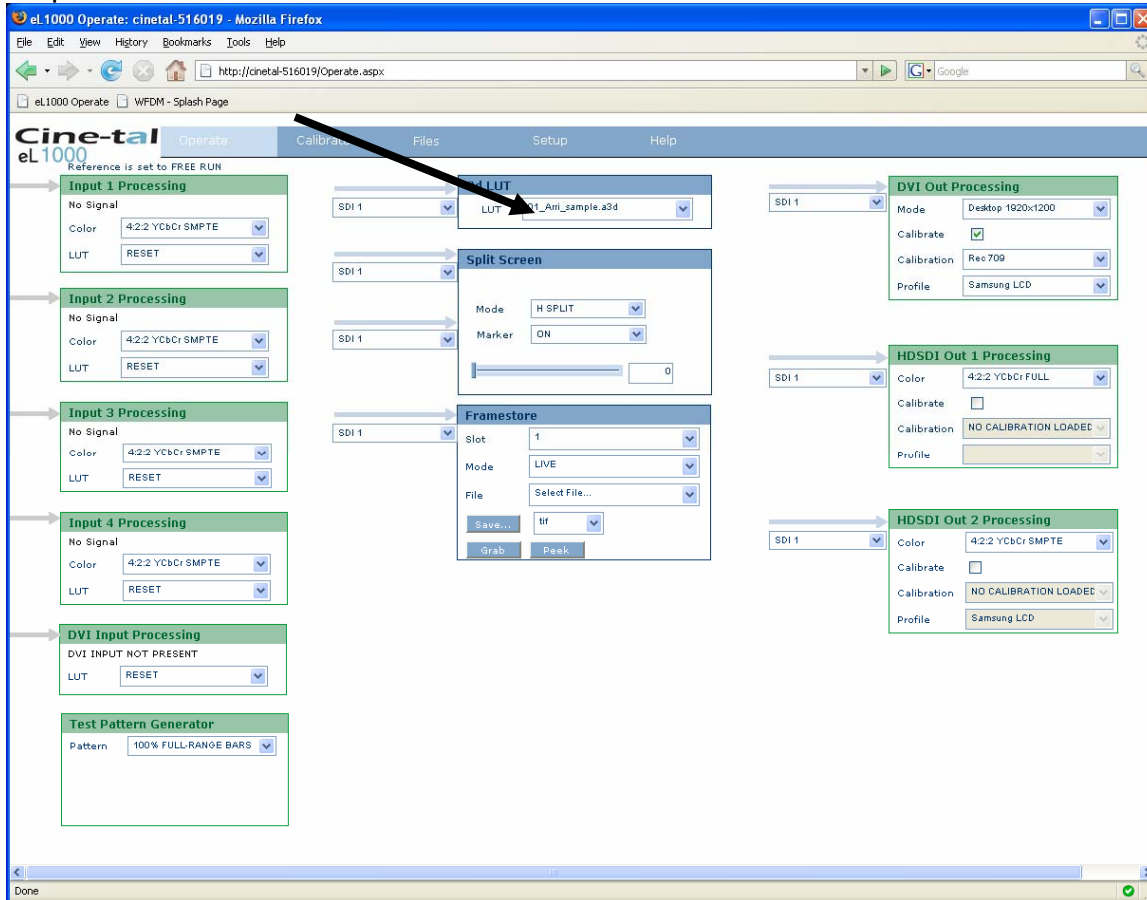
For 3D LUTs, first route the appropriate input as the source of the 3D LUT Processor:



Then select the “3D LUT Output” as the source for the appropriate output:



Finally, select the 3D LUT you wish to load from the **LUT** Pulldown Menu in the **3D LUT** pane. You should see the effects of the 3D LUT processing on your selected output:



How To Load A Still

Still File Support:

eL 1000 supports loading the following still file formats:

.bmp

.tif

.dpx

.png

.jpg

.cin

.tga

Many other popular Still Formats

Uploading a Still to eL 1000:

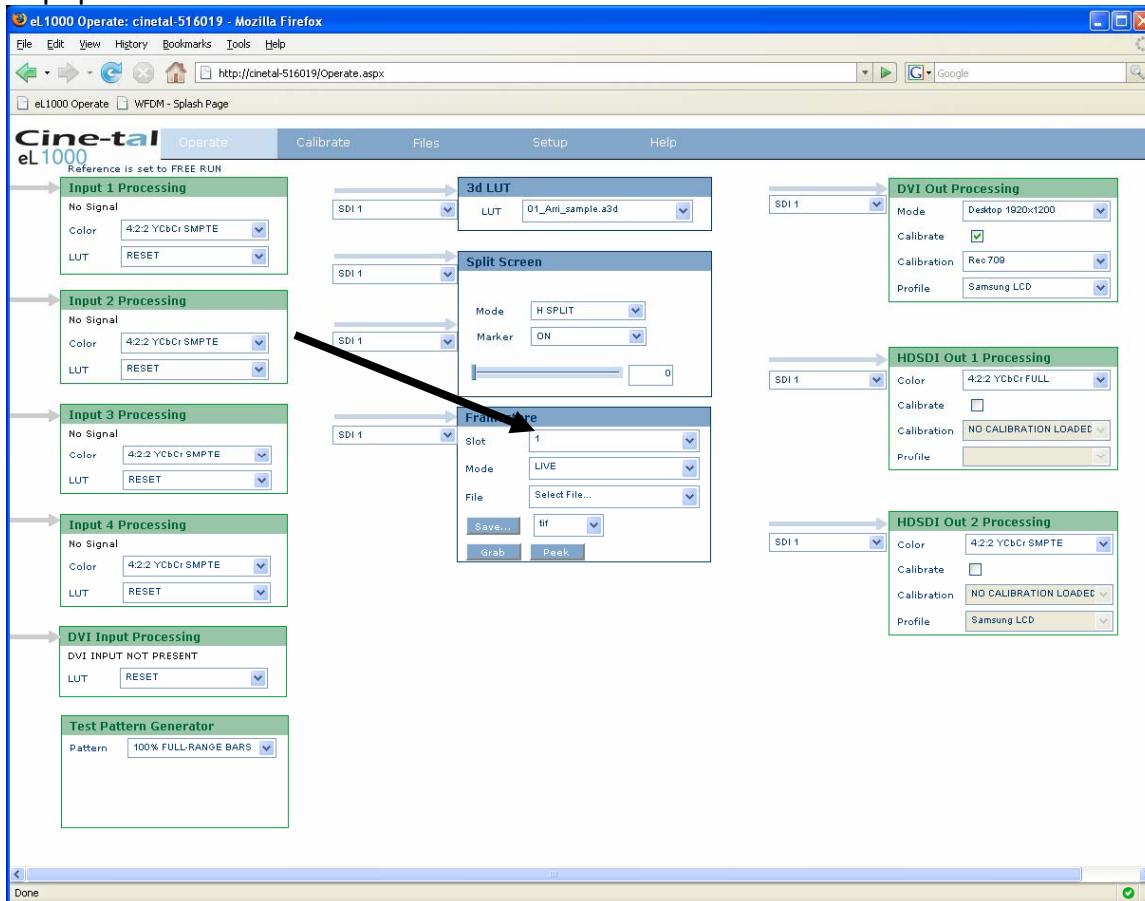
In order to upload a Still into the eL 1000 you must access the [files](#) page.

Select the “Stills” folder. Press the “Browse” button and navigate to the Still on your local machine. Highlight the Still you would like to upload and click “Open”

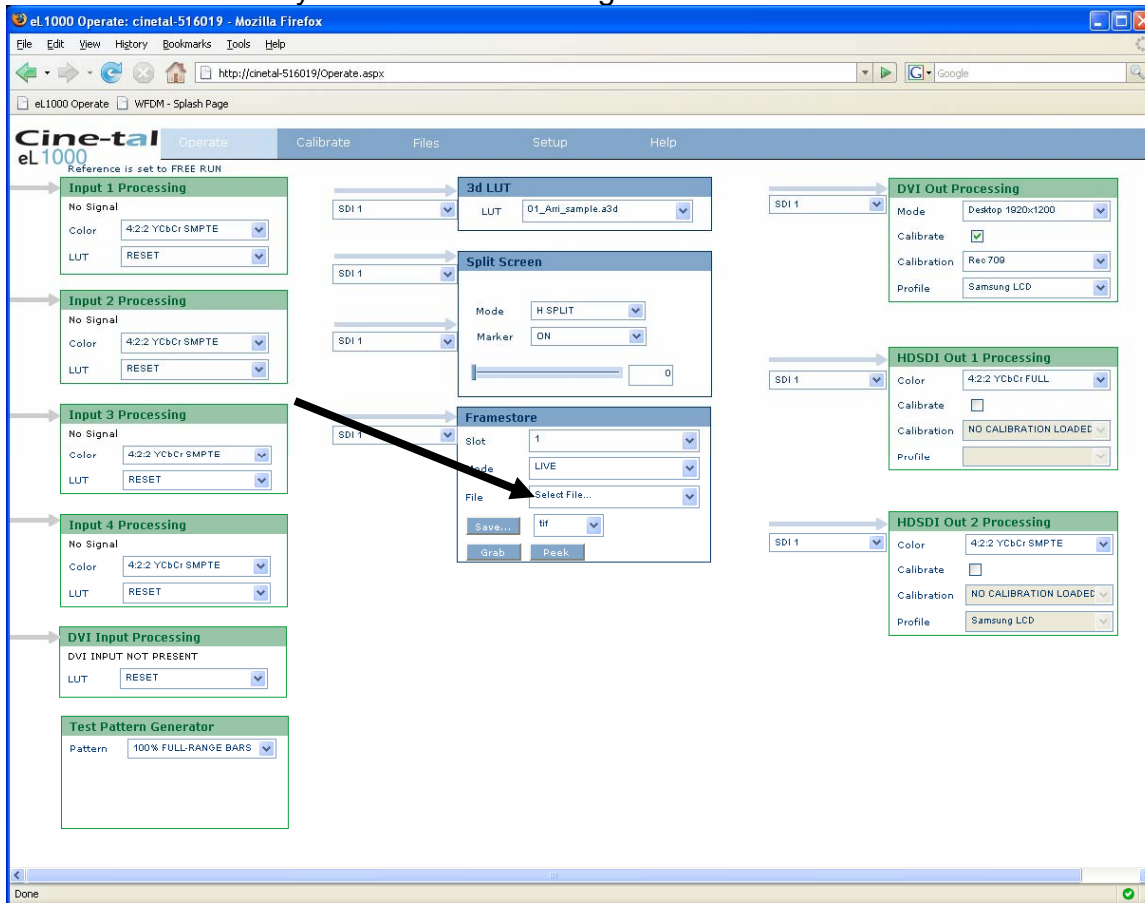
You should see the file path of the selected Still in the text bar. If so, select Upload Still, and eL 1000 will load the Still into its local storage and populate the “Select Still” pulldown menu with that file.

Assigning and Displaying a Still:

To assign a still to a Framestore slot, first select the Framestore slot you would like to populate:

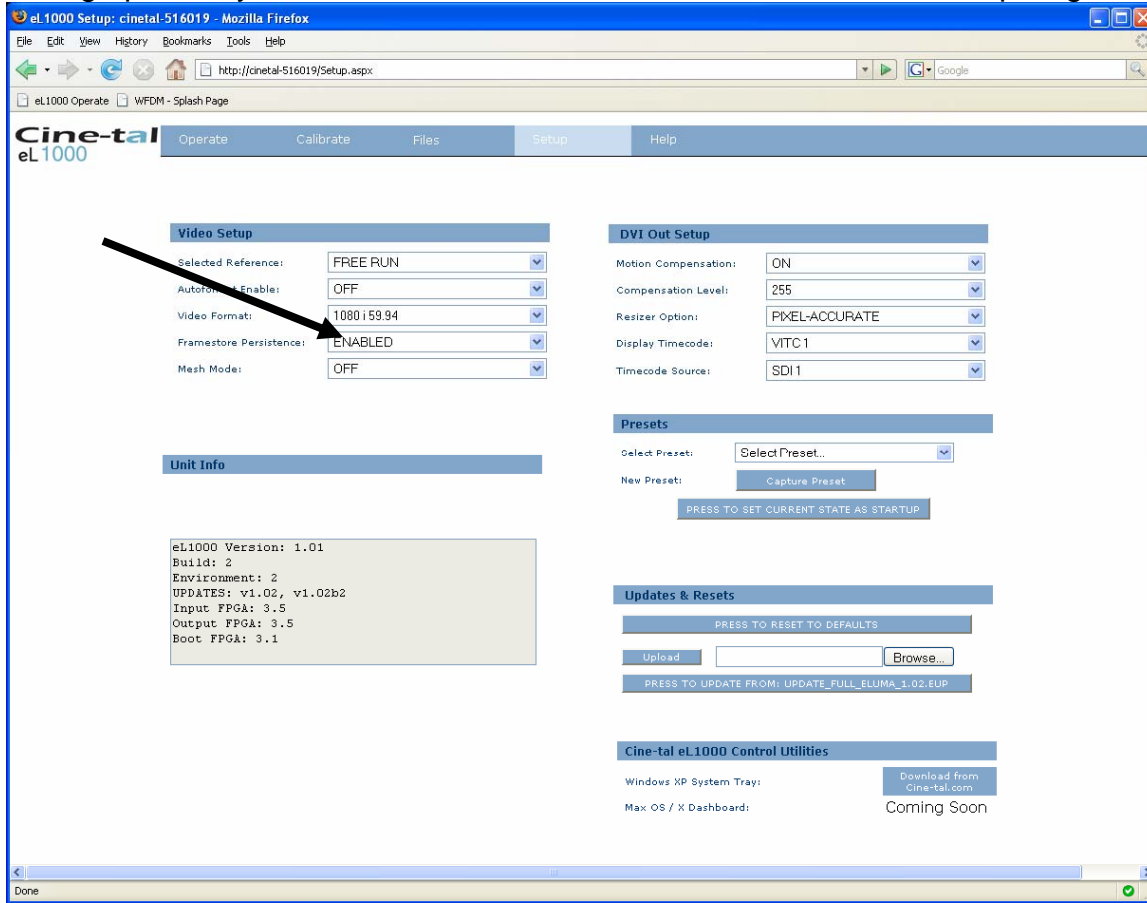


Then select the Still you would like to assign to that slot. :

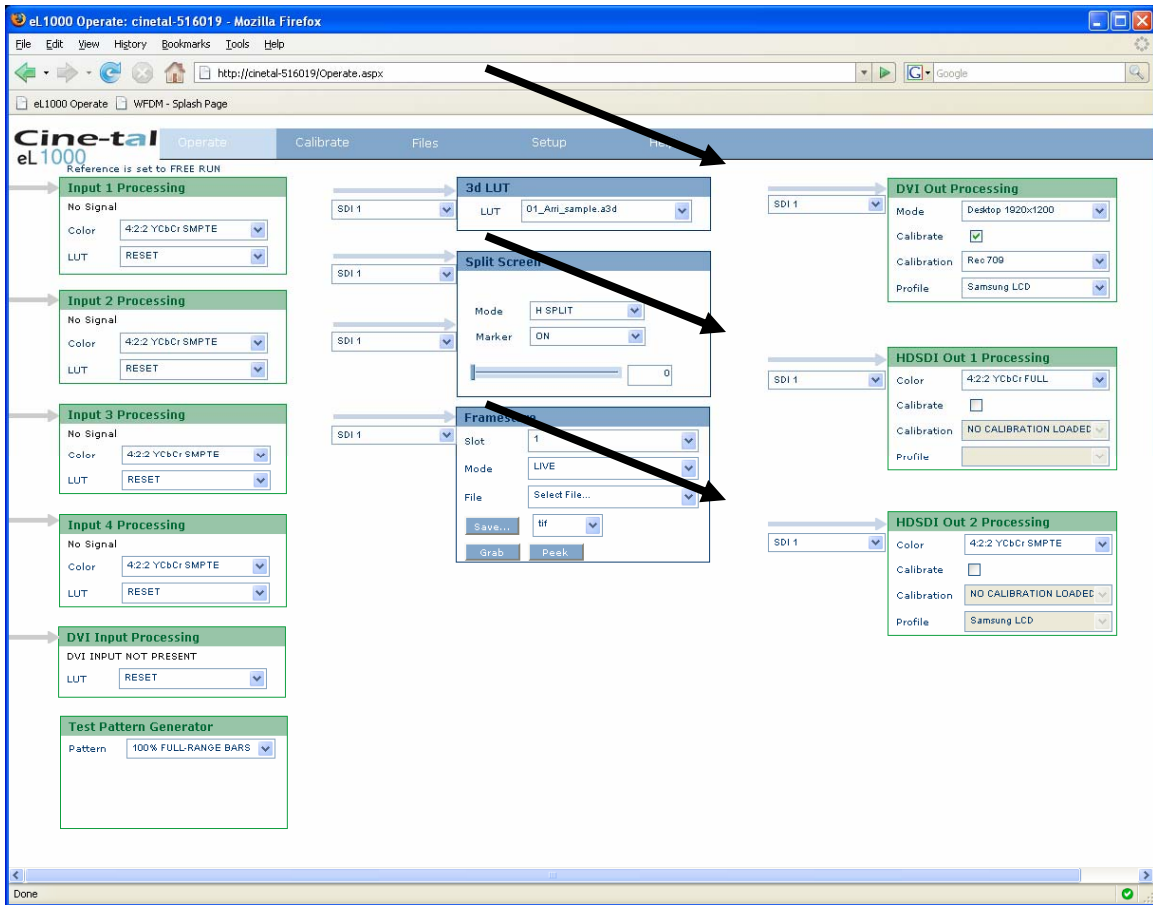


Once you select the Still from the Pulldown menu the Framestore **Mode** will automatically switch to "Still". As you switch in between Framestore slots the **Mode** will adjust accordingly. As you load multiple slots of the Framestore, you will be able to toggle your loaded stills quickly.

To keep the slots of the Framestore populated with the Stills you have selected through power cycles, turn on **Framestore Persistence** from the Setup Page:



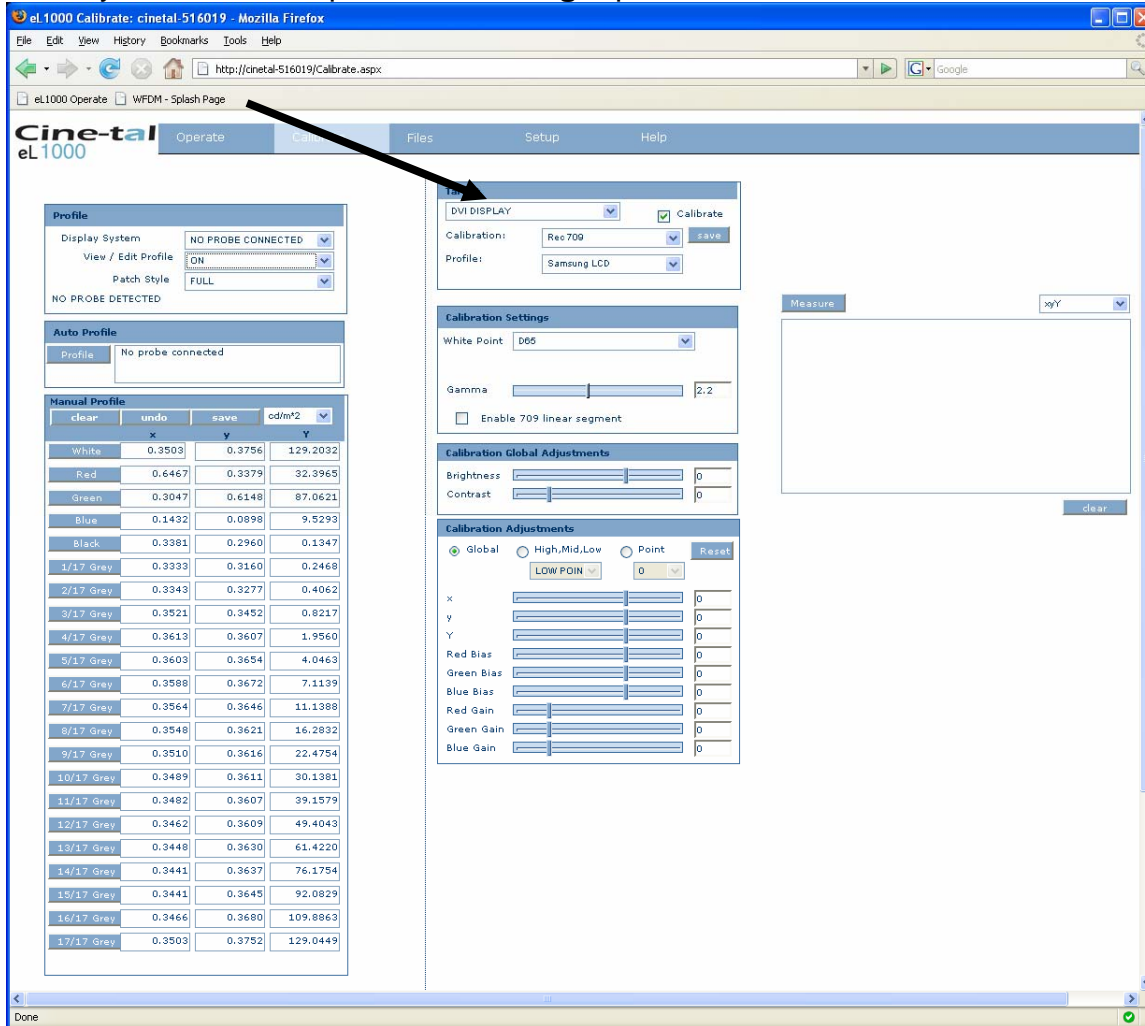
To route your still images to the display of your choice, simply select “Framestore” in the **Source** Pulldown menu to the left of the display of your choice:



Profiling a Display

Selecting a Target

To select a display as the target to be profiled, navigate to the [Calibrate](#) page, and select your desired output from the **Target** pulldown menu:



Auto Profile VS. Manual Profile

In order to Auto Profile you must use one of the supported USB enabled calibration probes, including the Gretag Macbeth EyeOne Display2, EyeOne Design, or the X-Rite Hubble. To use a non-supported calibration probe, you will have to use the Manual profile method.

For an Auto Profile, you will attach your calibration to a USB port on the eL 1000 and follow the instructions in the **Auto Profile** pane:

The screenshot shows the eL1000 Calibrate software interface. The 'Auto Profile' pane is highlighted with a black arrow. The 'Manual Profile' pane contains a table with the following data:

	x	y	cd/m ²
White	0.3503	0.3756	129.2032
Red	0.6467	0.3379	32.3965
Green	0.3047	0.6148	87.0621
Blue	0.1432	0.0898	9.5293
Black	0.3381	0.2960	0.1347
1/17 Grey	0.3333	0.3160	0.2468
2/17 Grey	0.3343	0.3277	0.4062
3/17 Grey	0.3521	0.3452	0.8217
4/17 Grey	0.3613	0.3607	1.9560
5/17 Grey	0.3609	0.3654	4.0463
6/17 Grey	0.3588	0.3672	7.1139
7/17 Grey	0.3564	0.3646	11.1388
8/17 Grey	0.3548	0.3621	16.2832
9/17 Grey	0.3510	0.3616	22.4754
10/17 Grey	0.3489	0.3611	30.1381
11/17 Grey	0.3482	0.3607	39.1579
12/17 Grey	0.3462	0.3609	49.4043
13/17 Grey	0.3448	0.3630	61.4220
14/17 Grey	0.3441	0.3637	76.1754
15/17 Grey	0.3441	0.3645	92.0829
16/17 Grey	0.3466	0.3680	109.8863
17/17 Grey	0.3503	0.3752	129.0449

The Auto Profiling will display a series of colored screens on your target output device, and the probe will read the output of that display and populate the spreadsheet in the **Manual Profile** pane.

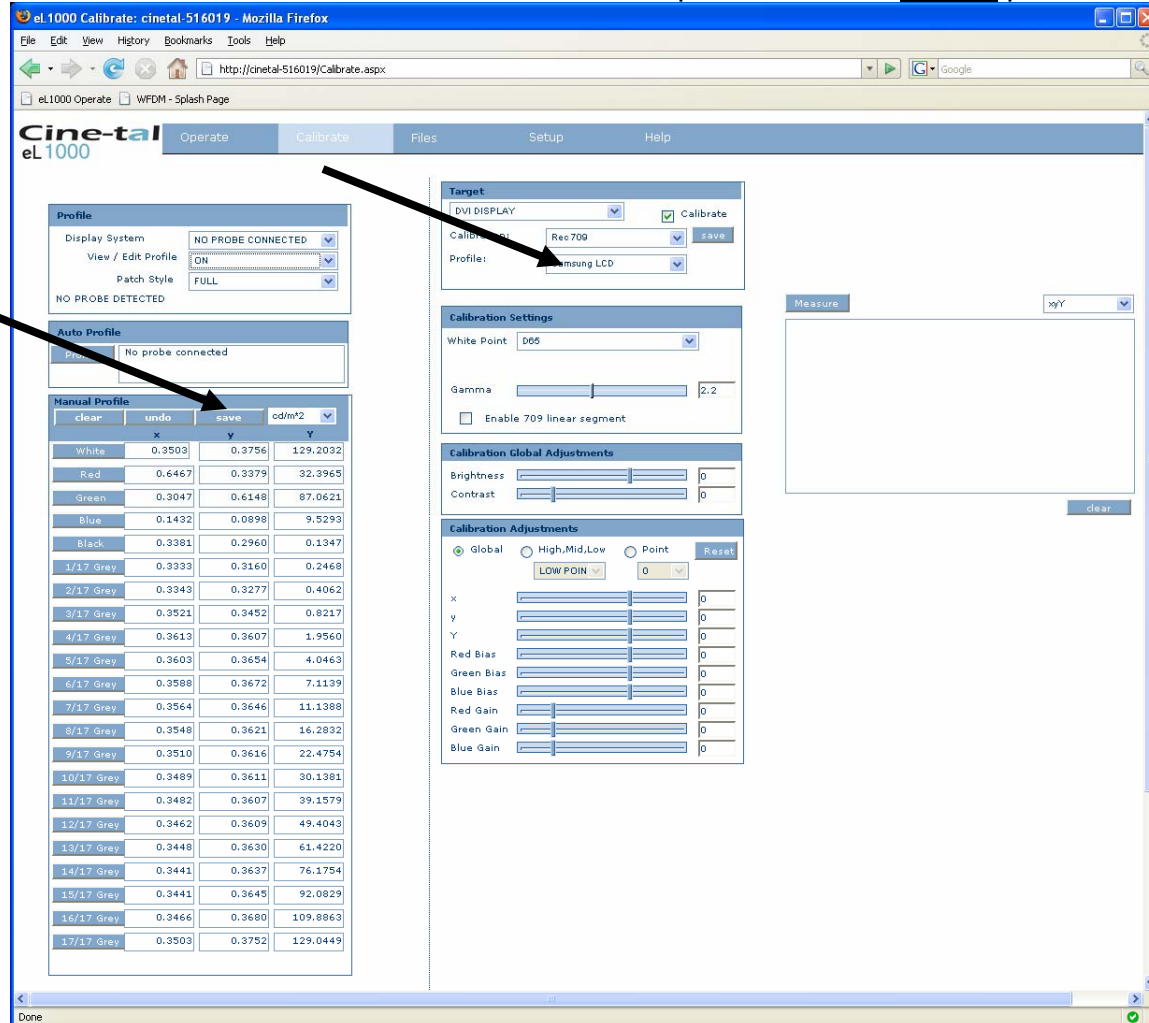
To perform a Manual Profile, set up your probe to take readings per the manufacturer's recommendations. Use the buttons along the left edge of the **Manual Profile** pane to display the colored screen on your target display. Measure the output of the display and log the x,y,Y values in the text box immediately to the right of the corresponding button:

The screenshot shows the eL1000 Calibrate software interface. The **Manual Profile** panel contains the following table of color and grayscale patches:

	x	y	Y
White	0.3503	0.3756	129.2032
1/4	0.6467	0.3379	32.3965
Green	0.3047	0.6148	87.0621
Blue	0.1432	0.0898	9.5293
Black	0.3381	0.2960	0.1347
1/17 Grey	0.3333	0.3160	0.2468
2/17 Grey	0.3348	0.3277	0.4062
3/17 Grey	0.3521	0.3452	0.8217
4/17 Grey	0.3613	0.3607	1.9560
5/17 Grey	0.3603	0.3654	4.0463
6/17 Grey	0.3588	0.3672	7.1139
7/17 Grey	0.3564	0.3646	11.1388
8/17 Grey	0.3548	0.3621	16.2932
9/17 Grey	0.3510	0.3616	22.4754
10/17 Grey	0.3489	0.3611	30.1381
11/17 Grey	0.3482	0.3607	39.1579
12/17 Grey	0.3462	0.3609	49.4043
13/17 Grey	0.3448	0.3630	61.4220
14/17 Grey	0.3441	0.3637	76.1754
15/17 Grey	0.3441	0.3645	92.0829
16/17 Grey	0.3466	0.3680	109.8863
17/17 Grey	0.3503	0.3752	129.0449

The **Target** panel includes a **Measure** button and an **xyY** text box for logging data. Arrows in the image indicate the workflow from the Manual Profile table to the Measure button.

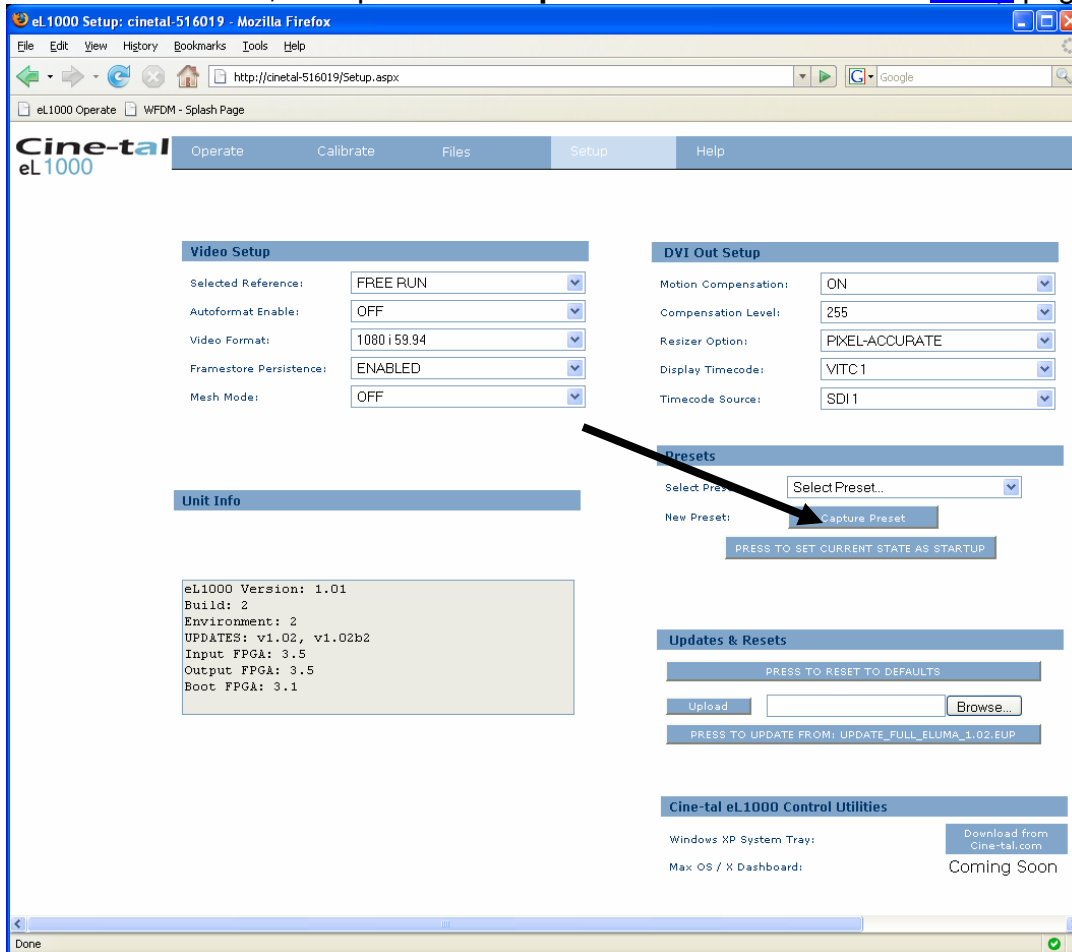
When you have completed the Manual Profile, select the profile that you wish to overwrite, or select “New Profile” in the **Profile** pulldown in the **Target** pane:



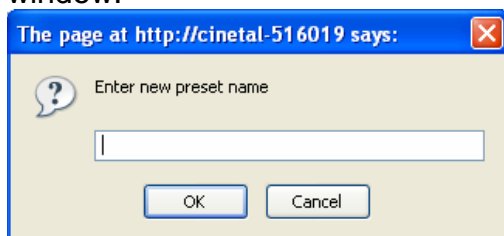
If you select “New Profile” you will be prompted to select a name for the new profile. Once you have entered the file name, click the Save button in the **Manual Profile** pane.

Saving a Preset:

To save a new preset to your eL 1000, configure the machine to the setup that you would like to recall, then press the **Capture Preset** button on the [Setup](#) page:

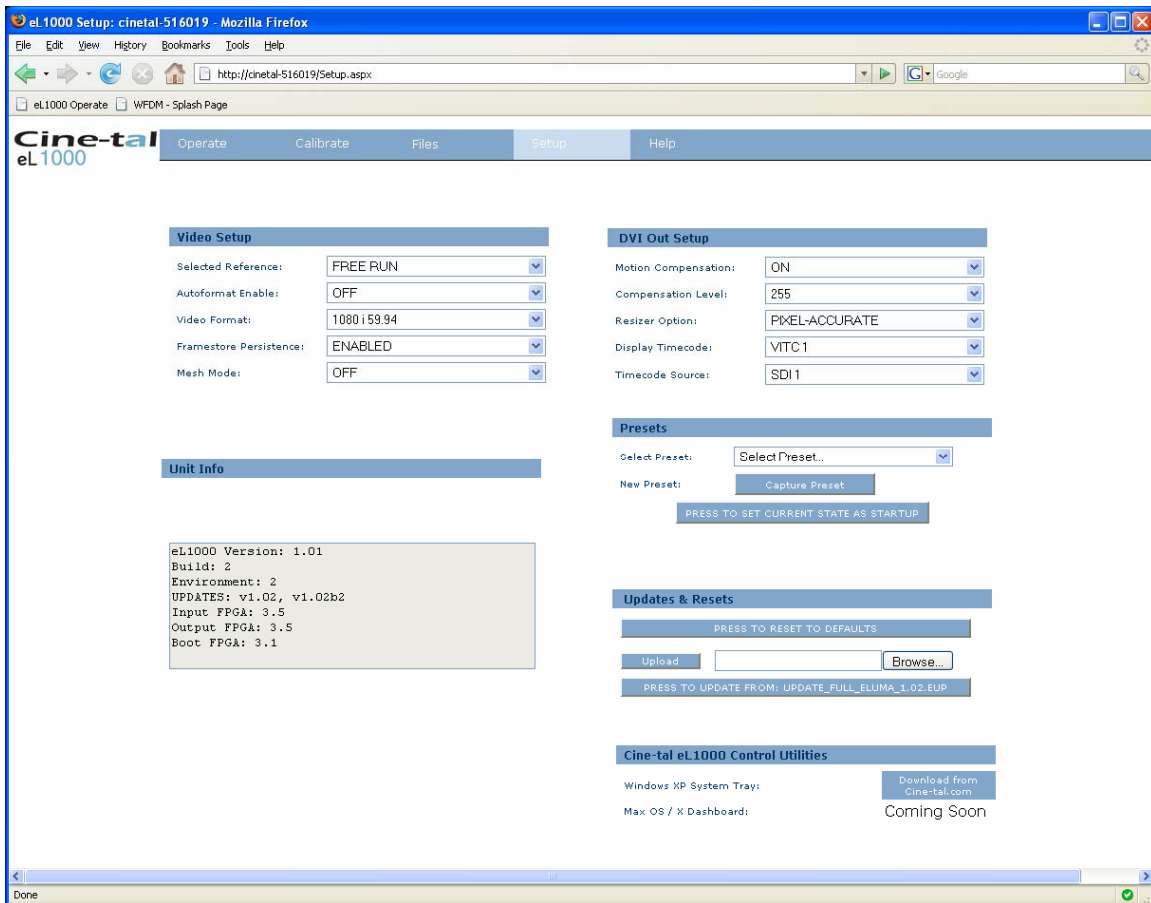


Once you have done this you will be prompted to name the new preset in a popup window:



Once you enter a name and press **ok**, the preset will be saved in the “Presets” folder on the [Files](#) page, and will also be available in the **Select Preset** pulldown.

Chapter 4: Setting up the System



The setup page allows you to set the video output parameters for the DVI and HDSDI outputs, gives unit information, set and recall presets for your eL 1000, perform software and firmware updates to the eL 1000, as well as provide links to Cine-tal control utilities (*networked control only*).

Video Setup: This pane allows you to make adjustments to the video inputs and outputs of the eL 1000. The **Reference Type** pulldown selects what type of input the video reference will be read from. Choices for reference source are: *Free Run*, *SDI Input*, and *Analog*. The **Selected Reference** pulldown allows you to select where the video reference will be taken from when SDI is selected on the **Reference Type** pulldown. Choices for **Selected Reference** are *SDI 1, 2, 3, and 4, and DVI input*. The **Framestore Persistence** pulldown allows for eL 1000 to keep a reference of what stills have been loaded into the slots of the Framestore and recall those stills into their slots upon every boot up of eL 1000. Enabling **Framestore Persistence** will decrease the amount of storage space available locally on the eL 1000 by up to 256MB, depending on the number of Frames persisted. Disabling **Framestore Persistence** will cause all slots of the Framestore to be cleared upon power cycling the unit.

Autoformat Enable toggles the ability for the outputs to automatically adjust to the video format of its selected source. The **Video Format** allows you to manually select the video format of the outputs and internal resources (note that it is assumed that all inputs to eL 1000 are of the same format and are synched. **Using asynchronous or sources of different formats may cause erratic behavior on downstream displays**). eL 1000 currently supports all known HD video formats. **Clock Frequency** allows you to manually adjust the clock frequency of the DVI output and internal resources between the clock speeds For HD and SD operations.

Unit Information: This pane will give information regarding the firmware of the eL 1000.

DVI Out Setup: This pane allows you to adjust several parameters of the DVI output. The **Motion Compensation** pulldown allows you to select the level of motion compensation that will be applied to the DVI output. Level choices range from 0 to 255, with 255 being the maximum amount of motion compensation available. The **Resizer Option** pulldown allows you to choose the scaling applied to the DVI output, with choices being “Pixel-accurate” and “Anamorphic 2:37 to 1”. When using the DVI output of the eL 1000, there are some formatting anomalies that should be taken into consideration:

eL1000

Release 1.01 – video format support tests

	HDSDI Out (1,2,3,4)	SDI out (1,2,3,4)	DVI Out 1920x1200 50-72P	DVI Out 1920 x 1080 50-72
HDSDI (1,2,3,4)	All		All	1080 59.94 1080 29.97 1080 60 1080 30
SDI (1,2,3,4)		All	All	All
DVI In 1920 x 1200@60 Hz	1080 30p (Center Cut)		1200 60p	1080 30p (Center Cut)
DVI In 1920 x 1080@ 60hz.	1080 30p		1200 60p (1080 Center Cut)	1080 60p

(1)1920 x 1200 @ 59.94 – 75 Hz based on input frame rate (either 2x or 3x of input frame rate)

(2) DVI Loop Through Mode will provide a calibrated DVI output matching the Input DVI video format

Due to some of the limitations of the DVI output and HD-SDI outputs, there are certain conversions that are necessary to implement in order to generate a stable output. The above chart outlines the conversions that take place when routing through some of the internal resources such as the 3D LUT processor.

Presets: This pane allows you to capture and select presets, as well as save your current settings as the startup configuration of your eL 1000. The **Select Preset** Pulldown will allow you to select from any of the Presets you have already captured. The **Capture Preset** button will open a prompt asking you to name your new preset. Once you have named the preset, a file will be generated in the “Presets” folder on the [Files](#) page. Any selectable setting of the eL 1000 is saved in the preset file. The **PRESS TO SET CURRENT STATE AS STARTUP** button will save the current settings of the eL 1000 as your default startup settings until another set of parameters is saved as the startup settings. (Note: Preset files are saved in a user-editable XML file format. If you will create a new preset, you can open an existing preset, alter the specific parameter(s) you wish to change, and save the file using a new name).

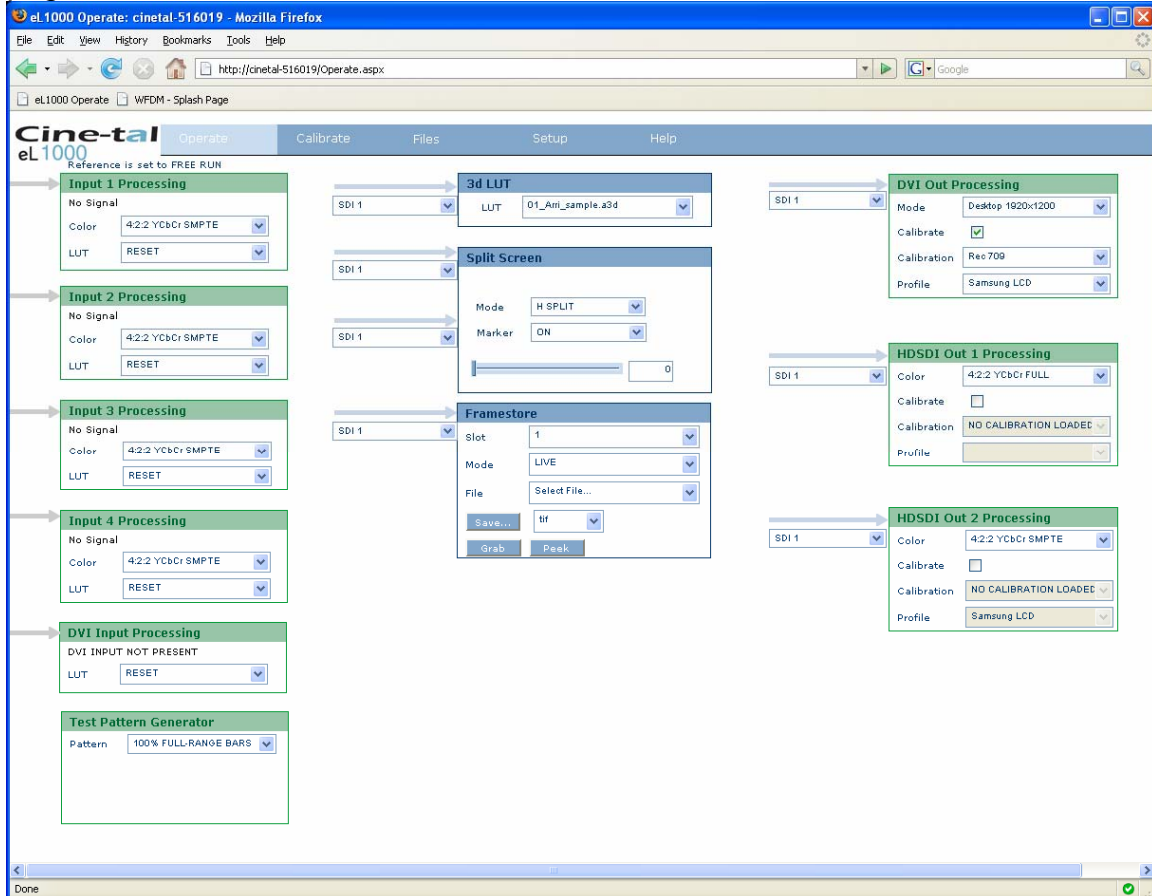
Updates & Resets: This pane allows you to reset the machine to its default settings, and search for and install updates to the eL 1000. Pressing the **PRESS TO RESET TO DEFAULTS** button will return the eL 1000 to the default settings, as defined in the “eL_defaults” preset file.

To perform an update, download the update file from www.cine-tal.com/downloads.htm, and save it to your local computer. Pressing the **Browse** button in the Update pane will open a file locator window. Select the eL 1000 update, and press the **Upload** button. This will transfer the updater from your local machine to the eL 1000. Finally click the **Update Now** button, and the update process will begin. Allow the eL 1000 to completely run the updater and power itself down. At that point the update is complete, and it is safe to reboot your eL 1000.

Note: Shutting off eL 1000 during an update can result in severe malfunctions. Please allow the update to run fully, and the unit to power itself down.

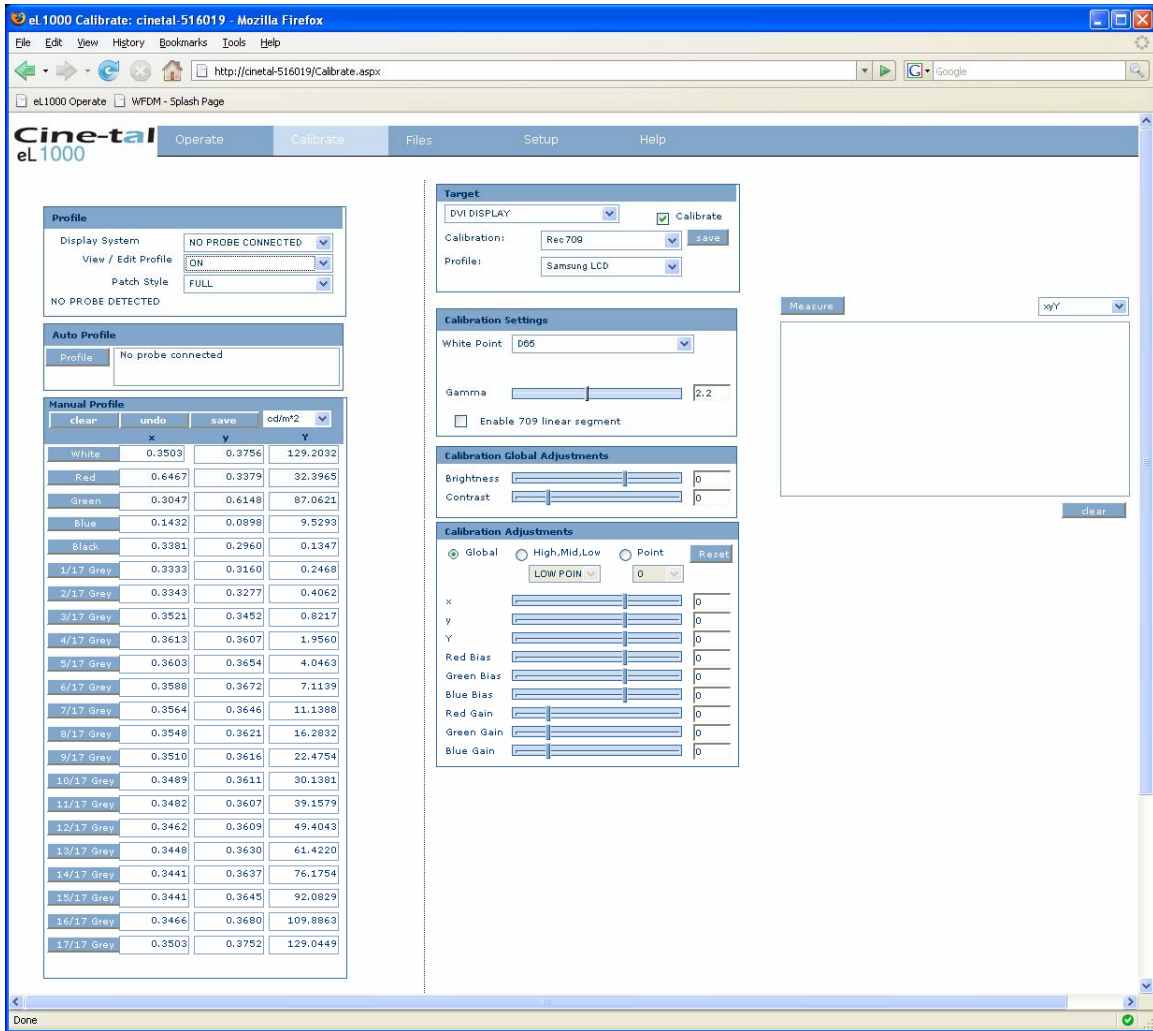
Chapter 5: Menu Overview

After accessing the eL 1000 via your web browser at http://cinetal-*****/ (where ***** is the last six digits of the serial number) you will see the following page:

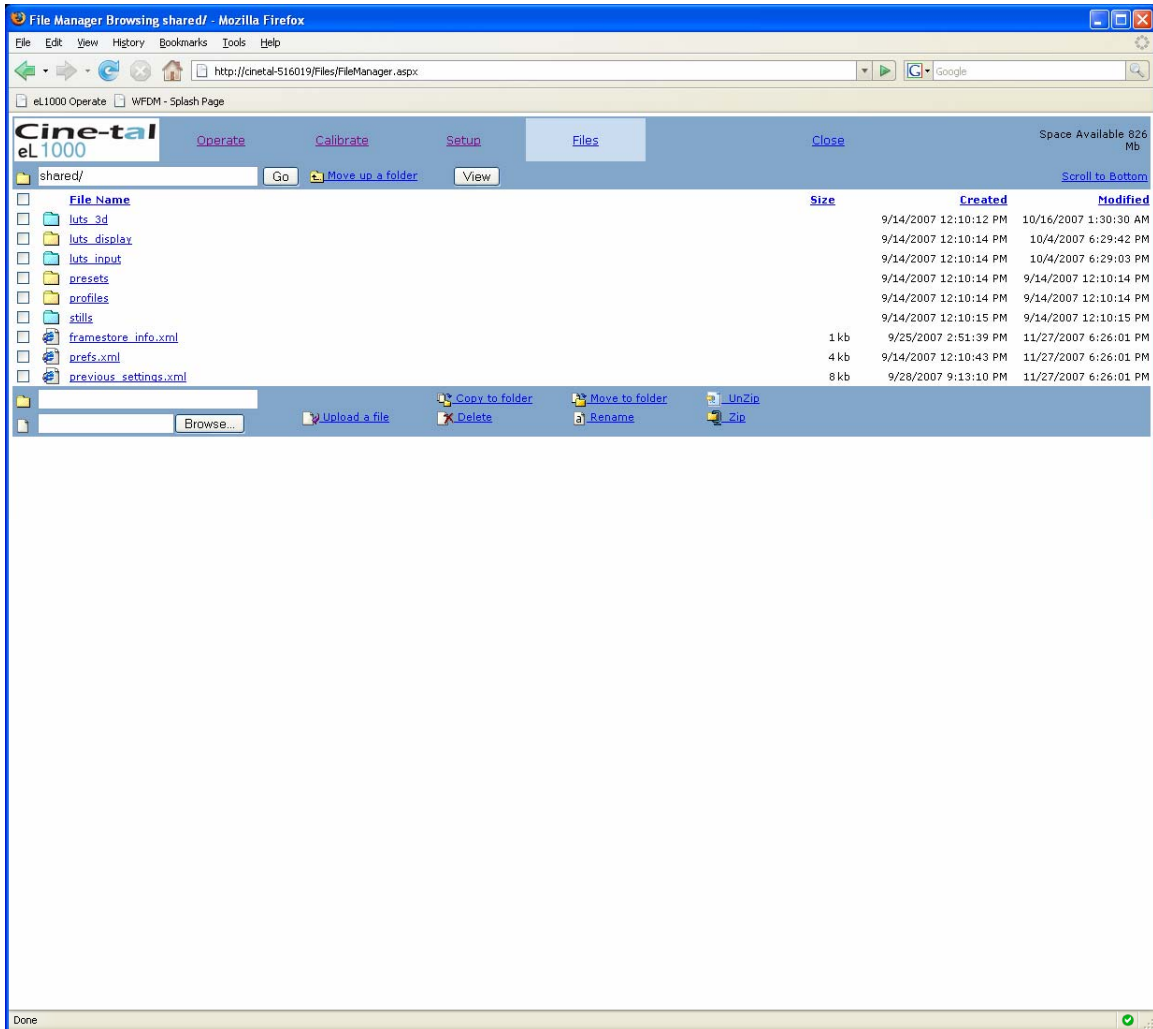


The tabs across the top of the web interface navigate to the different functional pages of the eL 1000:

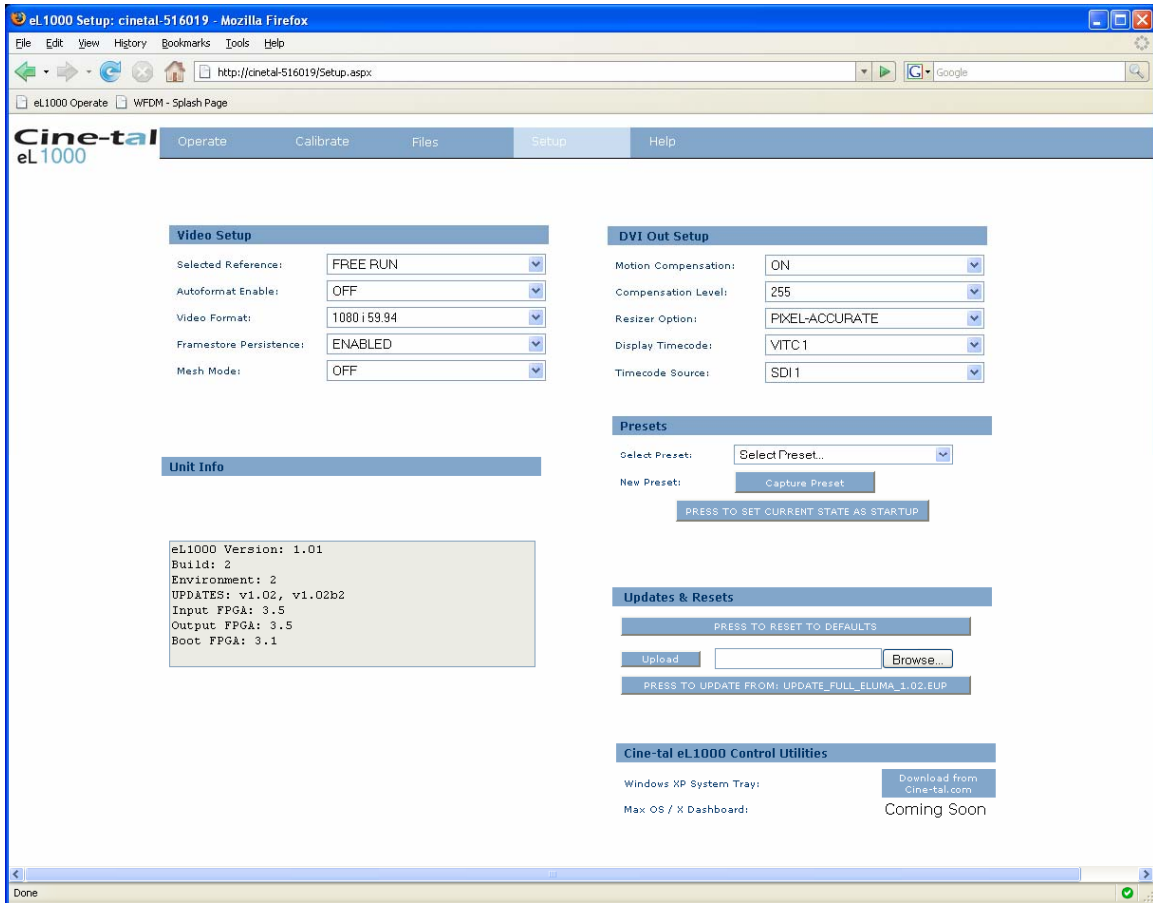
Operate: From this page you can control the major functions of the eL 1000, including Input LUTs, Test Pattern Generator, 3D LUT processing, Split Screen Generator, Framestore, Output Routing, and Calibration Application.



Calibrate: From this page you can control all of the calibration functions of the eL 1000, including display profiling, calibration selection, white point setting, calibration adjustments, and Measurement. Each output of the eL 1000 can be independently managed for color calibration, allowing you to drive up to three devices in a color calibrated work environment.



Files: This tab will bring up the above window. From this window you will be able to manage all the files stored locally on your eL 1000. From this page you can upload, download, zip, and unzip files in the 3D LUTs, Display LUTs, Input LUTs, Presets, Profiles, and Stills folders.

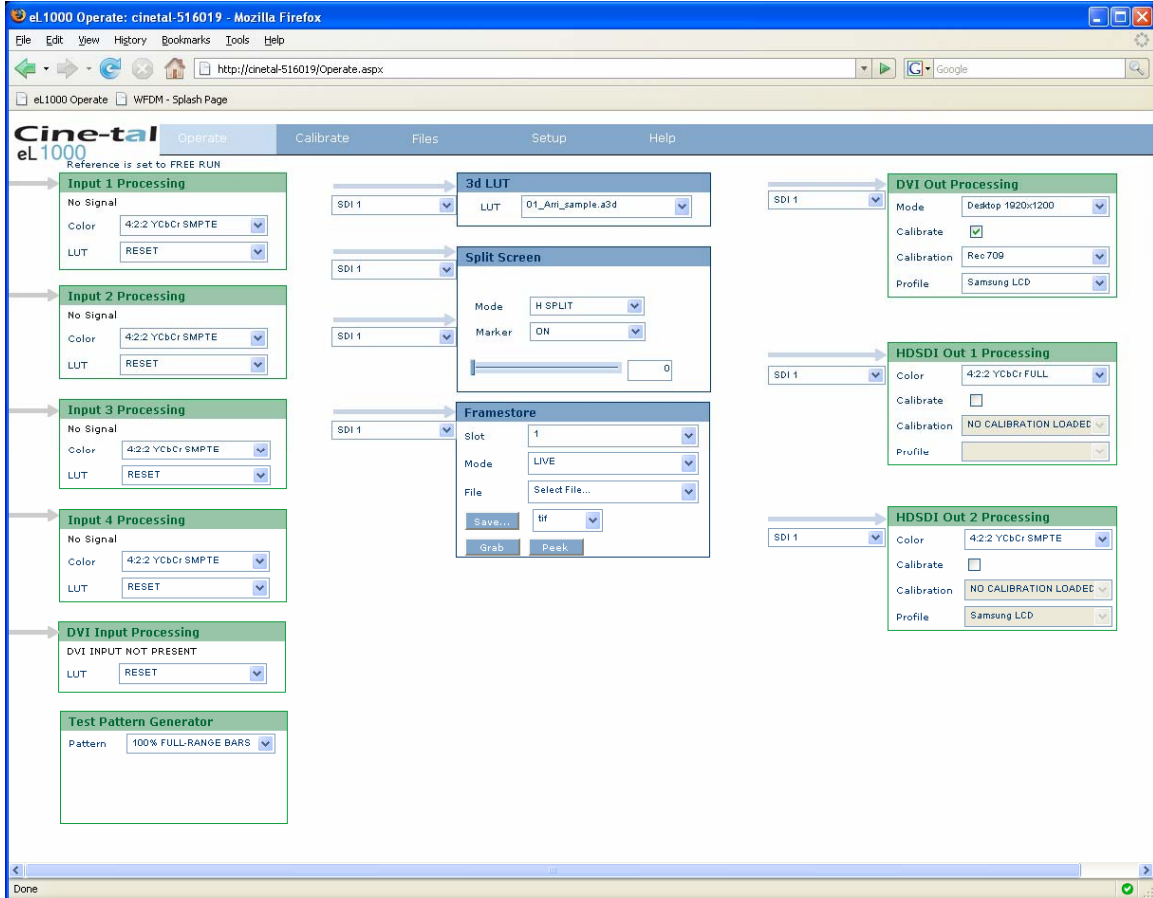


Setup: The setup tab will bring you to the above page, allowing you to adjust the video settings, toggle motion compensation and Resizer Options on the DVI output, access updates, and gives unit information.

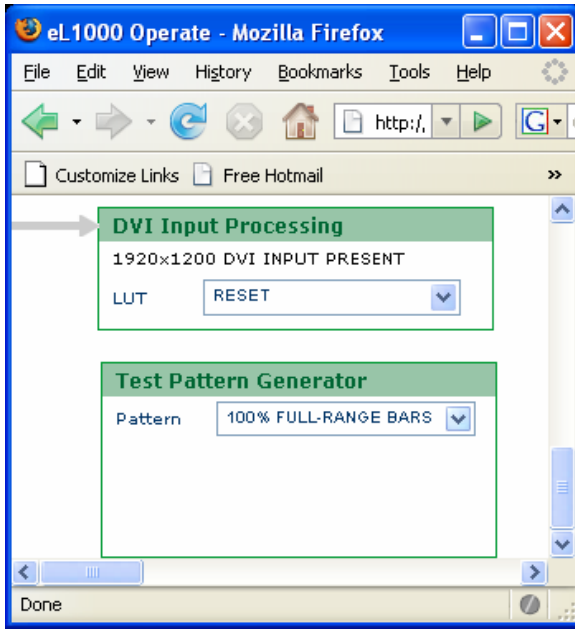
Chapter 6: Using your system

The eL 1000 will typically be controlled via the integrated web interface, with the majority of operations being controlled on either the Operate or Calibrate pages.

Operate Page:



Input * Processing: The input processing panes contain two pulldown menus. The **Color** menu allows you to select between 4:2:2 YCbCr SMPTE, Full, and P3 (DCI), 4:4:4 YCbCr Full and SMPTE, and 4:4:4 RGB Full and SMPTE, and SD 4:2:2 601 color spaces. The **LUT** menu allows you to select a Input LUT to be applied to the input. The Pulldown menu will be populated with the files contained in the Input_LUTs folder found on the [Files](#) page.

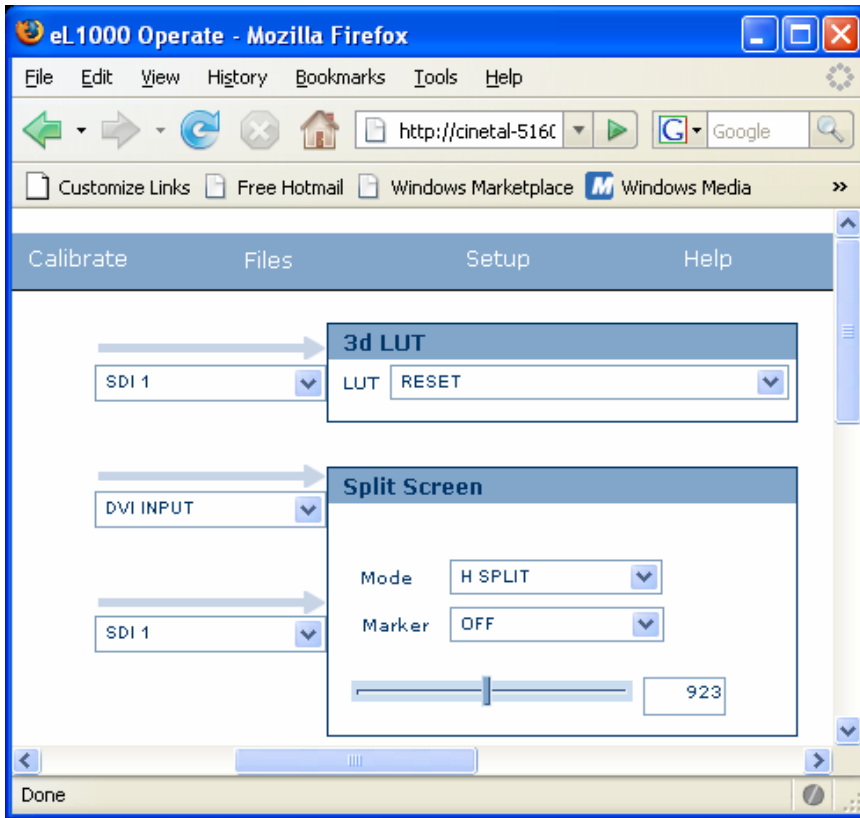


DVI Input Processing: The **LUT** menu allows you to select a Input LUT to be applied to the input. The Pulldown menu will be populated with the files contained in the Input_LUTs folder found on the [Files](#) page.

Note: The DVI input will automatically switch to a Dual-Link input when the SDI inputs are switched to Dual Link.

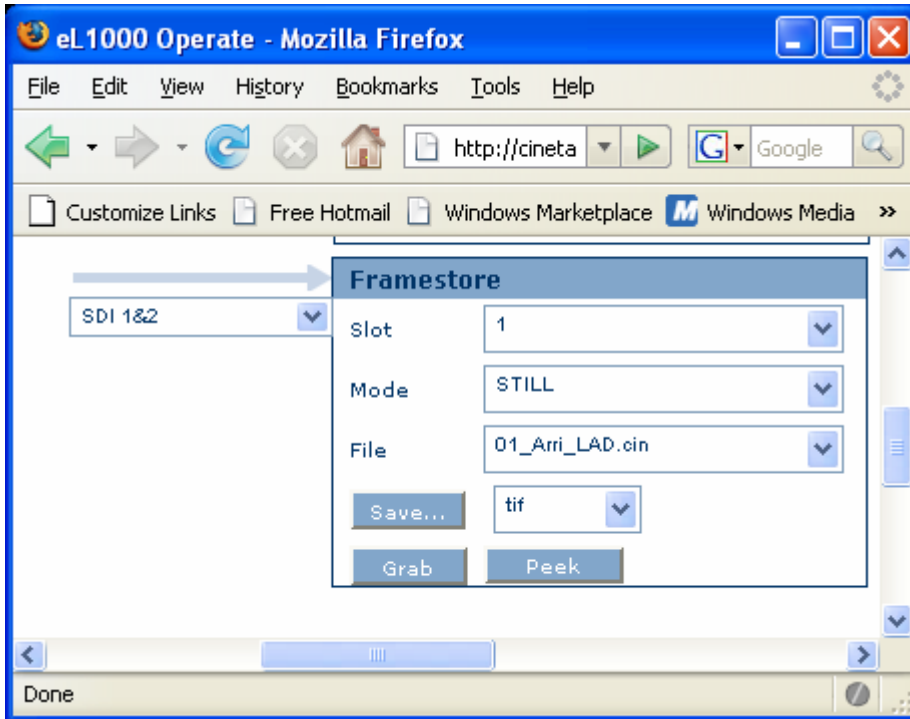
Test Pattern Generator: The pulldown menu in this pane will allow you to choose from any of the locally stored test patterns as the Test Pattern Generator's output. Locally stored test patterns include:

1. 8% GREY
2. 100% FULL-RANGE BARS
3. 75% FULL-RANGE BARS
4. 100% SMPTE-RANGE BARS
5. 75% SMPTE-RANGE BARS
6. LUMA FULL-RANGE RAMP
7. RED RAMP
8. GREEN RAMP
9. BLUE RAMP
10. LUMA LINEAR RAMP
11. RED LINEAR RAMP
12. GREEN LINEAR RAMP
13. BLUE LINEAR RAMP
14. BLUE - YELLOW RAMP
15. RED - CYAN RAMPCOMBINED COLOR RAMPS
16. 30 MHZ FREQUENCY SWEEP
17. 5, 10, 15, 20, 25, 30 MHZ MULTIBURST
18. PLUGE PATTERN
19. LUMA PULSE & BAR
20. LUMA TEN-STEP
21. LINE-END MARKER PATTERN
22. BLACK TEST BARS
23. SMPTE-RANGE BLACK TEST BARS
24. 100% RED
25. 100% GREEN
26. 100% BLUE
27. 100% WHITE
28. BLACK



3D LUT: This pane controls the output of the 3D LUT processor. The Pulldown to left of the pane allows you to select the source for the 3D LUT processor. The Pulldown menu inside the pane allows you to select a 3D LUT file stored locally on your eL 1000, accessible from the “3D LUTs” folder on the [Files](#) page. The Pulldown will be populated Once a LUT is selected in the Pulldown it will automatically be applied and sent downstream from the 3D LUT processor. To reset the LUT, simply select *Reset* in the pulldown menu.

Split Screen: This pane controls the output of the split screen generator. The upper Pulldown menu to the left of the pane allows you to select the first input to the splitscreen generator, while the lower Pulldown is to select the second input. The **Mode** Pulldown menu controls the style of split screen to be generated, allowing you to choose from *Horizontal*, *Horizontal Reversed*, *Vertical*, and *Vertical Reversed*. The **Marker** Pulldown toggles the split position marker *on* and *off*. The **Slider Bar** controls the split screen position.



Framestore: This pane controls the operations of the built-in Framestore function. The Pulldown to the left of the pane allows you to choose the input source for the Framestore.

The **Slot** Pulldown chooses which of the available 30 Framestore slots you wish to load to.

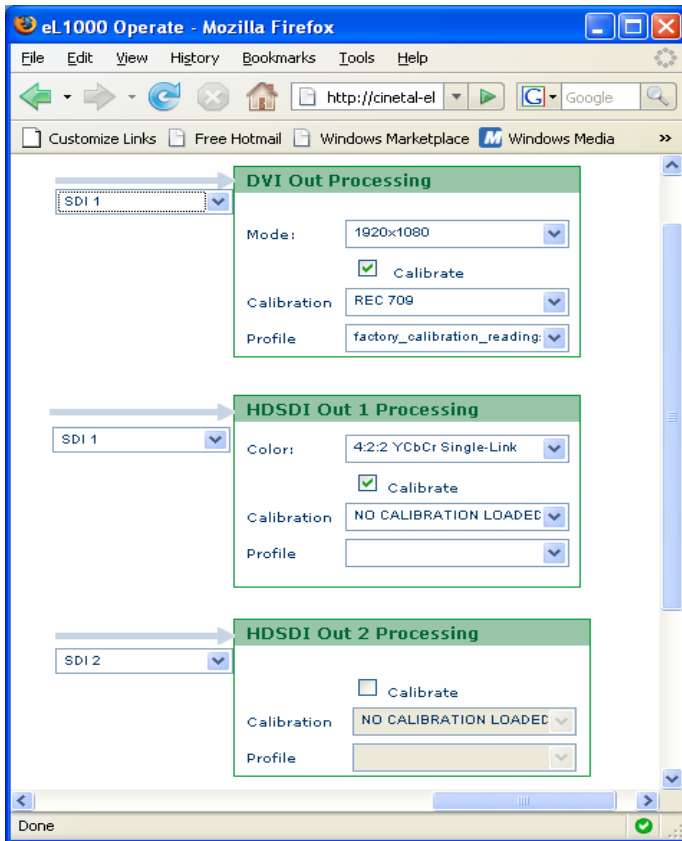
The **Mode** Pulldown toggles between *live* and *still* modes.

The **File** Pulldown allows you to choose which of the Still frame files stored locally on the eL 1000, accessible from the “Stills” folder on the [Files](#) page. Selecting a file in this pulldown will automatically toggle the **Mode** to *still* and load the selected Still into the designated Framestore slot.

The **Save** button and corresponding Pulldown allow you to choose the file format and save a still frame locally on the eL 1000. Choices of file formats include: *.bmp, .tif, .dpx, .png, .jpg*.

The **Grab** button will capture a frame from the source selected as the input of the Framestore, load it to the selected Framestore slot, and toggle the **Mode** to *still*. With **Framestore Persistence** selected to *Enabled* on the [Setup](#) page, unsaved stills will remain in their designated slot through a power cycle of the unit as “Unnamed”.

The **Peek** button will grab a still frame from the video source and display it in the preview pane located below the Framestore pane.



DVI Out Processing: This pane allows you to set the DVI output configurations. The Pulldown to the left of the pane chooses the source to be routed to the DVI output.

The **Mode** Pulldown allows you to select a *DVI VIDEO*, *Desktop 1920x1200*, *Desktop 1920x1080*, or *DVI IN LOOP THROUGH* video output format to be compatible with your attached monitor. The *DVI Video* selection is meant for video formats (i.e. 1080p30) to drive a video compliant DVI display, while the *Desktop* modes are meant to drive a computer monitor at 60 Hz. a *DVI IN LOOP THROUGH* passes a non-video DVI Input (such as Windows desktop output of a PC graphics card) directly through to the output. The *DVI IN LOOP THROUGH* cannot be routed to any of the internal resources or the HD-SDI Outputs.

The **Calibrate** checkbox, when checked, applies the calibration settings selected in the Pulldowns below to the DVI output. The **Calibration** Pulldown allows you to select the calibration target for the DVI output.

The **Profile** allows you to select the native response profile, stored in the “profiles” folder on the [Files](#) page, for the attached monitor. Please see the [Calibration](#) section of this manual for more details on calibrating outputs of the eL 1000.

HDSDI Out * Processing: These panes allow you to set the HDSDI output configurations.

The Pulldown to the left of the pane chooses the source to be routed to the HDSDI output.

The **Calibrate**” checkbox, when checked, applies the calibration settings selected in the Pulldowns below to the HDSDI output. The **Calibration** Pulldown allows you to select the calibration target for the HDSDI output. The **Profile** Pulldown allows you to select the native response profile, stored in the “profiles” folder on the Files page, for the attached monitor. Please see the [Calibration](#) section of this manual for more details on calibrating outputs of the eL 1000.

Calibrate Page:

The Calibrate Page can be reached by entering http://cine-tal-*****/calibrate.aspx into your web browser's URL bar. From this page you will be able to control the output calibration functions of the eL 1000.

The screenshot shows the 'eL1000 Calibrate' web application. The 'Manual Profile' section contains the following data table:

	x	y	Y
White	0.3503	0.3756	129.2032
Red	0.6467	0.3379	32.3965
Green	0.3047	0.6148	87.0621
Blue	0.1432	0.0898	9.5293
Black	0.3981	0.2960	0.1347
1/17 Grey	0.3339	0.3160	0.2469
2/17 Grey	0.3348	0.3277	0.4062
3/17 Grey	0.3521	0.3452	0.8217
4/17 Grey	0.3619	0.3607	1.9560
5/17 Grey	0.3603	0.3654	4.0463
6/17 Grey	0.3988	0.3672	7.1139
7/17 Grey	0.3564	0.3646	11.1388
8/17 Grey	0.3548	0.3621	16.2832
9/17 Grey	0.3510	0.3616	22.4754
10/17 Grey	0.3489	0.3611	30.1381
11/17 Grey	0.3482	0.3607	39.1579
12/17 Grey	0.3462	0.3609	49.4043
13/17 Grey	0.3448	0.3630	61.4220
14/17 Grey	0.3441	0.3637	76.1754
15/17 Grey	0.3441	0.3645	92.0829
16/17 Grey	0.3466	0.3680	109.8863
17/17 Grey	0.3503	0.3752	129.0449

Profile: The **Display System** Pulldown allows you to select the type of device to be profiled. This setting will adjust the way the attached calibration probe “reads” light, and is critical to achieving an accurate profile of the device. The **View/ Edit Profile** Pulldown toggles the Manual Profile Pane to be hidden or viewed. The **Patch Style** Pulldown allows you to select whether the entire display is used to display the calibration color patches (*full*), or only a small portion of the display (*patch*)

Auto Profile: With your calibration probe plugged into the USB port on the eL 1000 and the probe attached to the display you are attempting to profile, pressing the **Profile** button will begin the profiling sequence on the output you have selecting in the Target Pane. When the sequence is complete, the results will be displayed in the Manual Profile Pane.

Manual Profile: This pane will allow you to manually edit the profile selected in the Target Pane. Using this pane you will be able to make use of any probe you choose to use to measure the x,y,Y coordinates of the flat fields listed down the left edge of the pane rather than using the attached probe included with your eL 1000. The **Undo** button will clear any changes you have made since the profile was last saved. The **Save** button will save any changes that you have made to the profile. The Pulldown menu allows you to toggle the units in which Luminance is measured. Luminance can be measured in either *Candelas per Meter Squared (Nits)*, or in *Foot Lamberts*. The Spreadsheet is for entering the x,y,Y values of each of the solid fields listed on the buttons to the left. Pressing any of these buttons will display that corresponding flat field on the output selected in the Target Pane.

Target: This pane controls the calibration to be applied to the outputs of eL 1000. The top Pulldown selects which output the calibration is to be applied to. The **Calibrate** check box toggles the calibration *on* and *off* on the selected output. The **Calibration** Pulldown menu allows you to select the calibration that you would like output to conform to. Selecting *New Calibration* will open a dialogue box asking you to name the new calibration. The **Calibration** Pulldown menu is populated with the calibrations saved to the "luts_display" folder found on the [Files](#) page. The **Profile** pulldown allows you select the native display profile to be used/ edited in the calibration process. Selecting *New Profile* will open a dialogue box asking you to name the new profile. The **Profile** pulldown menu is populated with the profiles saved in the "Profiles" folder found on the [Files](#) page.

Calibration Settings: This pane allows you to make adjustments to the white point and gamma settings of the calibration selected in the Target pane. The **White Point** pulldown menu allows you to select from a range of standard white points, or select a custom correlated white point. Selecting *Custom Correlated White Point* will enable a slider that allows you to slide a cursor to select a white point, or manually enter a value in the field to the right of the slider. The **Gamma** slider allows you manipulate the gamma correction curve applied to the calibration. In addition to sliding the cursor you can enter your value manually in the field to the right of the slider. Double-clicking the **Gamma** label will reset the slider and value to the default position for the selected calibration.

Calibration Global Adjustments: This pane will allow you to make adjustments that will be applied across the entire response curve of the calibration. The **Brightness** and **Contrast** sliders will allow you to adjust the digitally emulated brightness and contrast settings of the selected calibration.

Calibration Adjustments: This pane allows you to make adjustments to the calibration selected in the Target pane. Adjustments can either be globally, to the high/mid/low points, or to the detailed calibration points. When either **high/mid/low points**, or **etailed calibration points** have been selected, use the corresponding activated pulldown menu to select which region of the calibration your adjustments will be applied to. The sliders can be used to make adjustments to the x,y,Y values, and red, green, and blue biases and gains (gain settings are only available for global settings). Double-clicking the label of the slider will reset that slider to the default position for the selected calibration. Values can also be entered manually into the field to the right of the slider.

Explanation of eL 1000 Calibration, Profiling, and Adjustments

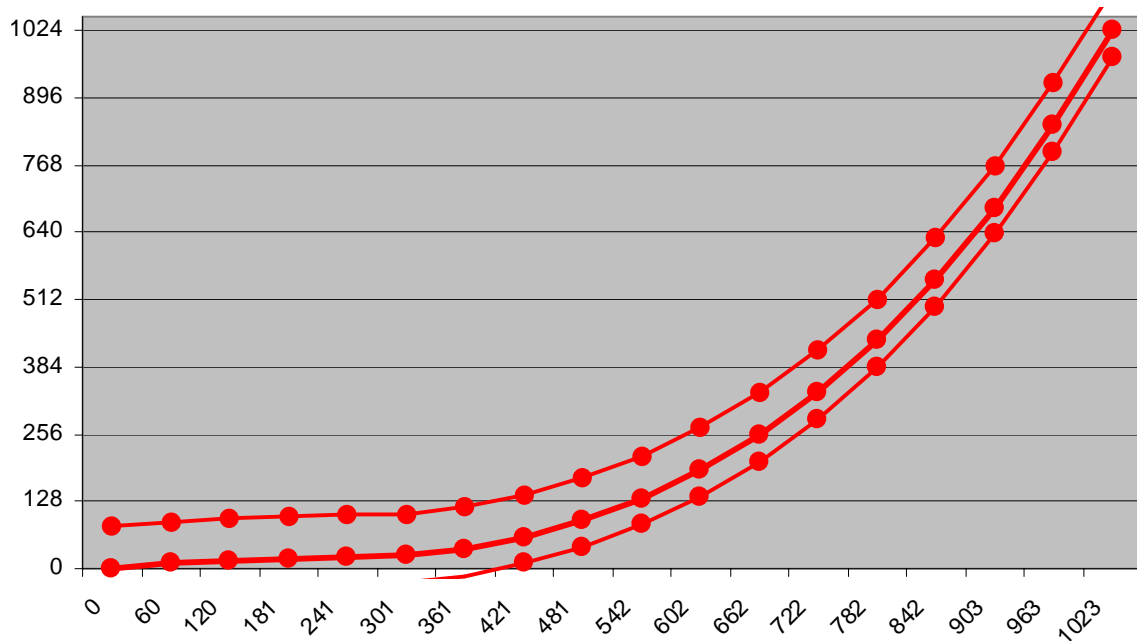
eL 1000 utilizes the **Profiles** and **Calibrations** in conjunction to create a 1d calibration Look Up Table (LUT) to calibrate its outputs. The **Profile** consists of a series of readings from an attached calibration probe of the output of a display when known parameters are fed to that display. These readings are what populate the manual profile table. By calculating the difference between the known parameters and what is actually outputted by the display, a native response **Profile** is generated for that device and can be saved in the eL 1000.

The **Calibration** is the target you are wishing to have output of the eL 1000 set to. This target will typically be a know standard, such as *Rec 709*, *DCI v1.0*, or *Linear*. These standards can be adjusted using the **Manual Calibration** pane, and saved a custom **Calibration** accessible under the “LUTs Display” folder on the [Files](#) page. These **Calibrations** are ideal settings, and can be distributed from one eL 1000 to another, enabling multiple units to hit the same target.

When making manual adjustments to the **Calibration**, there are several things to consider. First is adjustments to **Bias** and **Gain**. **Bias** works as an additive to the digital value of the selected color channel. Adjusting **Red Bias** +5 will add 5 to the Red value in your video data. These adjustments will typically be more noticeable in the Black and lower grey levels of the video.

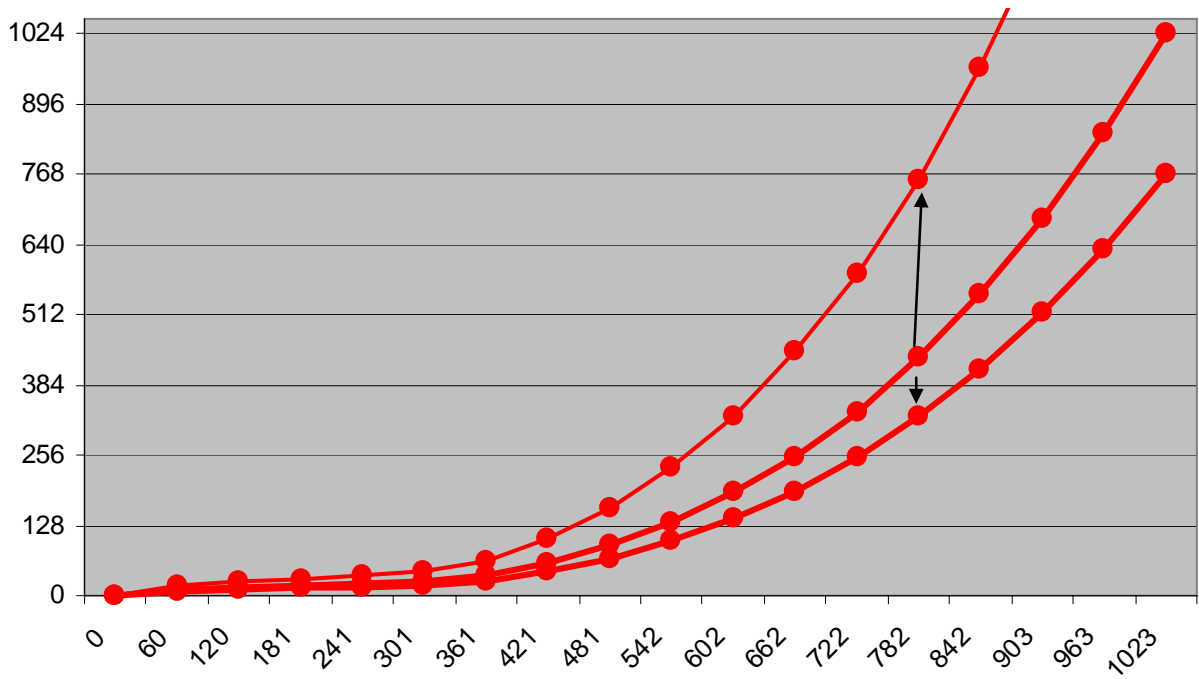
Bias Control

(Adder, changes Y position of curve)

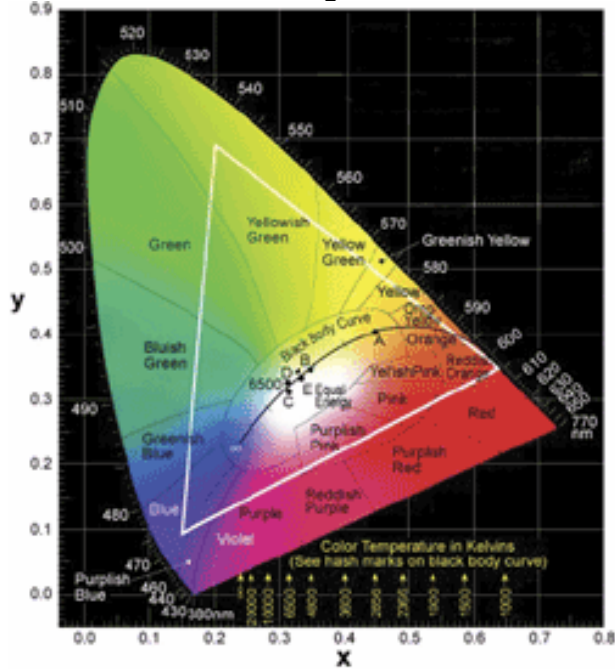


Gain works as a multiplier to the digital values in the color channel, and as such will be much more noticeable towards the upper end of your video Data.

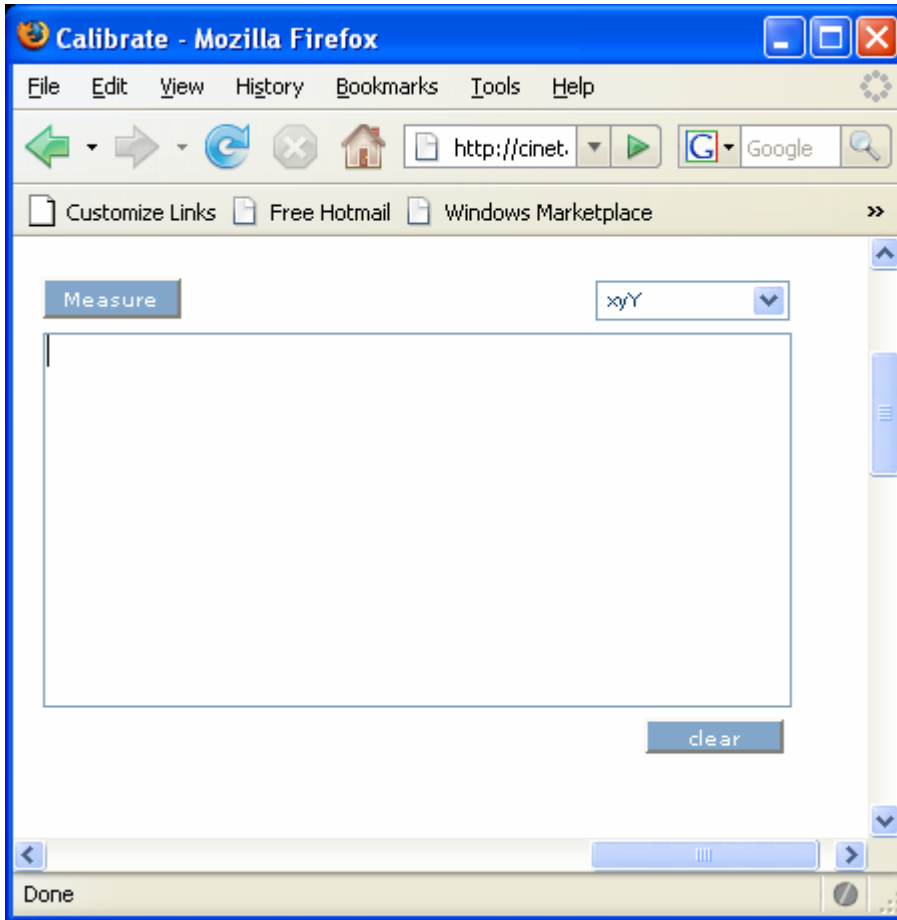
Gain Control
(Multiplier, changes slope of curve)



Adjustments to the x and y values of an individual point in the calibration will have an additive effect on the digital values of that point, manipulating the data to move the point either vertically (y) or horizontally (x) within the above CIE color chart. Adjustments to Y will have an additive effect to the digital values of all three color channels simultaneously. An adjustment of $Y+5$ will add 5 to the digital value of each the red, green, and blue channels of the video.

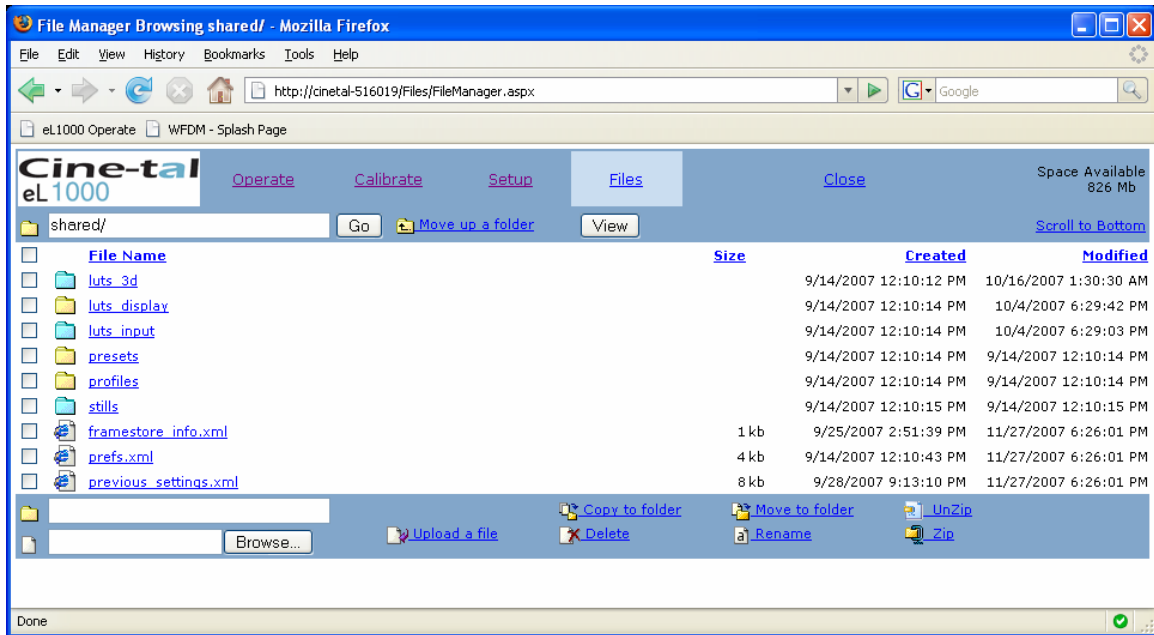


After adjustments have been made to compensate for slight differences in probe readings, a .correction file will be created in the “LUTs Display” folder on the [Files](#) page. This .correction file is specific to the local eL 1000 machine and the devices connected to it, and as a general practice should not be distributed from machine to machine.



Measure: This pane allows you take measurements of any display using the connected probe. Press the **Measure** button, and eL 1000 will take a reading and log the results in the field below. The Pulldown menu allows you to select the measurement parameters, choosing between x,y,Y and X,Y,Z. The readings will be logged in the below pane until the **Clear** button is pressed.

Files Page:



From this page you can manage all the files stored locally on the eL 1000. The default user Login is “el_user”, and the default password is “insecure”. These defaults can be changed on the Setup Page. From this page files can be uploaded and downloaded to/from eL 1000, new folders can be created, files deleted, and files compressed/uncompressed. If you have files that you do not wish to populate a pulldown menu on the Operate or Calibrate pages, place the files into a new folder within their respective folder, and those files will not appear in the pulldown menu.