DrasticScope

sdiScope Level
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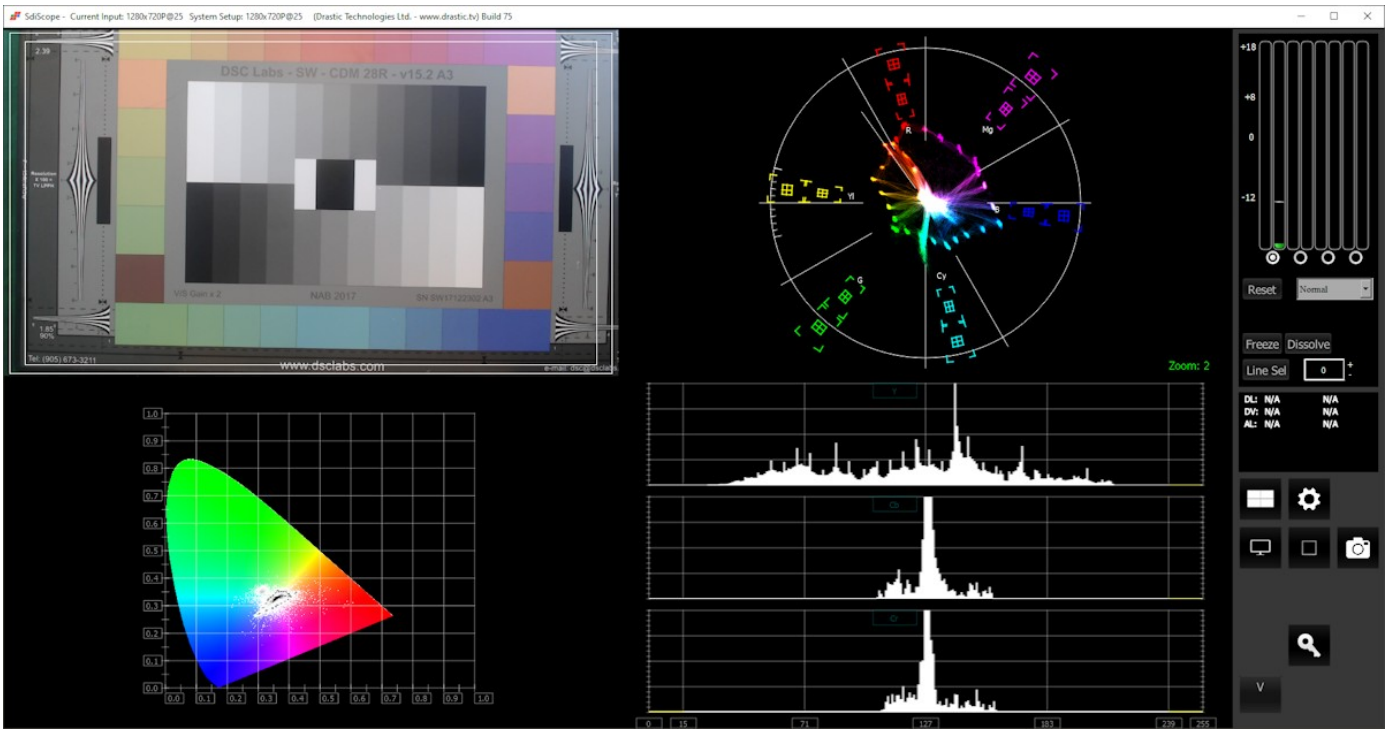
Drastic Technologies Ltd
523 The Queensway, Suite 201

Toronto, ON, M8V 1J7
Telephone: (416) 255-5636

About sdiScope



sdiScope is a basic signal analysis software, with waveform/vectorscope/chromaticity tools to measure input levels from your video signals. sdiScope is the entry level version of our DrasticScope software, for simple setups within SD/HD workflows.

DrasticScope can be licensed at the following levels to accommodate various workflows.

Free – you can download a free version for training and signal validation, basic setup. Features up to 2 scopes at a time, with time code, Picture View, YCbCr waveform, RGB waveform, and vectorscope. Sign provides access to the free version.

sdiScope – SD/HD analysis in a 4up layout, with a limited but slightly larger range of scopes, suitable for small productions such as house of worship or wedding videographers to confirm levels and calibrate their setup.

4KScope – this is the professional level, designed for post houses and production companies working with more extensive setups. Provides most of the important tools you would see on more expensive hardware scopes, including 6 Bar Gamut, Y/C Peak, Luma Peak, Channel Plot, as well as hex/decimal per pixel display, web GUI, REST API, area select, audio routing, and more.

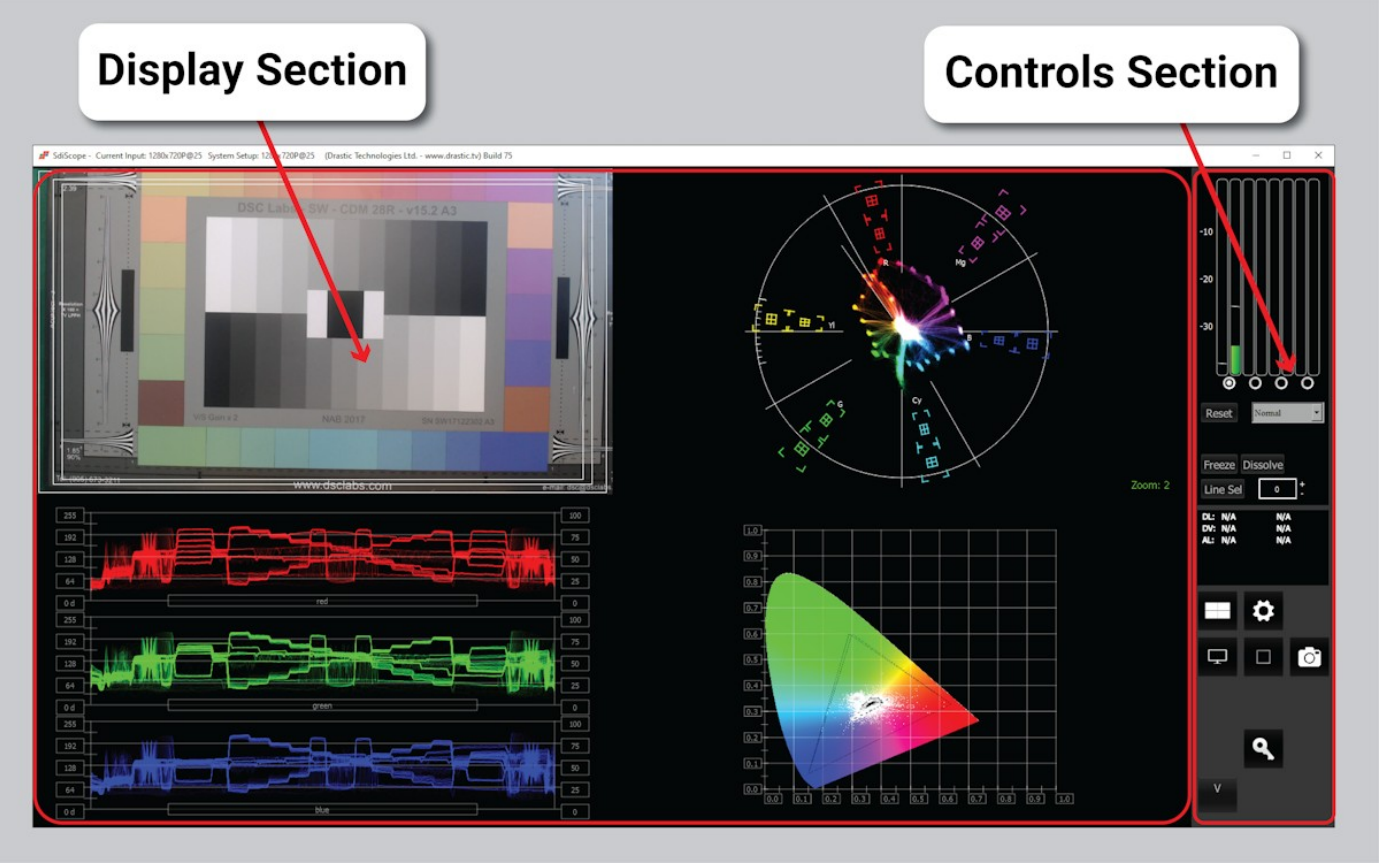
HDRScope – at this level we add features for high dynamic range and wide color gamut based workflows. MaxFALL/MaxCLL are measured for loudness, another 11 chromaticity triangles are provided for camera raw support, and support for 8K standards is added.

NetXScope – at the NetXScope level, everything is included, plus support for ST-2110 and analysis for specific IP stream types, including RTP, UDP, SRT, and RIST.

Reference

The reference section provides a detailed look at each of the elements in the **sdiScope** graphical user interface.

Main Interface Overview



Display section – to the left of the controls (the main portion of the GUI) is the screen where the various scopes, meters, or data will be displayed. Depending on the version licensed, DrasticScope features up to four different layouts: (1up) single, (2up) side by side, (4up) four quadrants, and (6up) six up (three across, two down). These layouts can be selected in the Scope Config window.

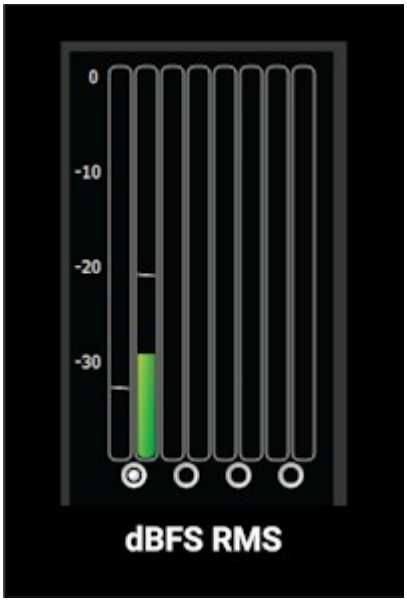
Controls section – The panel on the right with the audio controls, status display, and access buttons is the Controls section. Following are details for the Controls section.

Note: controls that have not been licensed will be grayed out, and will provide a mini preview of the unlicensed feature, unless the user selects the **Hide Unavailable Controls** option. Below are the controls with the unavailable options grayed out:

Here are the controls with Hide Unavailable Controls selected:

The following document shows a licensed version, equivalent to the sdiScope level.

Audio Controls and Displays



Audio display and pair selectors – At the top of the Controls section there are a set of audio meters. Licensing provides the following audio meters:

Free	sdiScope	4KScope	HDRScope	NetXScope
2 audio meters, dBFS	up to 8 audio meters, dBFS, audio pair selector buttons	up to 16 audio meters, dBFS, dBu EBU R68 (+18), dBu EBU R68 (0), dBu EBU PPM, dBu BBC PPM, LUFS -23 EBU 9, LKFS -24 US 9, audio pair selector buttons		

The buttons just below the dBFS and dBu meters allow the user to select between audio pairs for monitoring.

sdiScope supports:

- dBFS RMS - decibels relative to Full Scale, root mean squared

Hold Peak/RMS

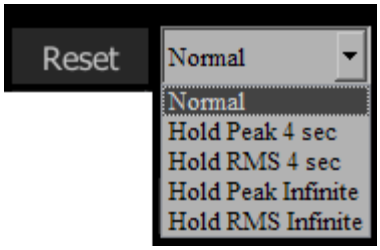
Hold Peak/RMS is added at the sdiScope level.

Free	sdiScope	4KScope	HDRScope	NetXScope
	Hold Peak/RMS			

Hold Peak/RMS – Just under the audio pair selector buttons there is a reset button and a pulldown menu for options to hold the peak audio level. Hold Peak/RMS is not supported in the Free version.

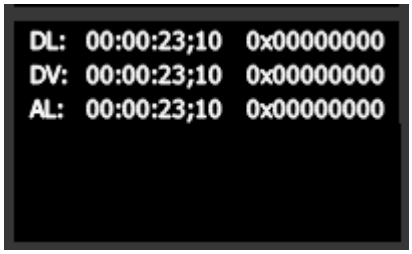
The following options are available:

- **Normal** – allow Peak and RMS to range freely with no hold
- **Hold Peak 4 sec** – hold the peak (the little white line in the audio level, typically near the top) for 4 seconds
- **Hold RMS 4 sec** – hold the RMS (the main audio level, green near the bottom and red at the top if the signal is too high) for 4 seconds
- **Hold Peak Infinite** – hold the Peak at its highest level and leave it there
- **Hold RMS Infinite** – hold the RMS at its highest level and leave it there



These values can be held for either 4 seconds, or frozen (Infinite Hold), or not held. A **Reset** button exists to clear any Peak/RMS values to refresh the display for a new measurement.

Status Display



Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
DL, DV, AL		DL, DV, AL, Closed Captions, VPID, Ref input, Vid standard		

Status Display – the sdiScope Status display shows time code (where present) for:

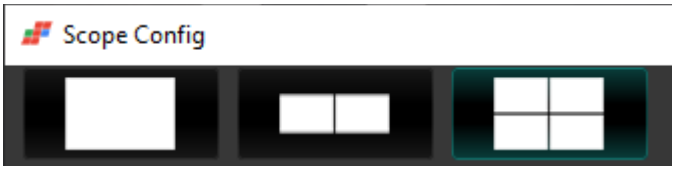
- RP-188 L SDI inputs
- RP-188 V SDI inputs
- Analog SMPTE time code input

Scopes Layout and Setup

Scope Setup button **–** The Scope Setup button in the Controls section opens the Scope Config window, which allows the user to configure how many scopes are displayed, to switch between scopes, and to set up each particular scope.

Layout Options

When you press the Setup button the Scopes config window opens up. At the top of the window there are four layout options. Select the layout that suits your workflow:

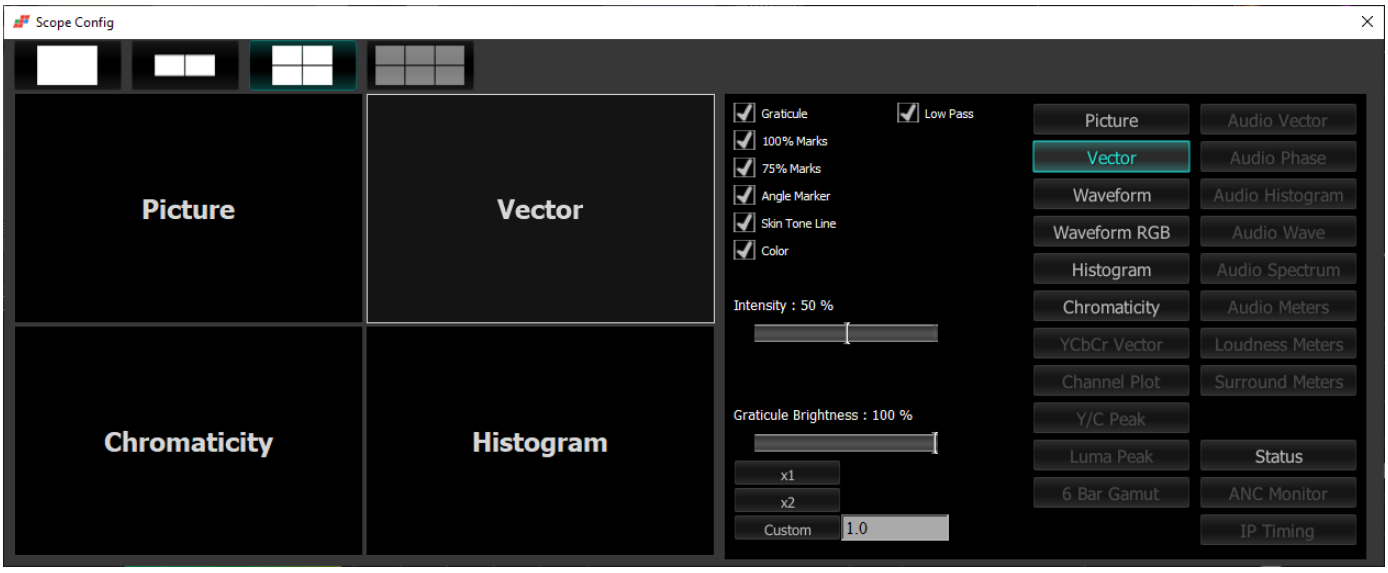


From left to right, the choices are: 1 scope (single), 2 scopes (side by side), 4 scopes (2 x 2 grid), or 6 scopes (two rows of three scopes).

Feature support by version:

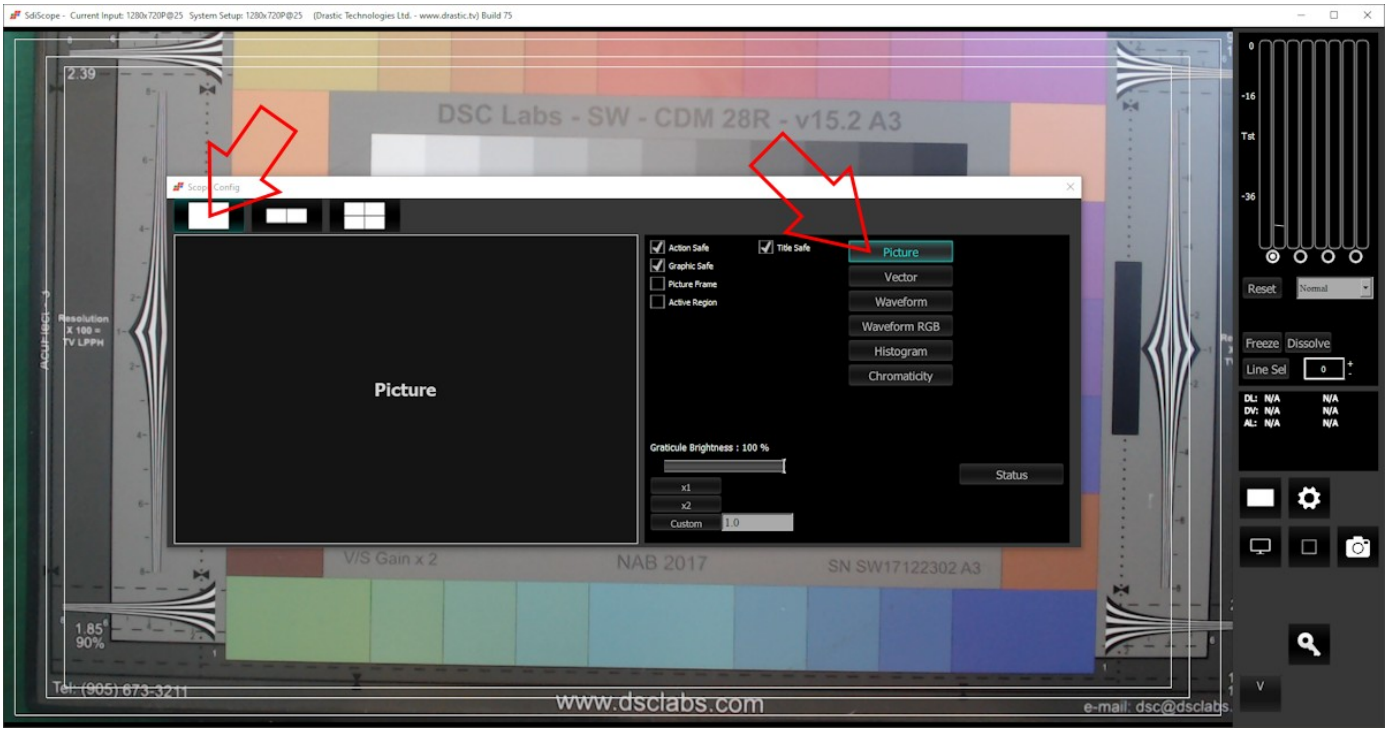
Free	sdiScope	4KScope	HDRScope	NetXScope
Up to 2 scopes	Up to 4 scopes	Up to 6 scopes		

Here is the scopes setup menu with the unavailable controls grayed out. These may be removed using the **Hide Unavailable Controls** checkbox in the configuration.



Single Scope Layout

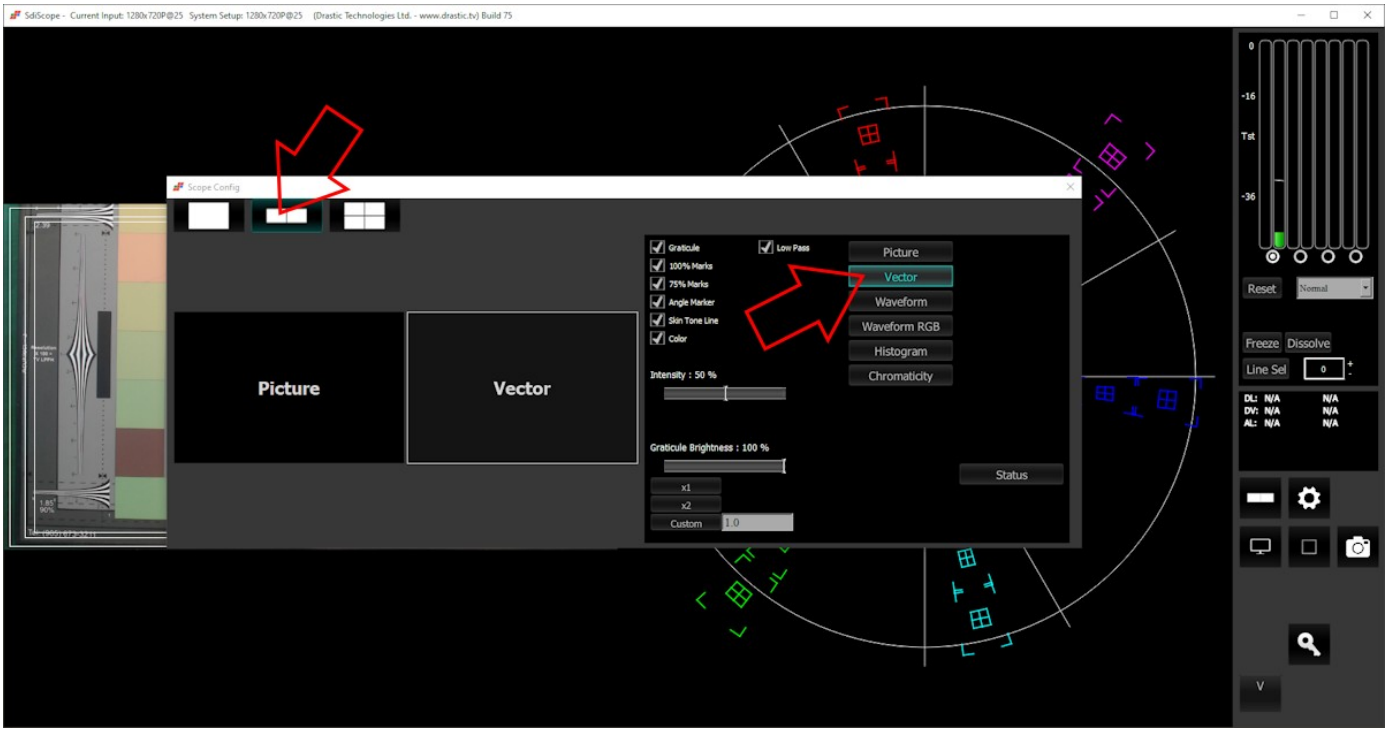
A single scope layout has been selected. The 1up layout is supported in all versions.



The arrow on the left shows the button used to select the single scope layout. The example shown displays the selection of the picture view. The arrow on the right shows the button used to select the picture view.

Two Scopes Layout

The two scopes layout has been selected. The 2up layout is supported in all versions.

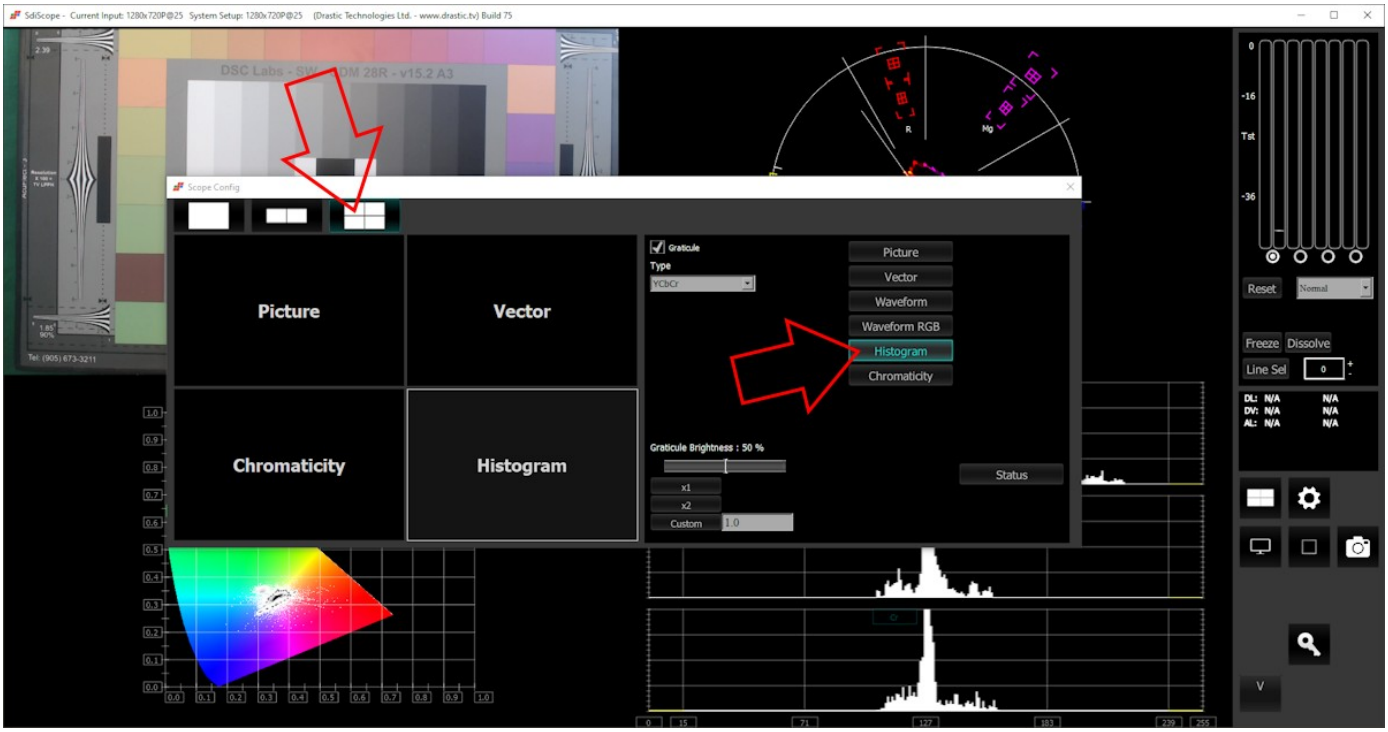


The arrow on the left shows the button used to select the two scopes layout. The example shown features the picture view and the vectorscope. The arrow on the right shows the button used to select the vectorscope.

To change which scope appears in a panel, click on it and use the selection buttons on the right to choose the scope. For example if you would like a waveform monitor on the left panel, you would click on the left panel, and click on the appropriate waveform button.

Four Scopes Layout

The four scopes layout has been selected. Note that this layout is not available in the Free version.



The arrow on the left shows the button used to select the four scopes layout. The example shown features the picture view, the vectorscope, the chromaticity, and the histogram. The arrow on the right shows the button being used to select the histogram.

To change which scope appears in a panel, click on it and use the selection buttons on the right to choose the scope. For example if you would like a waveform monitor on the lower left panel, you would click on the left panel, and click on the appropriate waveform button.

Picture View

To set up the Picture view, press the **Scope Config** button. This opens the Scope Config window. Click on the **Picture** button on the right. There are a number of options to set up the picture view:

Feature support by version:

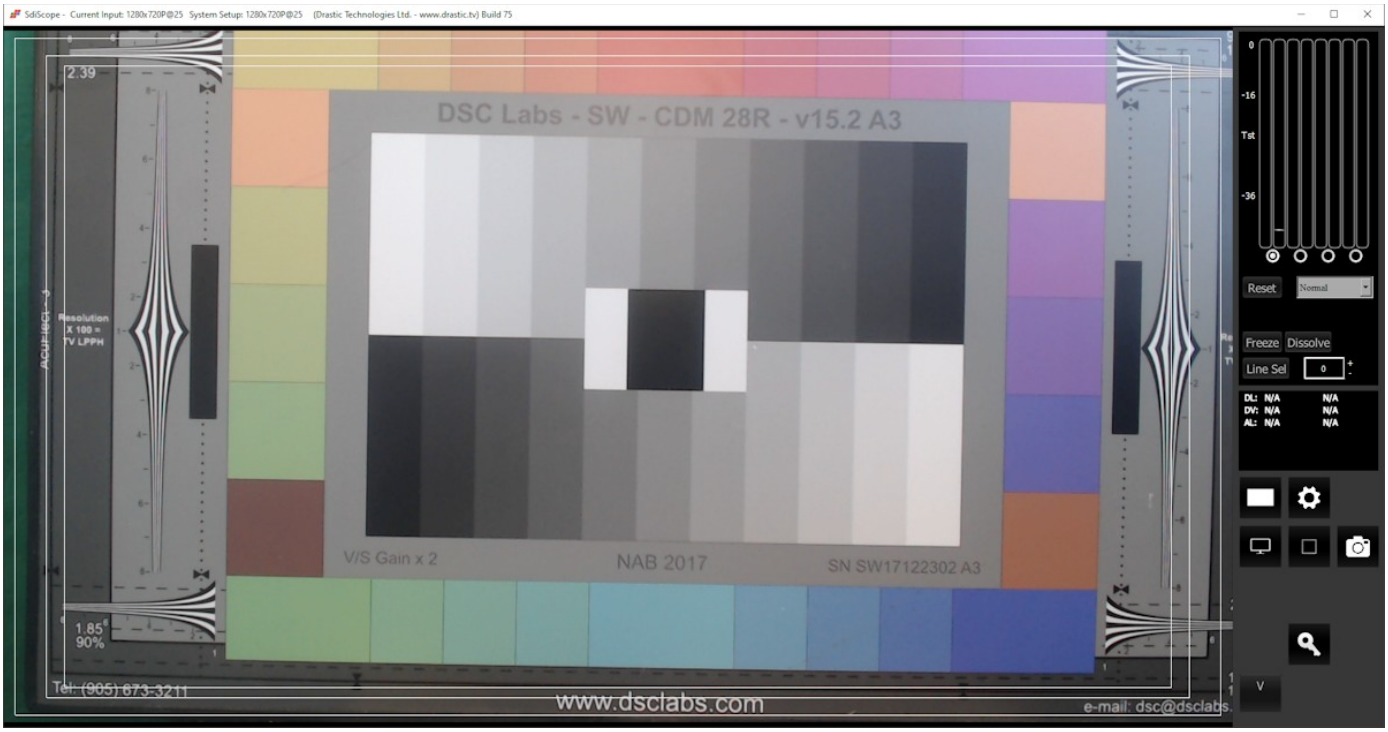
Free	sdiScope	4KScope	HDRScope	NetXScope
Picture	Picture, Action Safe, Title Safe, Graphic Safe, Picture Frame, Active Region graticules			

Action Safe checkbox – when selected, the Action Safe graticule is displayed over the video output.
Title Safe checkbox – when selected, the Title Safe graticule is displayed over the video output.
Graphic Safe checkbox – when selected, the Graphic Safe graticule is displayed over the video output.
Picture Frame checkbox – when selected, the Picture Frame graticule is displayed over the video output.
Active Region checkbox – when selected, the Active region graticule is displayed over the video output.
Graticule Brightness slider – Moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.
x1 button – clicking this button sets the display to standard size
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

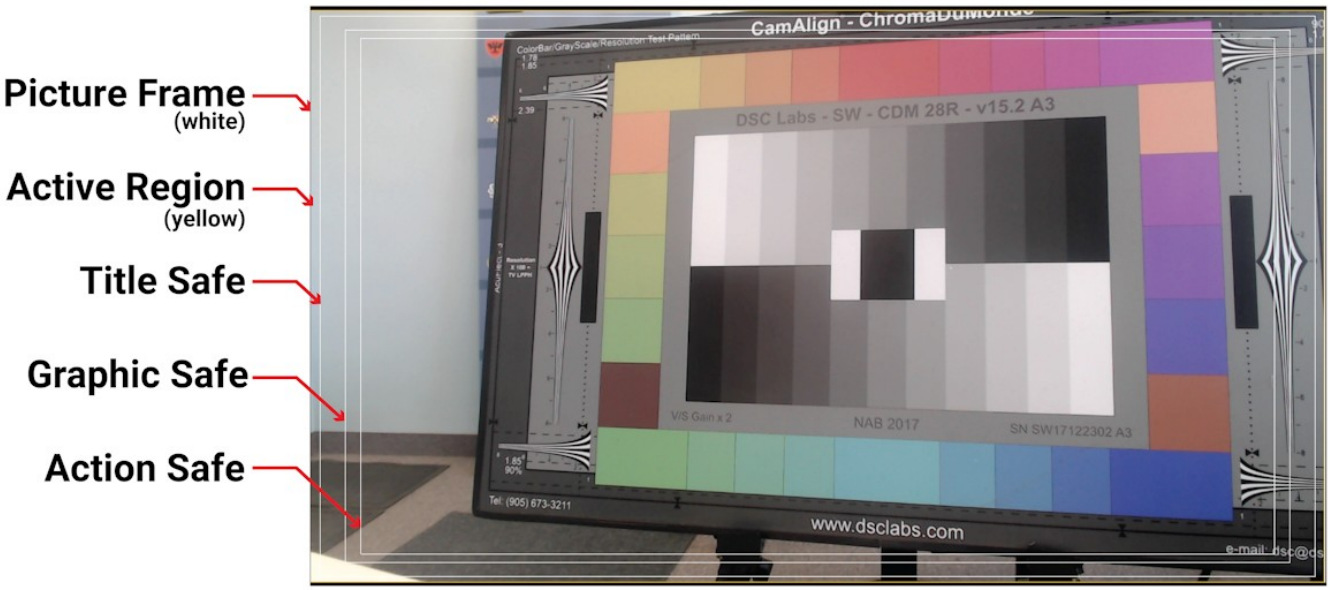
Pressing the x in the upper right corner will close the Scope Config window.

Here is the Picture view.



The Picture view shows the video signal, to confirm the source is correct and to display time code location.

Graticules

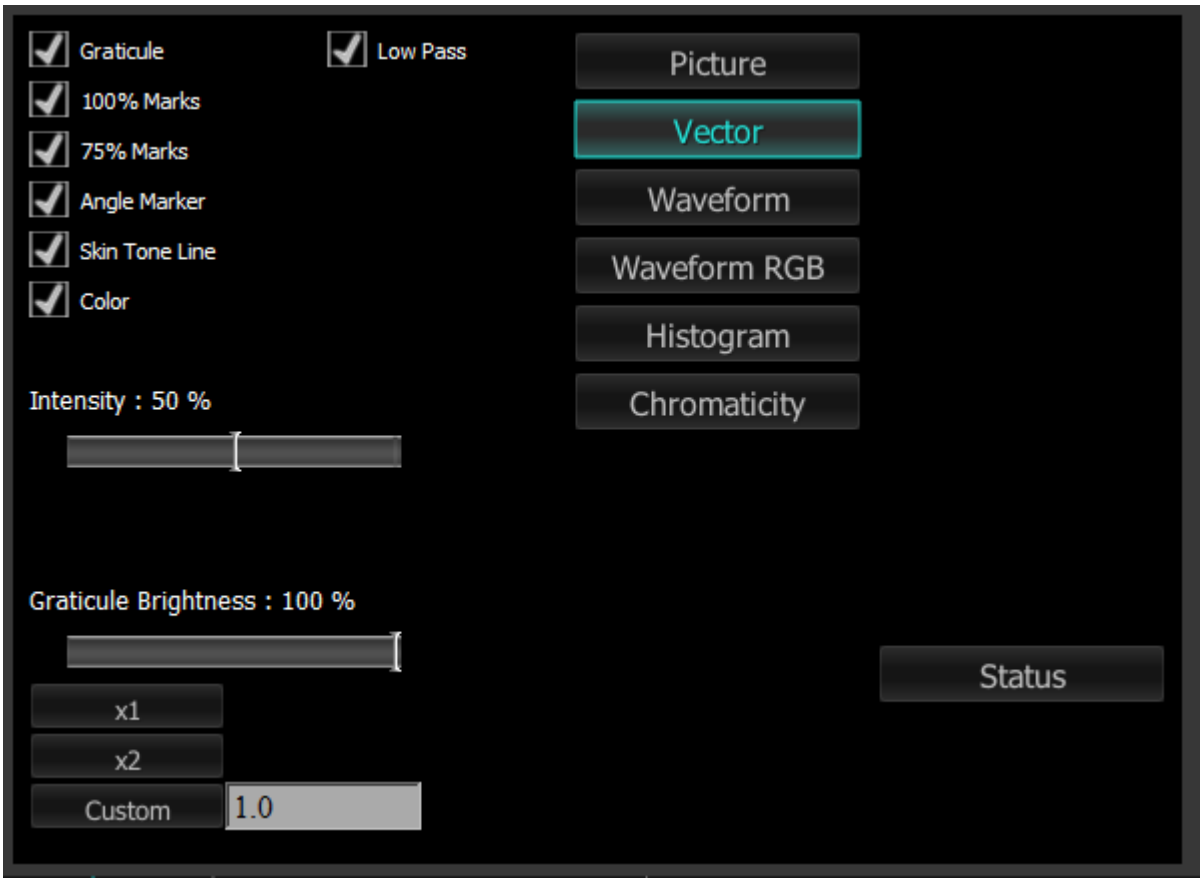


Here are the Action Safe, Title Safe, Graphic Safe, Picture Safe, and Active Region graticules.

Vectorscope

Vectorscope Setup

To set up the vectorscope, press the **Scope Config** button. This opens the Scope Config window. Click on the **Vector** button on the right. There are a number of options to set up the vectorscope:



Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
Vectorscope Graticule, 100%, 75%, Angle Marker, Intensity	Vectorscope Graticule, 100%, 75%, Angle Marker, Intensity, Skin Tone line, Color, Low Pass			

Graticule checkbox – when selected, the graticule is laid over the Vectorscope. The brightness of the Graticule may be adjusted using the **Graticule Brightness** slider described below.
100% Marks checkbox – when selected, the 100% Marks are displayed over the Vectorscope
75% Marks checkbox - when selected, the 75% Marks are displayed over the Vectorscope
Angle Marker checkbox - when selected, the Angle Marker is displayed over the Vectorscope
Skin Tone Line checkbox - when selected, the Skin Tone Line is displayed over the Vectorscope
Color checkbox – when selected, the lines, regions, and points of the signal in the vectorscope are drawn in their respective colors.

Low Pass checkbox – when selected, smooth the scope with a 1/3 filter to remove single pixel anomalies.

Intensity slider – Moving the Intensity slider brightens or dims the display of the video signal through the Vectorscope. The current setting is displayed above the slider, as a percentage, 0% providing no display and 100% being maximum intensity.

Graticule Brightness slider - Moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.

x1 button – clicking this button sets the display to standard size

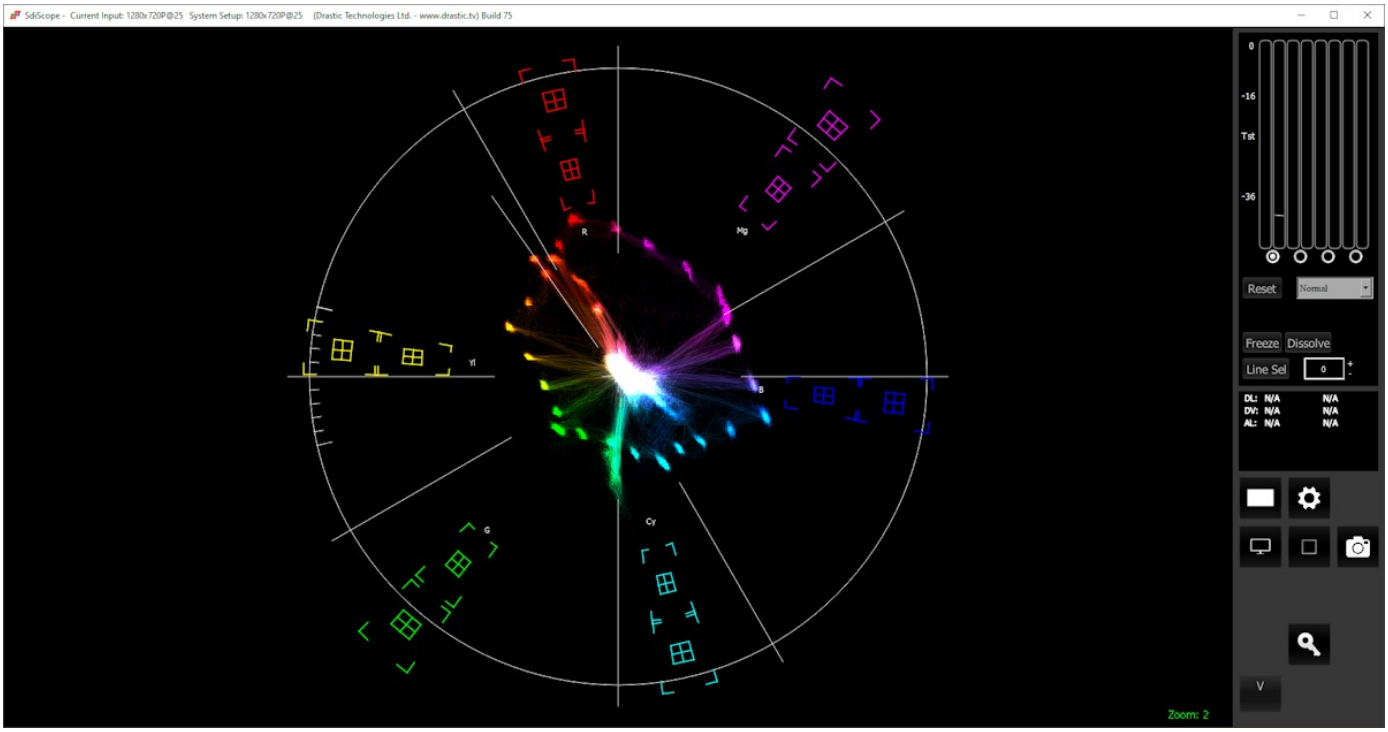
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

Vectorscope Window

Here is the Vectorscope.



The **Vectorscope** displays a traditional Cb by Cr X-Y display with overlaid reference graticule. Color accurate graticules automatically switch between SD and HD color spaces. The markers include color points (for standard bar checks) at 75% and 100% saturation. All the standard points are boxed; red, magenta, blue, cyan, green and yellow. A skin tone/flesh line is provided to allow for easy hue adjustment as well as standard diagonals.

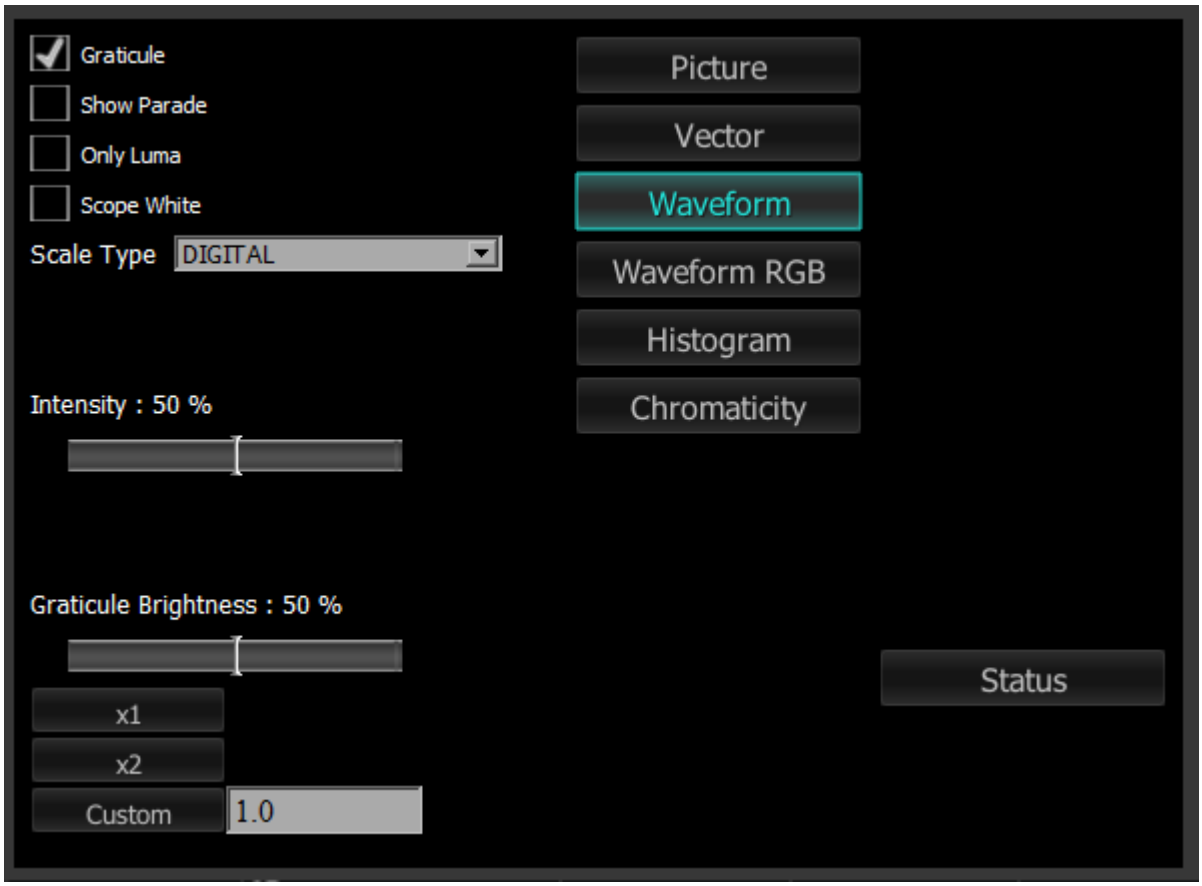
At all times a minimum and maximum value for each of the channels (Y, Cr and Cb) is displayed in 10 bit mode (0-1023). The color of the text for each channel indicates the following: in range (green), out of range but legal (yellow) and illegal/sync values (red).

For single link 8 and 10 bit YCbCr signals, there is no color processing involved. For dual link 4:4:4 RGB signals, the equivalent Cb and Cr are calculated to create the display.

Waveform YCbCr

Waveform YCbCr Setup

To set up the Waveform YCbCr, press the **Scope Config** button. This opens the Scope Config window. Click on the **Waveform** button on the right. There are a number of options to set up the waveform:

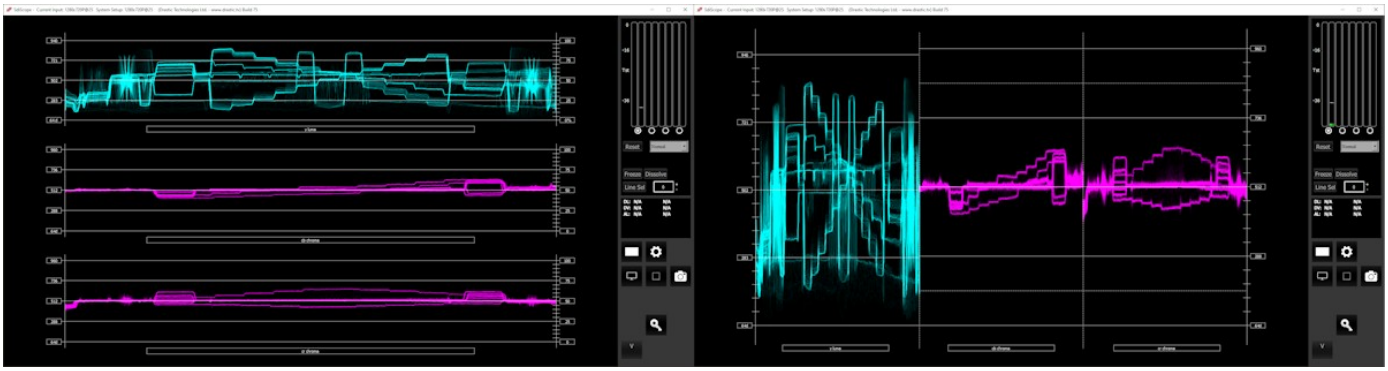


Feature support by version:

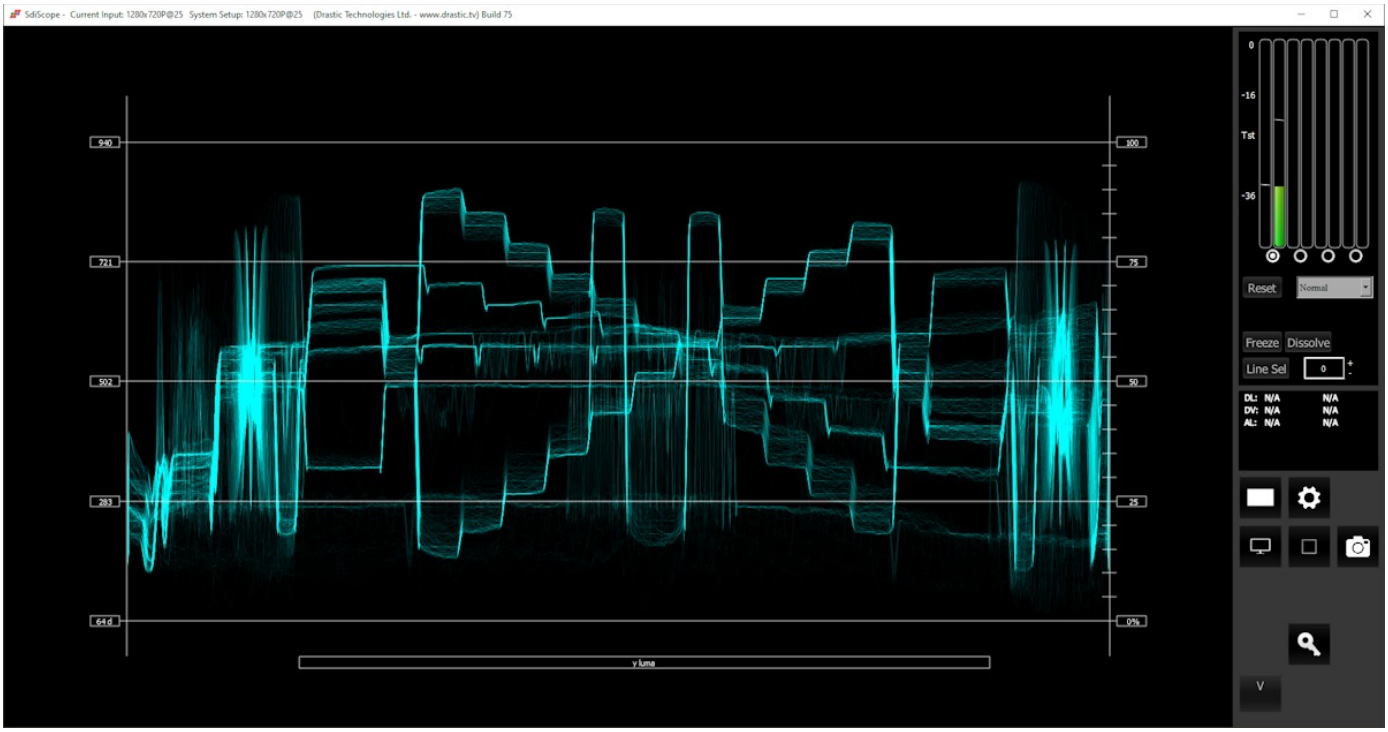
Free	sdiScope	4KScope	HDRScope	NetXScope
YCbCr Waveform stacked, parade, intensity, scope white, scale type		YCbCr Waveform stacked, parade, intensity, scope white, scale type, low pass, luma only, YCbCr Waveform Overlay, High/Low	YCbCr Waveform stacked, parade, intensity, low pass, luma only, scope white, scale type, YCbCr Waveform Overlay, High/Low, Max HDR	

Graticule checkbox – when selected, the graticule is laid over the Waveform YCbCr display. The brightness of the Graticule may be adjusted using the **Graticule Brightness** slider described below.

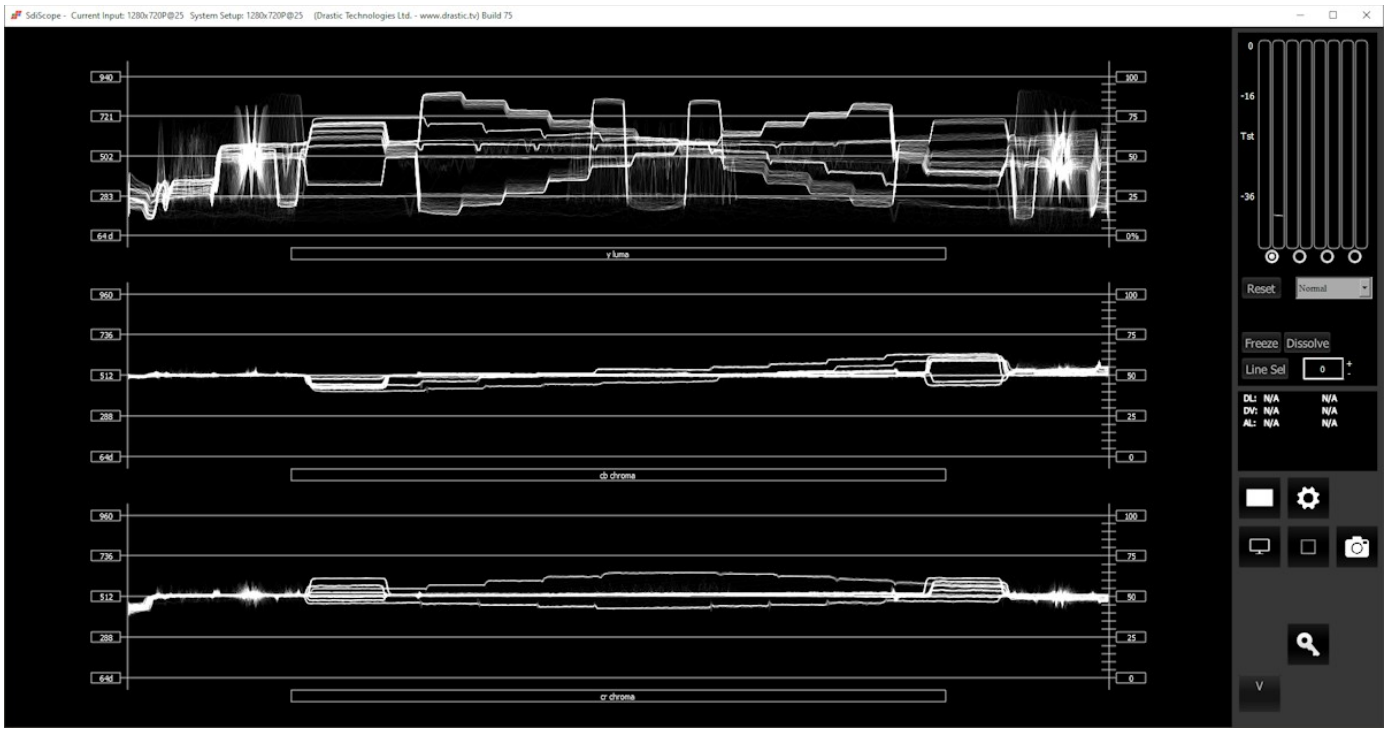
Show Parade checkbox – when selected, the display is from left to right. When not selected, the display is stacked top to bottom.



Only Luma checkbox – when selected, displays only the luminance of the signal.

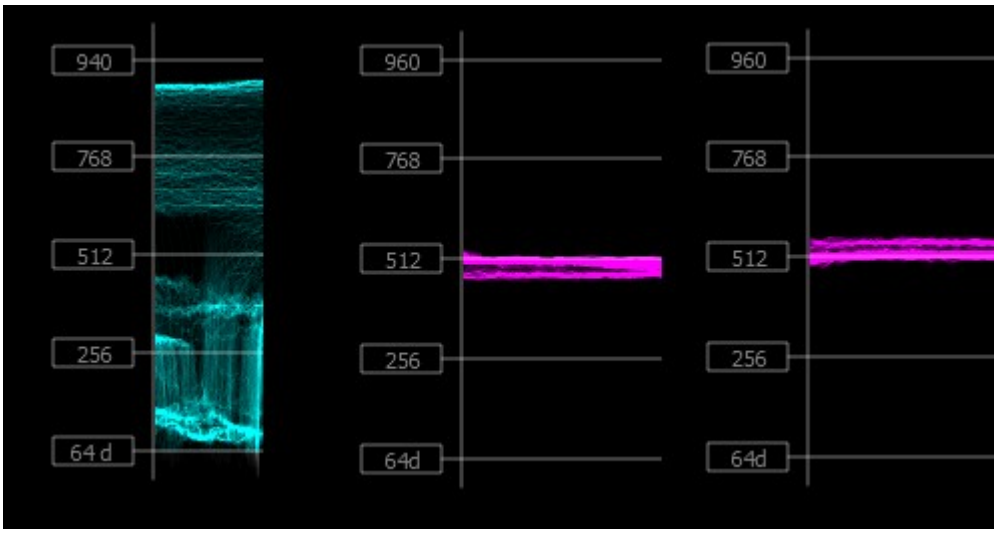


Scope White checkbox – turns the display white.

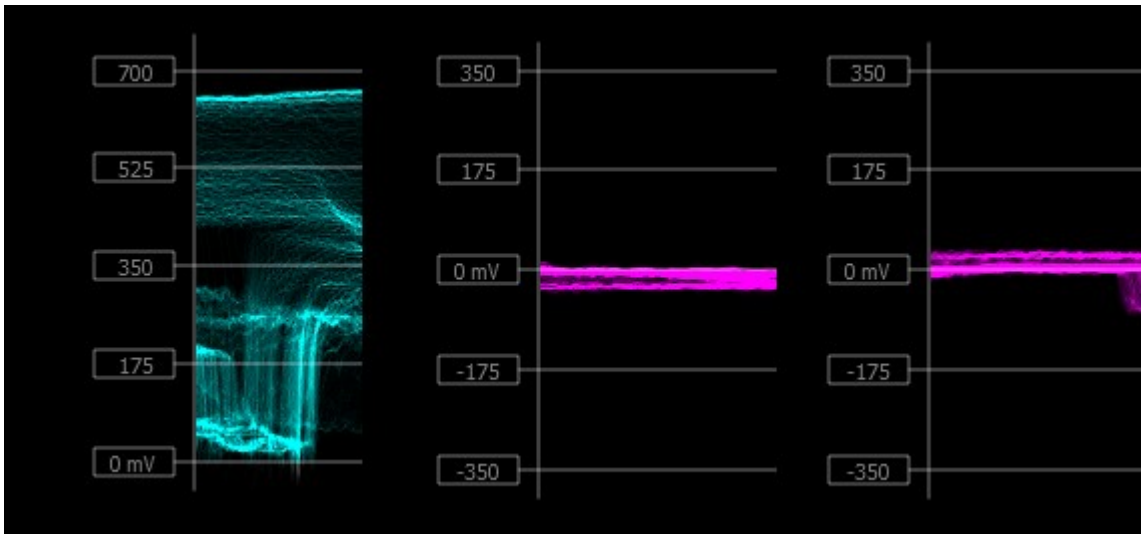


Scale Type pulldown – set the type of scale used to draw the waveform. Choices include:

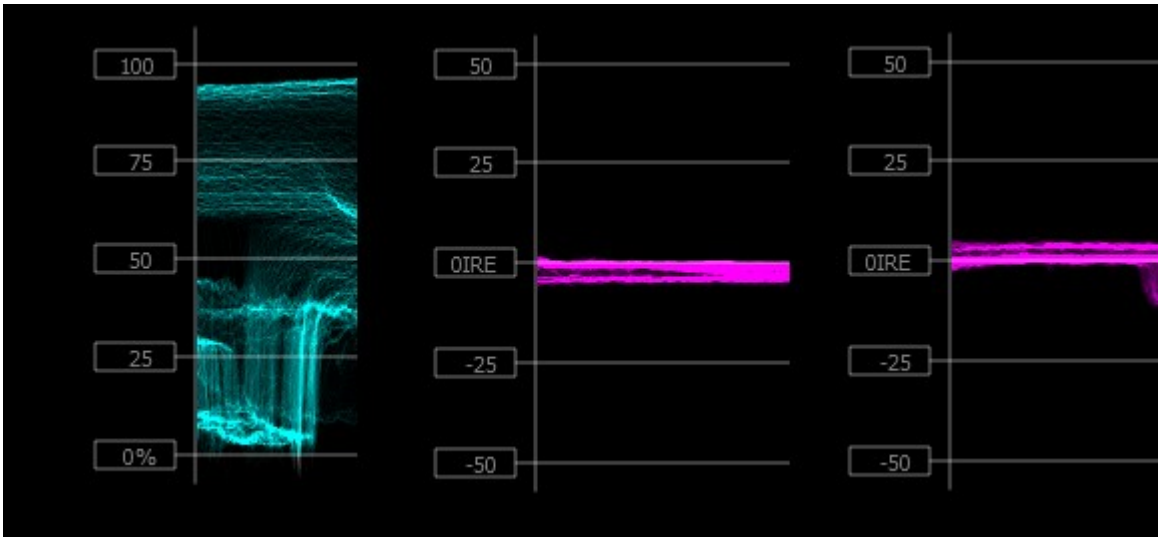
- **Digital** - the actual 0..255, 0..1023, or 0..4095 numeric values of the signal. In parade mode, the Cb and Cr graticule are not displayed.



- **MV** - the equivalent millivolts value of the signal if it was converted to analog. In parade mode, the Cb and Cr graticule are not displayed.



- **IRE** – Institute of Radio Engineers units, spanning 0..100. In parade mode, the Cb and Cr graticule are not displayed.



Intensity slider – Moving the Intensity slider brightens or dims the display of the video signal through the Vectorscope. The current setting is displayed above the slider, as a percentage, 0% providing no display and 100% being maximum intensity.

Graticule Brightness slider - Moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.

x1 button – clicking this button sets the display to standard size

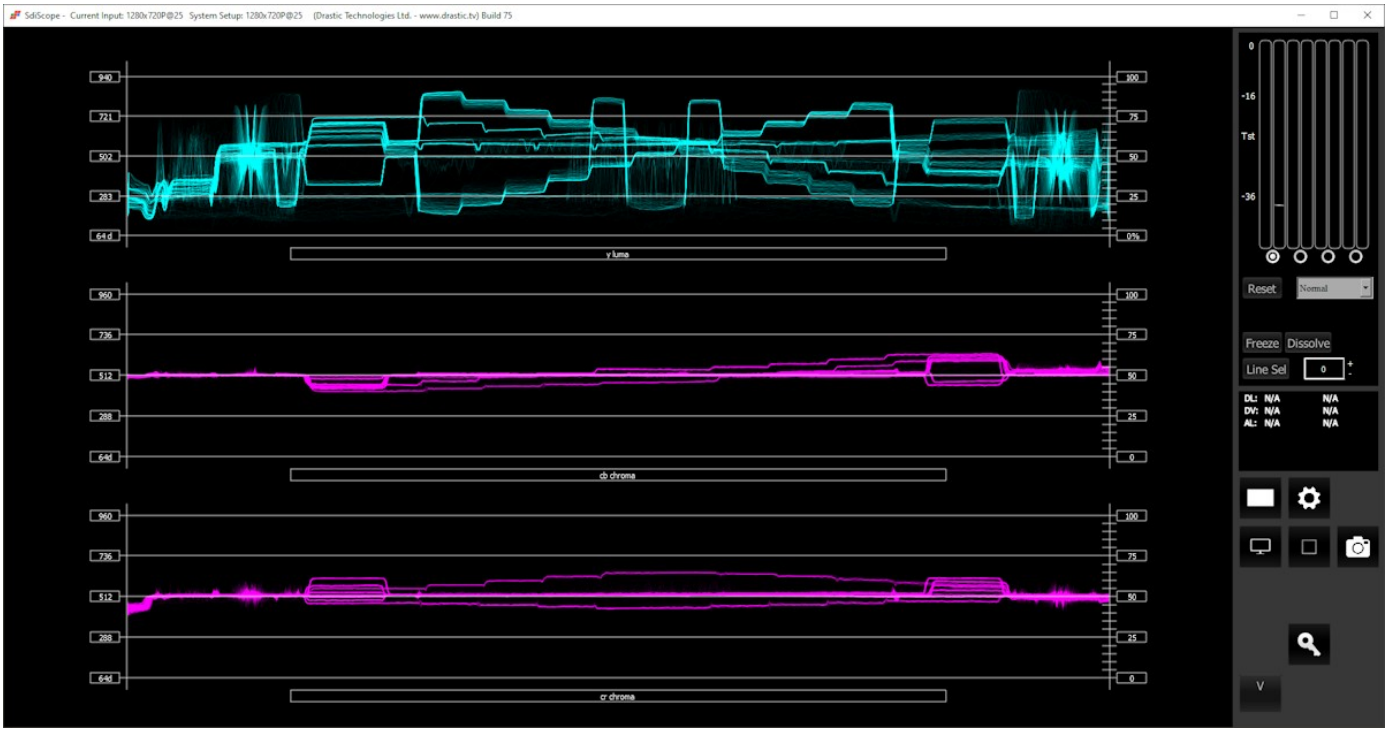
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

Waveform YCbCr Window

Here is the Waveform YCbCr.



The YCbCr Waveform Monitor displays the levels of the Y, Cb and Cr from the left of the picture to the right of the picture with all the lines summed into one graph. The Y, or luma/luminance, graph provides accurate white and black level information, as well as the range in between. The Cb and Cr display the +/- 512 levels of chroma of both types. This provides a visual representation of the chroma range of the signal.

IRE (percentage) to Digital Equivalence		
0	64d	0x40
25	283d	0x11b
50	502d	0x1F6
75	721d	0x2D1
100	940d	0x3AC

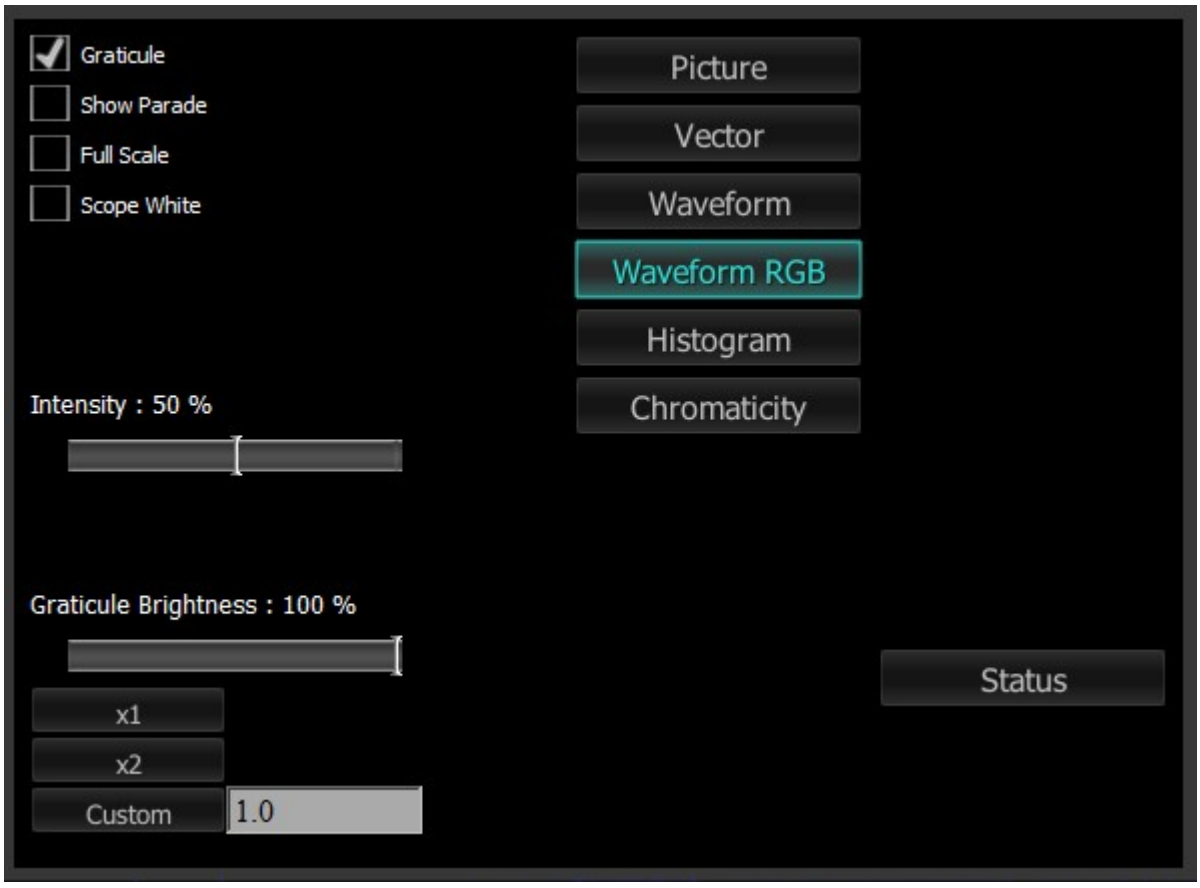
Critical for downstream color correction is the need to ensure proper luminance levels at the stage of initial capture, so any corrections will not muddy or wash out the signal information.

At all times a minimum and maximum value for each of the channels (Y, Cr and Cb) is displayed in 10 bit mode (0-1023). The color of the text for each channel indicates the following: in range (green), out of range but legal (yellow) and illegal/sync values (red).

Waveform RGB

Waveform RGB Setup

To set up the Waveform RGB press the **Scope Config** button. This opens the Scope Config window. Click on the **Waveform RGB** button on the right. There are a number of options to set up the Waveform RGB:

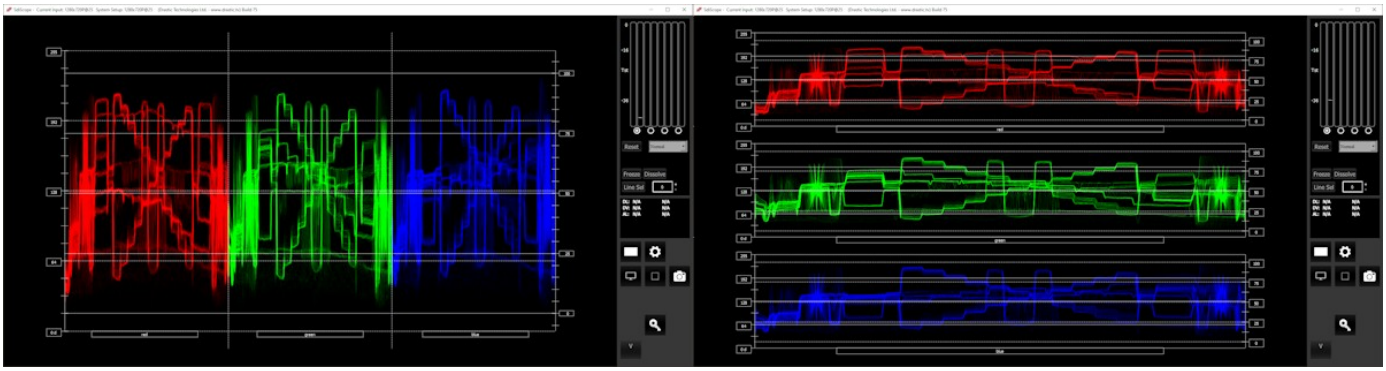


Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
Graticule, Stacked/Parade, Intensity, Scope White	Graticule, Stacked/Parade, Intensity, Scope White, Full Scale	Graticule, Stacked/Parade, Intensity, Scope White, Full Scale, Low Pass, Overlay		

Graticule checkbox – when selected, the graticule is laid over the Waveform RGB display. The brightness of the Graticule may be adjusted using the **Graticule Brightness** slider described below.

Show Parade checkbox – when selected, the display is from left to right. When not selected, the display is stacked top to bottom.



Full Scale checkbox – RGB, by default, will be sRGB. The range of each color will be from 16 to 240 (in 8 bit), so the scale will place white at 240 and black at 16 in normal scale. If in full scale, white will be placed at 255 and black at 0.

Scope White checkbox – turns the trace white.

Intensity slider – Moving the Intensity slider brightens or dims the display of the video signal. The current setting is displayed above the slider, as a percentage, 0% providing no display and 100% being maximum intensity.

Graticule Brightness slider – moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.

x1 button – clicking this button sets the display to standard size

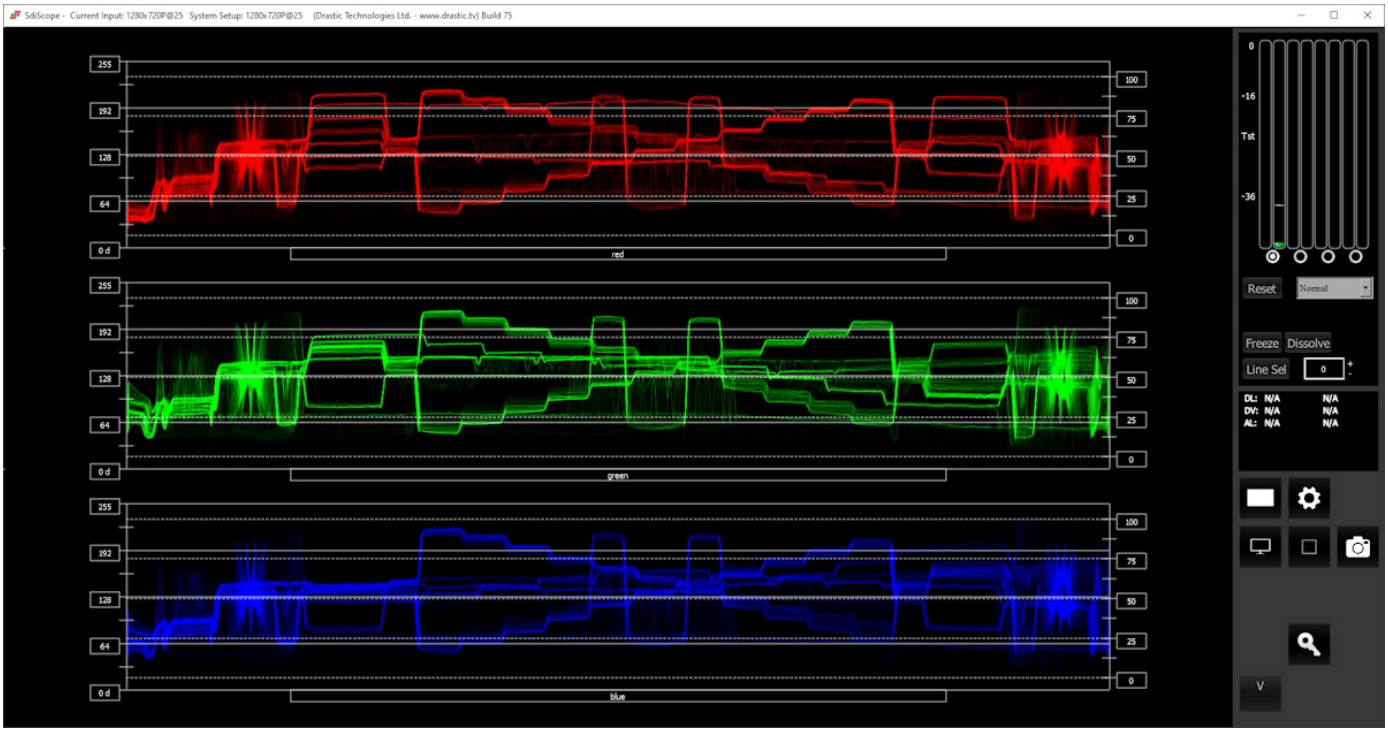
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

Waveform RGB Window

Here is the Waveform RGB.



The RGB Waveform Monitor shows each of the red, green and blue signals as independent graphs, displaying the RGB, or chrominance/color values associated with the signal.

IRE (percentage) to Digital Equivalence		
0	0	0x0
25	256	0x100
50	512	0x200
75	768	0x300
100	1023	0x3FF

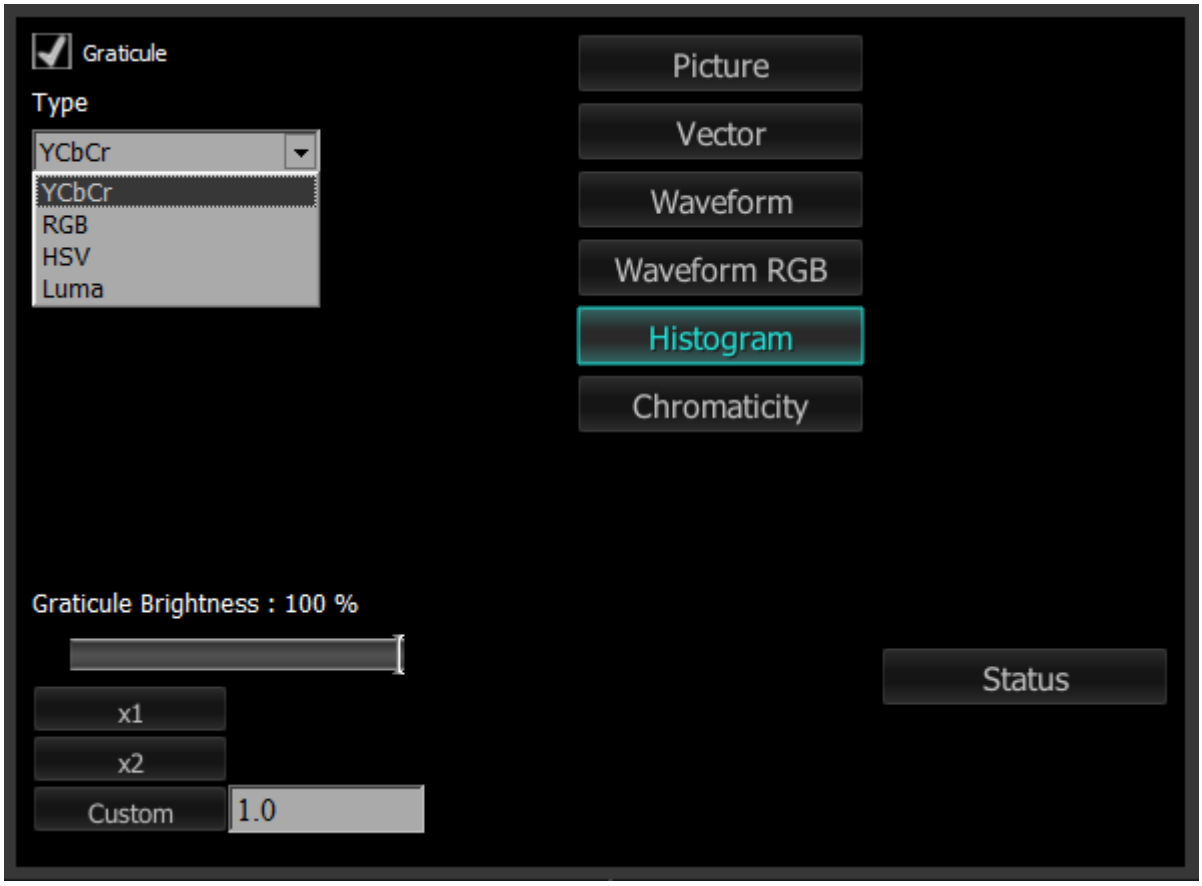
For dual link RGB signals, the original RGB 10 bit values are used unprocessed. For single link YCbCr signals, they are first converted to RGB before being analyzed and displayed.

Histogram

Histogram Setup

There are four Histograms available in the sdiScope histogram panel: the Histogram YCbCr, Histogram RGB, Histogram HSV, and Histogram Luma.

To set up one of the Histograms press the **Scope Config** button. This opens the Scope Config window. Click on the **Histogram** button on the right. Then use the pulldown menu to select between the available histograms. There are a number of options to set up each Histogram:



Histogram support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
	YCbCr, RGB, HSV, Luma	YCbCr, RGB, HSV, Luma, H/S Scope		

For each of the histograms, the following controls may be used to adjust the display:

Graticule checkbox – when selected, the graticule is laid over the Histogram display. The brightness of the Graticule may be adjusted using the **Graticule Brightness** slider described below.
Graticule Brightness slider – moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.
x1 button – clicking this button sets the display to standard size

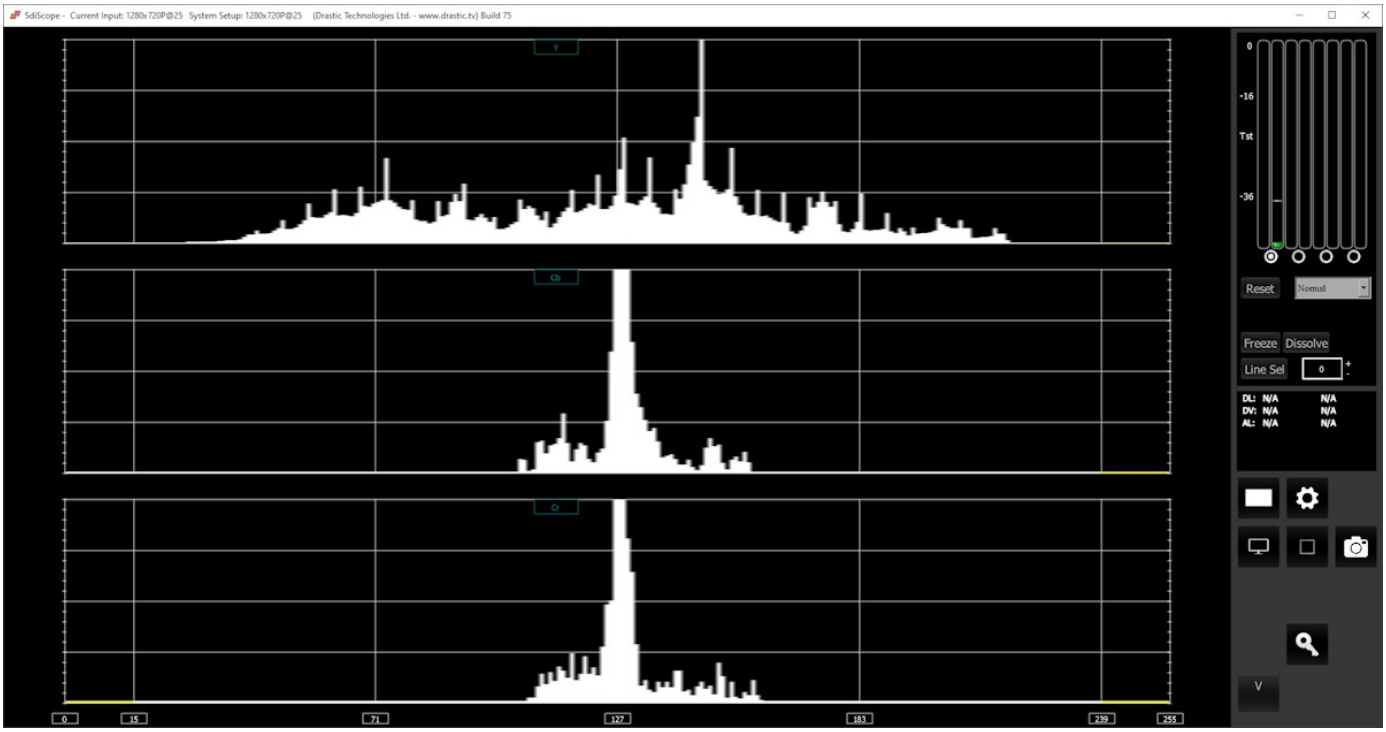
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

Histogram YCbCr Window

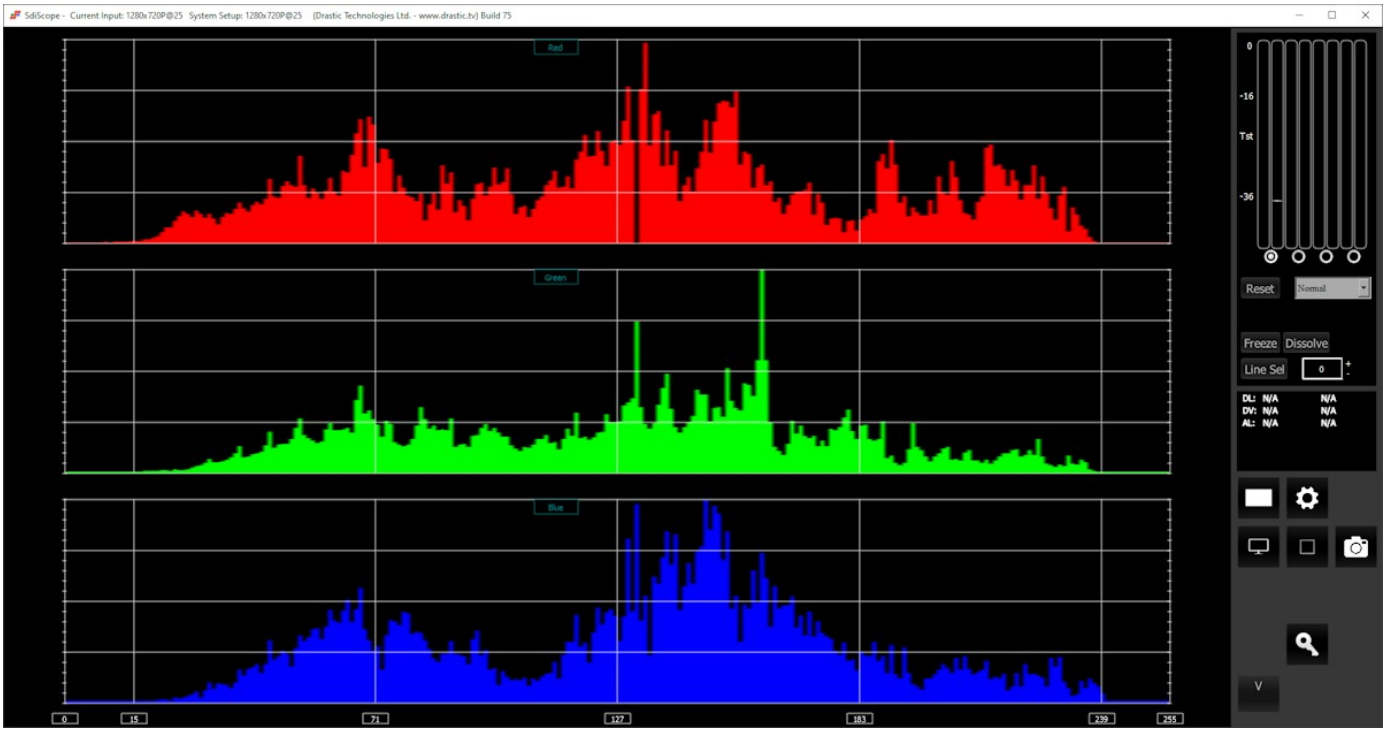
Here is the Histogram YCbCr.



YCbCr - displays a YCbCr range. This histogram breaks up the signal in into luma and chroma components. The top histogram represents the luma (Y) power of the various levels in the signal. The Cb (blue difference) and Cr (red difference) histograms that follow show the power distribution for those two components.

Histogram RGB Window

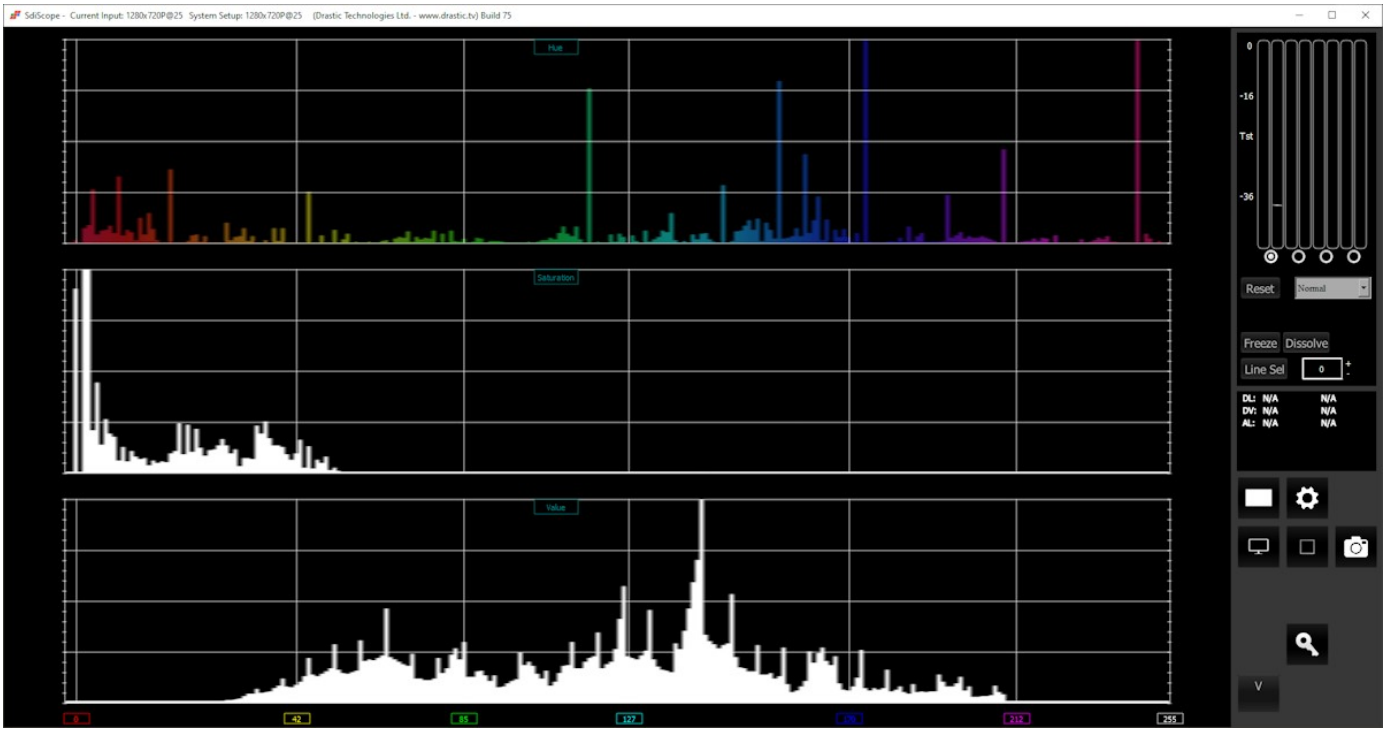
Here is the Histogram RGB:



RGB – display an RGB range. Shows the distribution of red/green/blue within the signal as a series of discrete bars that make a continuous graph for each color. This display provides an overview of the tonal range of each color in the picture. Each bar is the count of the number of pixels for one of the 256/1024/4096 possible bins.

Histogram HSV Window

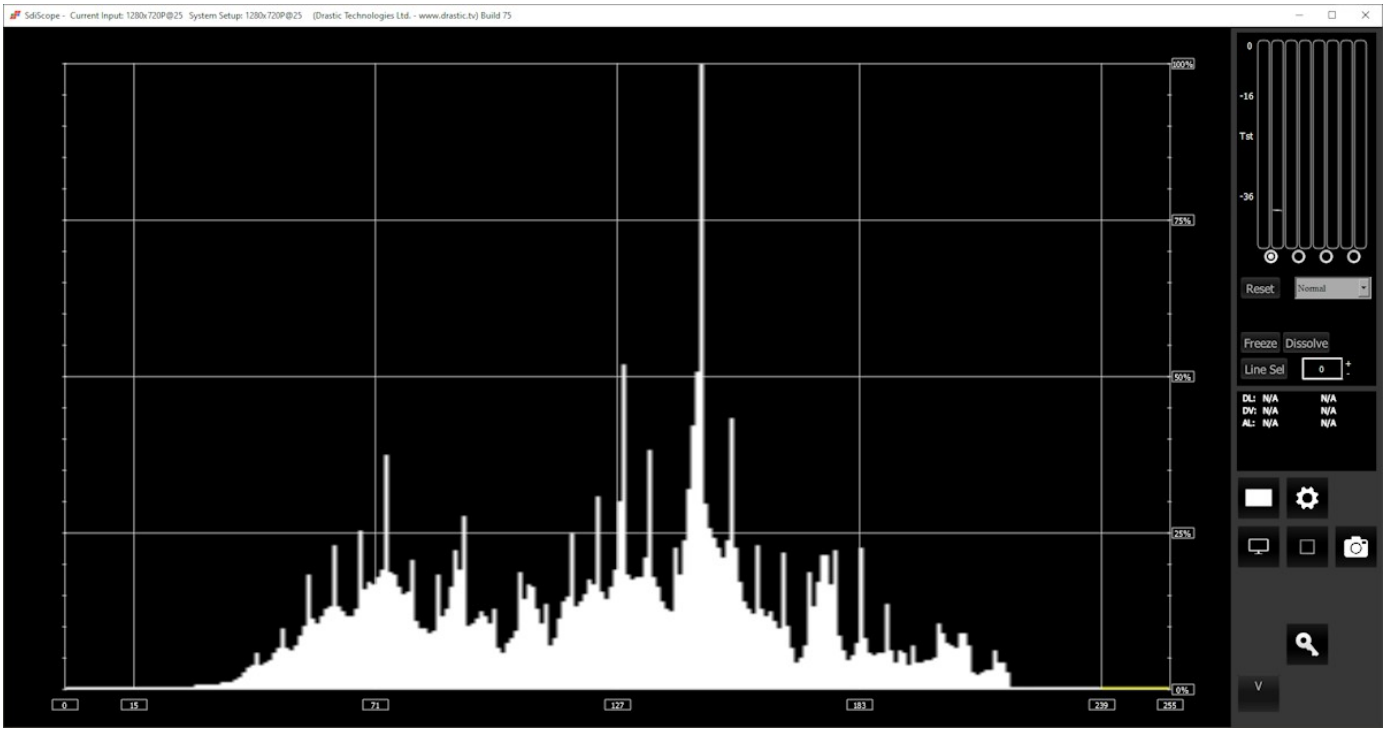
Here is the Histogram HSV:



HSV – display Hue, Saturation, and Value levels. The top range shows the strength of each hue, the middle section displays the saturation levels of the hues, and the lower section displays the value, or darkness/lightness levels.

Histogram Luma Window

Here is the Histogram Luma:



Luma – display only the luma in the signal. Each of the possible luminance values are ranged across the bottom of the scale, and the strength at each value is indicated the trace's vertical level, as a percentage of 100.

Chromaticity

Chromaticity Setup

To set up the Chromaticity press the **Scope Config** button. This opens the Scope Config window. Click on the **Chromaticity** button on the right. There are a number of options to set up the Chromaticity display:

Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
	Chromaticity scope, Triangles 601, 709, 2020, P3 gamut		Chromaticity scope, Triangles 601, 709, 2020, P3 gamut, Invert, Black, ACES0, ACES1, Arri, BMD, DaVinci, Canon, V Gamut, RED, S-Gamut, ProPhoto, Adobe	

Graticule checkbox – when selected, the graticule is laid over the Chromaticity display. The brightness of the Graticule may be adjusted using the **Graticule Brightness** slider described below.
Triangle 601 checkbox – when selected, displays the CCIR-601 (Rec. 601 or BT.601) triangle.
Triangle 709 checkbox – when selected, displays the Rec.709 (BT.709 or ITU 709) triangle.
Triangle 2020 checkbox – when selected, displays the BT.2020 (or Rec. 2020) triangle.
Triangle P3 checkbox – when selected, displays the P3 (DCI-P3 or DCI/P3) triangle.

Graticule Brightness slider – moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness.

x1 button – clicking this button sets the display to standard size

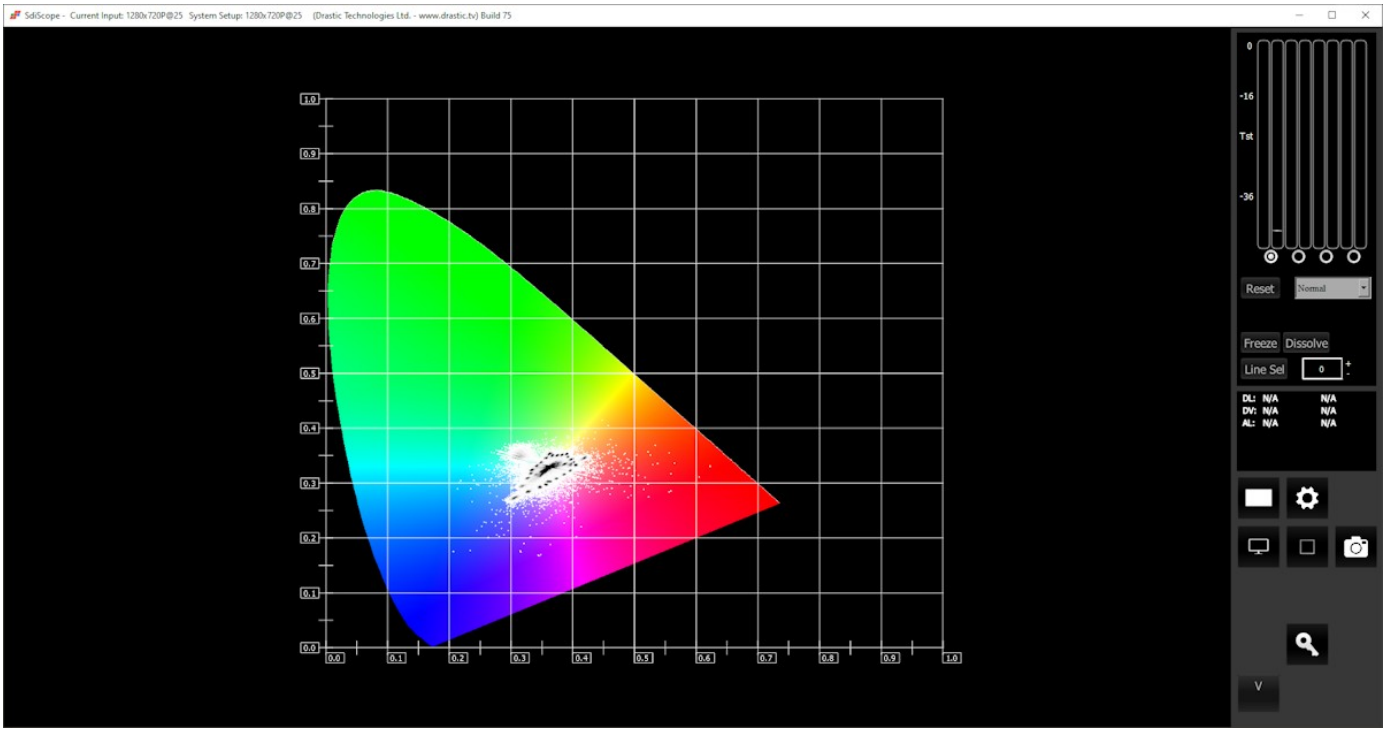
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

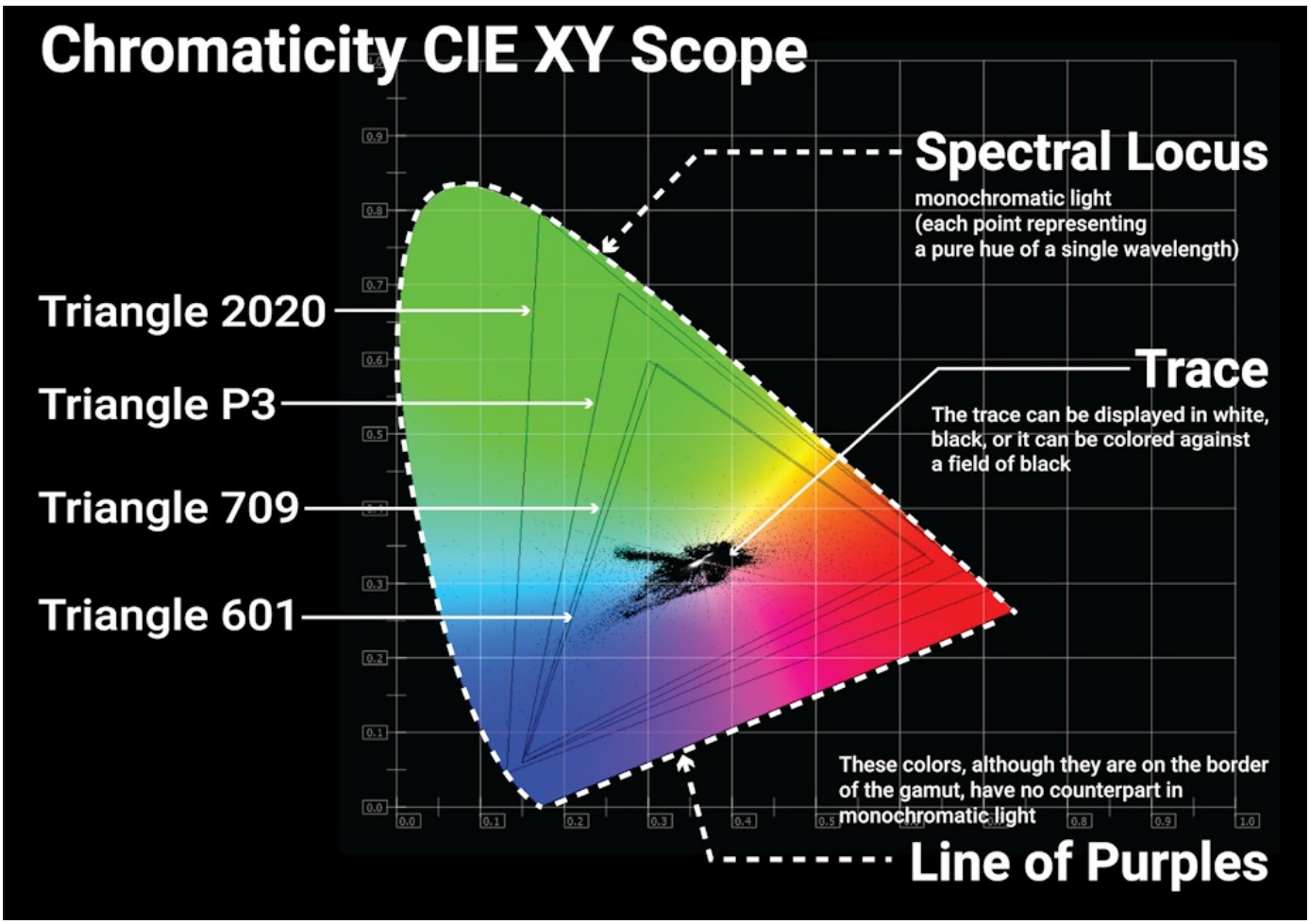
Chromaticity Window

Here is the Chromaticity window.



The Chromaticity scope provides a visual representation of the color in a video across all the colors of visible light. Depending on the version, there are a number of gamut triangles that can be superimposed. This will delineate the colors that fall within the acceptable range and those that are outside it.

The below image shows our chromaticity scope with the 4 most common gamut triangles: 2020, P3, 709, and 601.



Status Window

Status Setup

To set up the Status press the **Scope Config** button. This opens the Scope Config window. Click on the **Status** button on the right. There are a number of options to set up the Status display:

The Status display is added at the sdiScope level.

Free	sdiScope	4KScope	HDRScope	NetXScope
	Status display			

Graticule Brightness slider – moving the Graticule Brightness slider adjusts the brightness of the graticule overlay, 0% providing no display and 100% being maximum brightness. As the Status display has no graticule, this control has no effect here.

x1 button – clicking this button sets the display to standard size

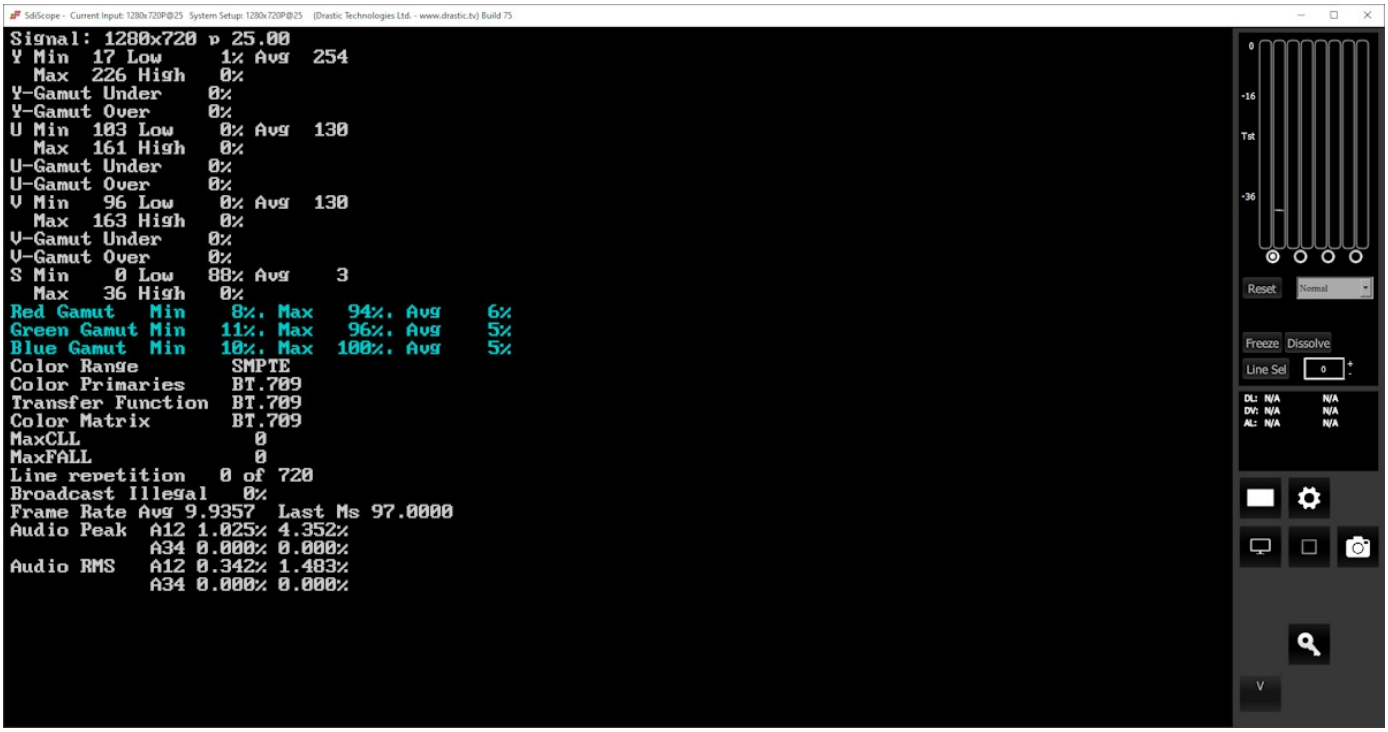
x2 button – clicking this display zooms in to set the display at 200%, or 2x normal display. Pressing the x1 button sets the display back to normal.

Custom button and field – The user may enter a custom enlargement value in the field, and press the Custom button to zoom in and see details up close. Pressing the x1 button sets the display back to normal.

Pressing the x in the upper right corner will close the Scope Config window.

Status Window

Here is the Status window.



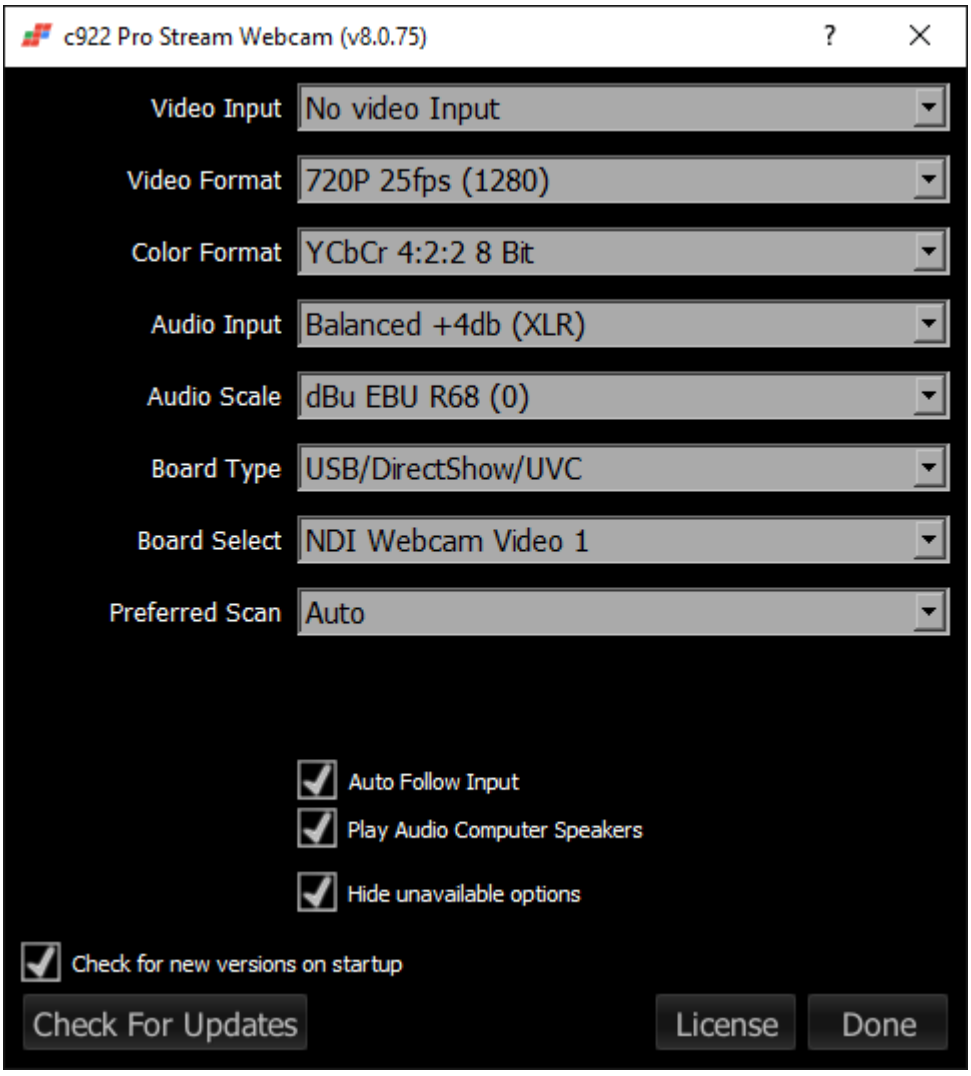
The Status window displays:

Signal: displays the current signal type
Y: The Y component. Displays Minimum and Maximum, Low and High, Average, Gamut Under, and Gamut Over values
U: The U component. Displays Minimum and Maximum, Low and High, Average, Gamut Under, and Gamut Over values
V: The V component. Displays Minimum and Maximum, Low and High, Average, Gamut Under, and Gamut Over values
S: Saturation. Displays Minimum and Maximum, Low and High, Average, Gamut Under, and Gamut Over values
Red Gamut – shows minimum, maximum, and average values for the red gamut.
Green Gamut – shows minimum, maximum, and average values for the green gamut.
Blue Gamut – shows minimum, maximum, and average values for the blue gamut.
Color Range: Full or SMPTE (Limited)
Color Primaries: BT 709 (HD), BT 470BG (PAL), SMPTE 170M (NTSC), BT 2020 (WCG)
Transfer Function: BT 709 (HD), SMPTE 170M (PAL/NTSC), SMPTE 2084 (HDR10/PQ), ARIB B67 (HLG)
Color Matrix: BT 709 (HD), BT 479BG (PAL), BT 601 (NTSC), BT 2020 (WCG)
MaxCLL: In HDR10 mode, Maximum Content Light Level
MaxFALL: In HDR10 mode, Maximum Frame – Average Light Level
Line repetition in number of lines over total possible lines
Broadcast illegal in percentage
Frame Rate: Displays Average, and Last Ms.
Audio Peak per channel pair
Audio RMS per channel pair

System Configuration button – Opens the System Configuration window, which allows the user to adjust settings for the video and audio I/O type, and to license the software.

System Configuration Window

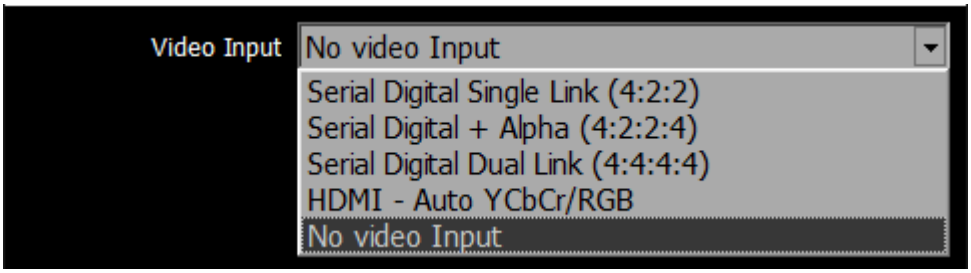
Here is a look at the options in the System Configuration window.



The Settings window is designed to sense and reflect the capabilities of the board or stream the system is set up to view.

The top bar of the Config window displays the input setting, shows the version number, and offers an X to close the window.

Video Input



Video Input pulldown menu - allows the user to select between the inputs supported by sdiScope and the system hardware. In the case of dual link, 2 inputs are used. The user may be presented with a list similar to this:

- Serial Digital Single Link (4:2:2)
- Serial Digital + Alpha (4:2:2:4)
- Serial Digital Dual Link (4:4:4:4)
- HDMI – Auto YcbCr/RGB
- No video Input

Video Format

Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
SD, HD		SD, HD, 2K, 4K	SD, HD, 2K, 4K, 8K	

Video Format pulldown menu - displays the current setting, and allows the user to select between the signal formats supported by the I/O hardware. sdiScope supports a wide range of signal formats from NTSC CCIR-601 to HD 1080 (hardware dependent).

Color Format

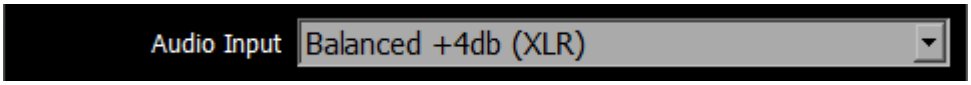
Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
8 bit	8/10 bit			

Color Format pulldown menu - allows the user to select the processing mode. In the case of single link, this can be 8 or 10 bit YCbCr or RGBA 8. For dual link it is normally YCbCr 10 or RGB 10. There user will be presented with a list similar to this:

- YCbCr 4:2:2 10 bit
- YCbCr 4:2:2 8 bit
- YCbCr Alternate
- RGBA 4:4:4:X 8 bit
- RGB 4:4:4 10 bit
- RGB 4:4:4 8 bit

Audio Input



The audio input pulldown is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Audio Input				

Audio Input pulldown menu – (hardware dependent) allows the user to select between the embedded audio tracks (HD-SDI or HDMI depending on input), or the AES/EBU audio inputs. On some hardware, analog audio inputs are also available.

Audio Scale

Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
dbFS RMS		dbFS RMS, dBu EBU R68 (+18), dBu EBU R68 (0), dBu EBU PPM, dBu BBC PPM, LUFS -23 EBU 9, LKFS -24 US 9		

Audio Scale – change the audio meter scale. The user will be presented with a list similar to this, depending on the version licensed:

- dBFS RMS

Board Type

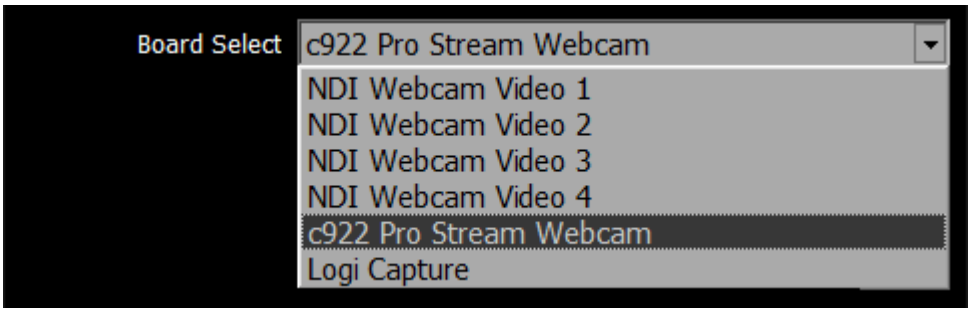
Feature support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
AJA, Bluefish444, Blackmagic, USB/DirectShow, DekTec	Auto Select, AJA, Bluefish444, Blackmagic, USB/DirectShow, DekTec	Auto Select, AJA, AJA Shared, Bluefish444, Blackmagic, USB/DirectShow, UltraScope, DekTec, Matrox, NDI, Desktop, ScopeDirect		Auto Select, AJA, AJA Shared, Bluefish444, Blackmagic, USB/DirectShow, UltraScope, DekTec, Matrox, NDI, Desktop, ScopeDirect, NIC SMPTE 2110, Network Video Streams

Board Type – select the type of board to use. The user may be presented with a list similar to this:

- Auto Select
- AJA
- Bluefish
- Blackmagic
- DekTec
- DirectShow/UVC

Board Select



The Board Select pulldown is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Board Select				

Board Select – allows the user to select which board or screen to use. Sometimes if there is more than one board in the system, or more than one channel in a board, the application may be looking at the wrong one. In fact, certain types of devices may appear to be out of order, depending on whether different boards have been used in the system. Clicking between boards can reset the selected board. sdiScope will take a look at how the device identifies itself and populate the list with any devices seen in the system.

Preferred Scan

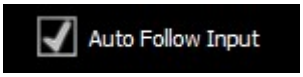
The Preferred Scan pulldown is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Preferred Scan				

Preferred Scan – Select between available scan settings. The user may be presented with a list similar to this:

- Auto
- Interlaced (I)
- Segmented (psf)

Auto Follow Input



The Auto Follow Input checkbox is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Auto Follow Input				

Auto Follow Input – if this checkbox is selected, whenever the input type is changed, the settings for sdiScope are changed as well. If not checked, switching the input signal will not switch the settings.

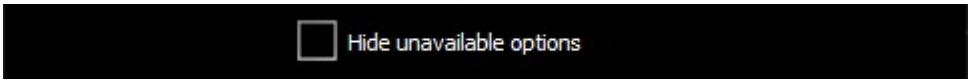
Play Audio Computer Speakers

The Play Audio Computer Speakers checkbox is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Play Audio Computer Speakers				

Play Audio Computer Speakers – when checked, pass audio through the computer speakers. Where the system has capable hardware, the audio may be monitored via the hardware's output, so in this case the user can deselect the box to only use their external speakers for audio monitoring.

Hide Unavailable Options

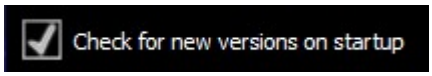


The **Hide Unavailable Options** checkbox is available in all versions except NetXScope (which offers all of the optional features).

Free	sdiScope	4KScope	HDRScope	NetXScope
Hide Unavailable Options				

Hide Unavailable Options – when checked, remove the grayed out controls that are not available for the product level that has been licensed. If this is left unchecked, any options that is not licensed will be shown, but grayed out. Clicking the grayed out options will display a preview, with a link in case the user would like more details on the option.

Check for New Versions on Startup



The Check for new versions on startup checkbox is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Check for new versions on startup				

Check for new versions on startup checkbox – each time the system is started, check the current version of the build available on the Drastic website, in case the version you have installed is no longer current.

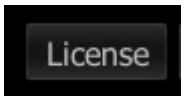
Check for Updates

The Check For Updates button is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Check For Updates				

Check For Updates button – click to check the current version of the build available on the Drastic website, in case the version you have installed is no longer current.

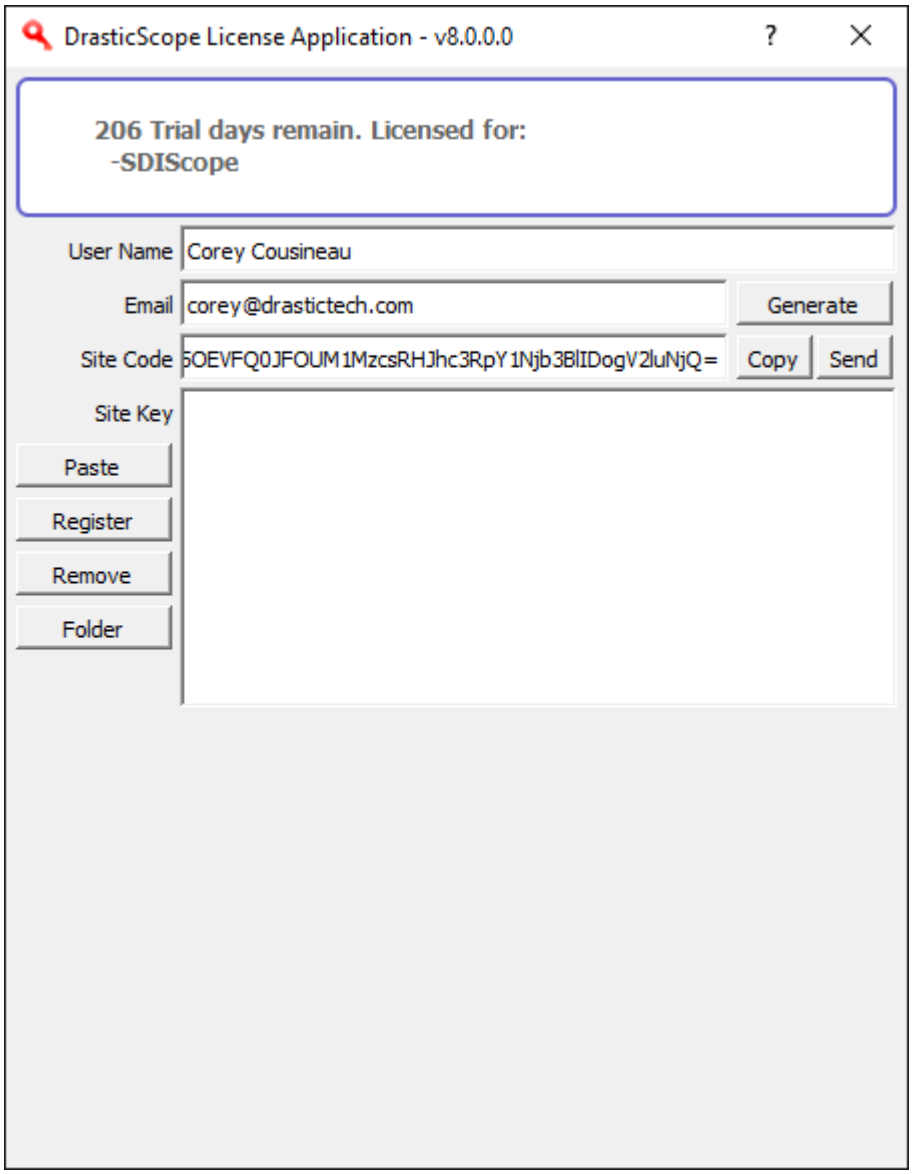
License



The License button is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
License				

License button - Press the **License** button to open the licensing dialog.



The top field displays the current status of the license.
The **User Name** field allows the user to type in a first and last name during the licensing process.

The **Email Address** field allows the user to type in the email at which they would like to receive the site key for their license.

Once the name and address fields have been filled out, pressing the **Generate** button populates the **Site Code** field with a string of alphanumeric characters. This string is the Site Code.

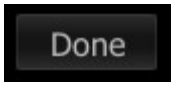
The **Site Code** field is where the site code displayed during the licensing process. The user may select the site code and use Ctrl+C to copy it to the clipboard, or use the **Copy** button. The user will need to send the site code to Drastic Authorization to get a Site Key to enable the license.

If the system has been set up with email, pressing the **Send** button will open a new email to Drastic Authorization, with the site code in the body of the email.

Once a reply email containing the **Site Key** has been returned by Drastic Authorization, copy it, then paste it into the Site Key field either using the **Paste** button or Ctrl+V.

Once the Site Key has been pasted into the **Site Key** field, pressing the **Register** button registers the license. The system may need to be restarted for the change in license status to be updated. Pressing the x in the upper right corner will close the **License** window.

Done



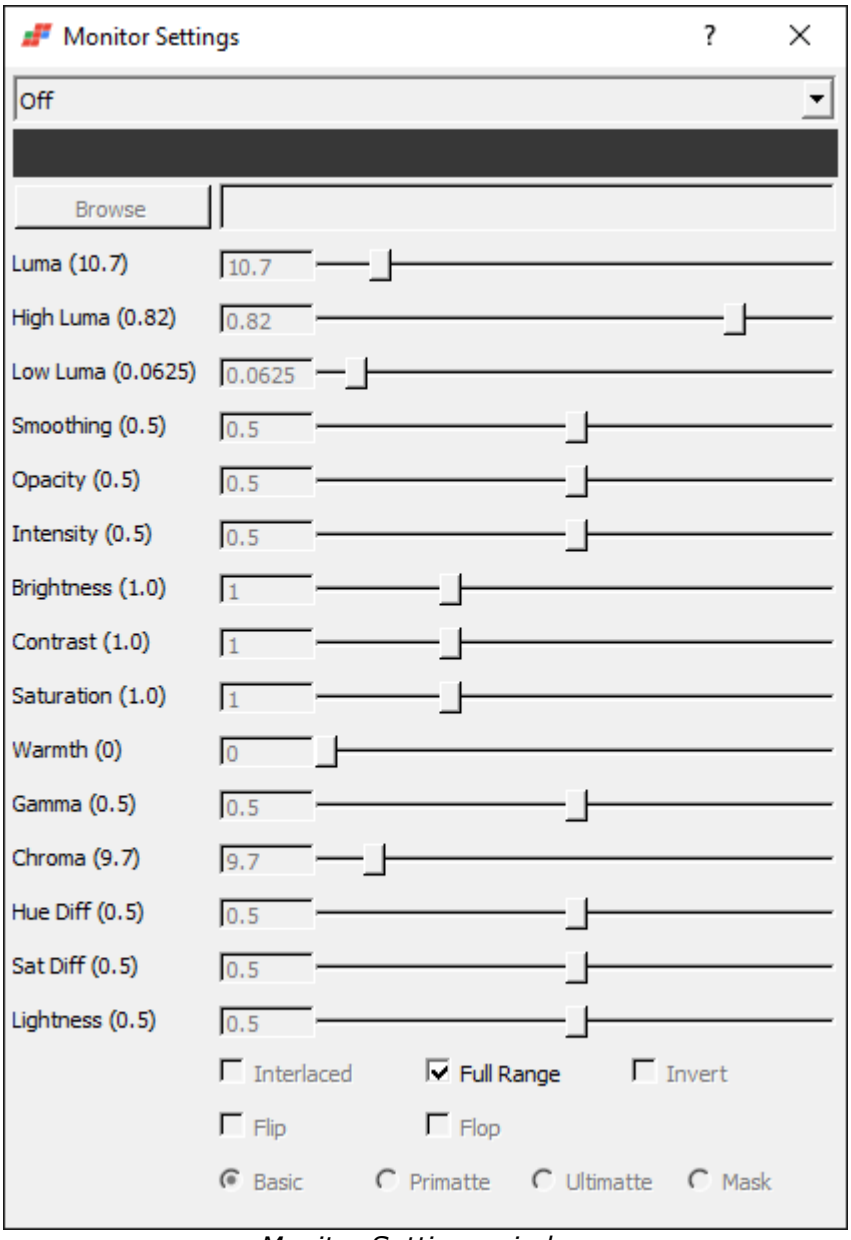
The Done button is available in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Done				

Done button. Pressing the Done button in the System Configuration window closes the window and enables any changes that have been made.

Display Modes

Display Mode button – opens the Monitor Settings window, which allows the user to select between available display modes.



Monitor Settings window

The pulldown menu at the top allows the user to select between various display modes.

Display mode support by version:

Free	sdiScope	4KScope	HDRScope	NetXScope
	Luma only, Red/Blue/Green only, Focus Assist	Luma only, Red/Blue/Green only, Focus Assist, Zebra Luma, Zebra Chroma, Clipping, Edge Difference, Calibrate, Flip Flop, Show Alpha, Opacity, Luma Key, Green Screen Key, Chroma Key Despill, Chroma Key Simple, Neutral		

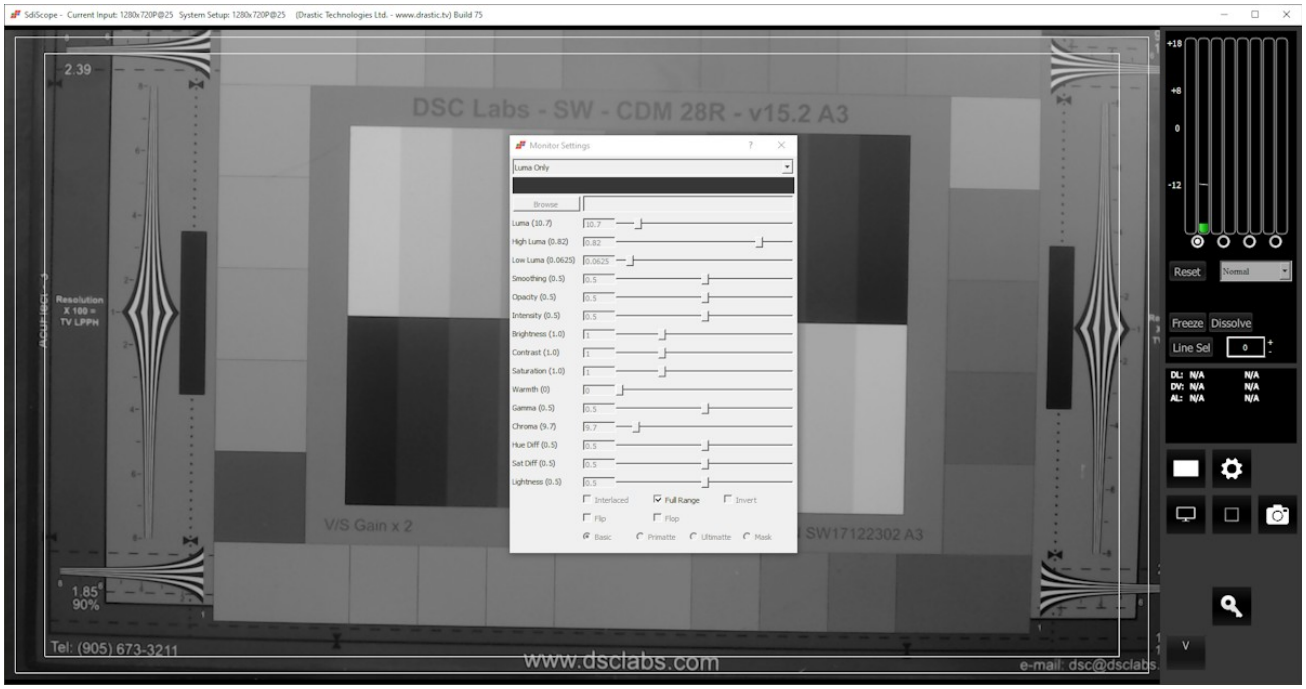
Off

Display the signal normally. This is the default picture view.

The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Luma Only

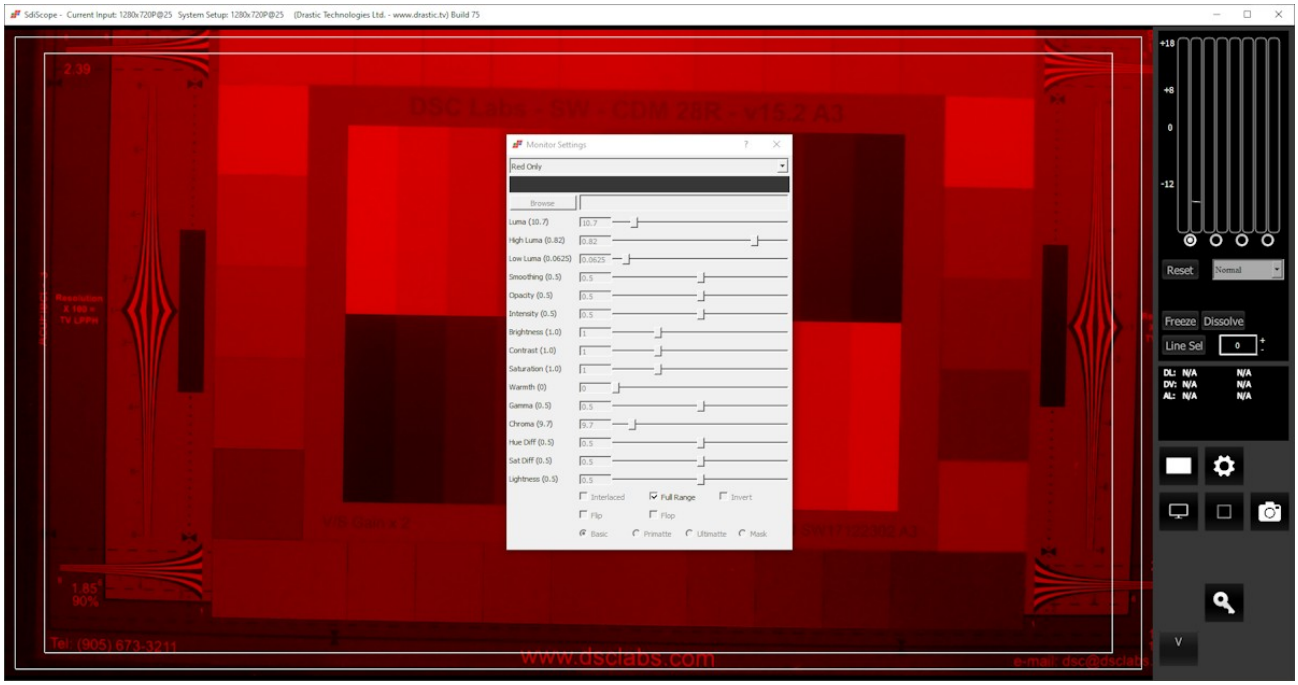
Show only the Y or brightness of the picture. This display setting produces a black and white image, with no chroma.



The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Red Only

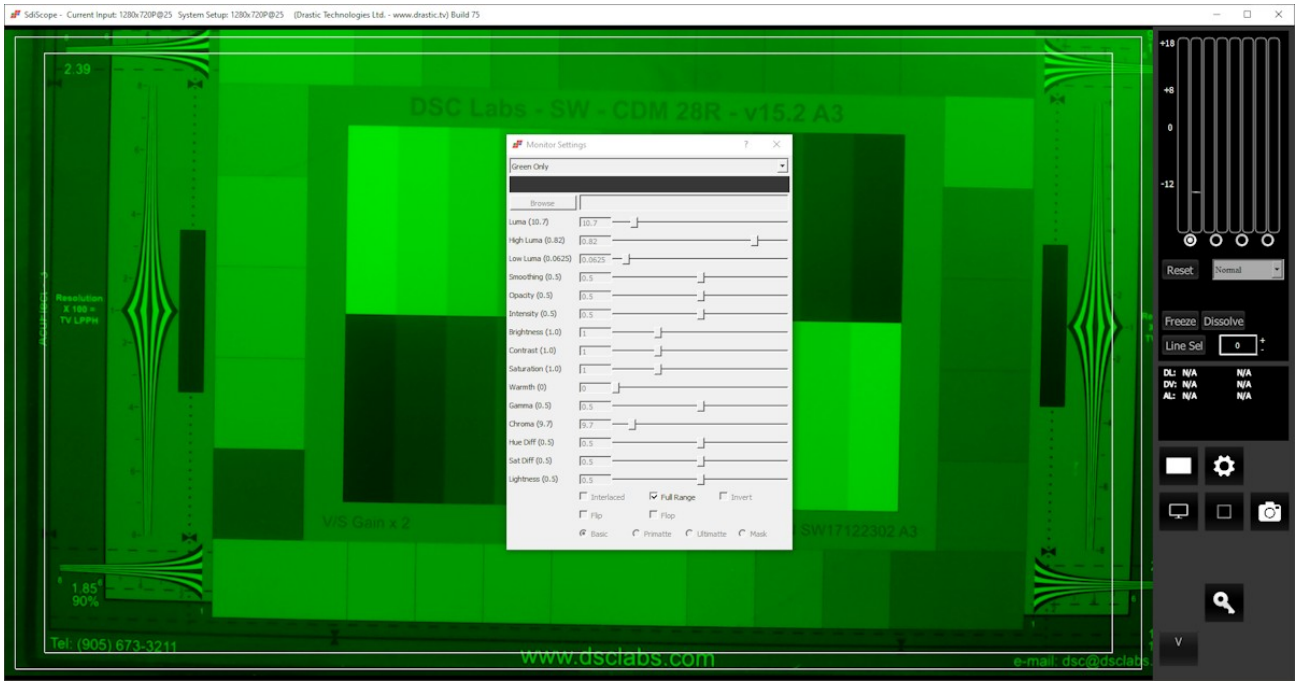
Show only the red channel.



The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Green Only

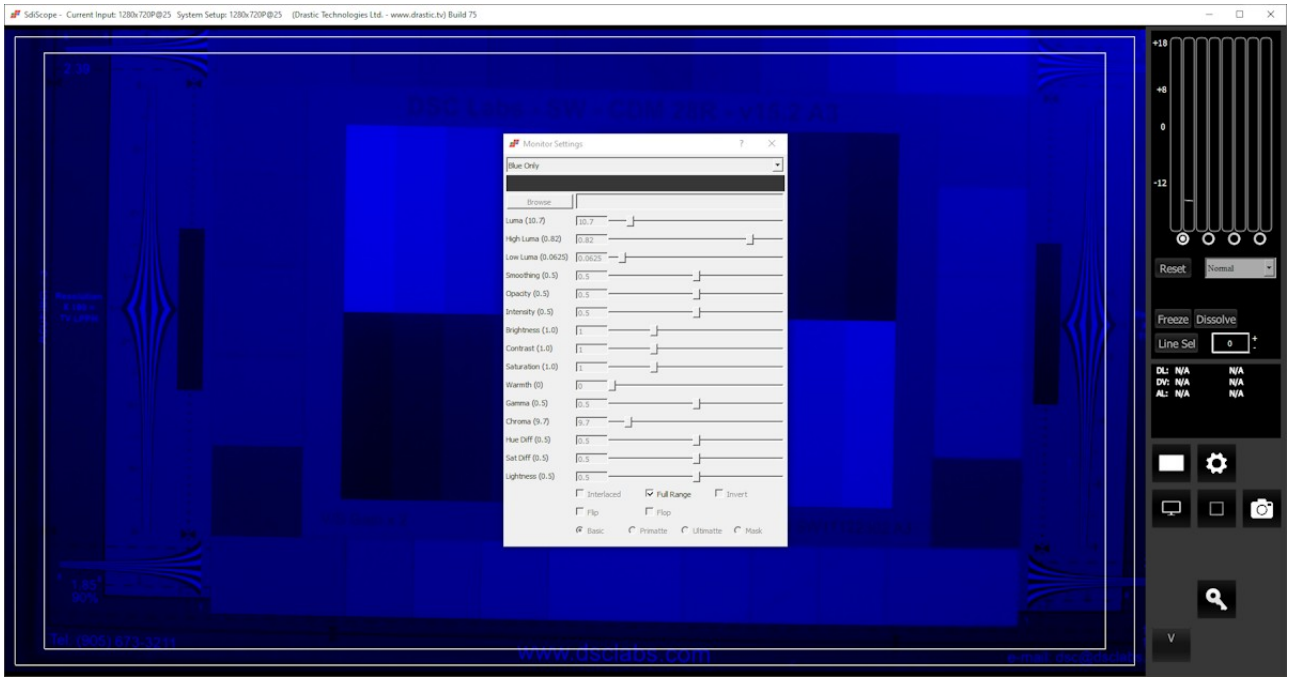
Show only the green channel.



The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Blue Only

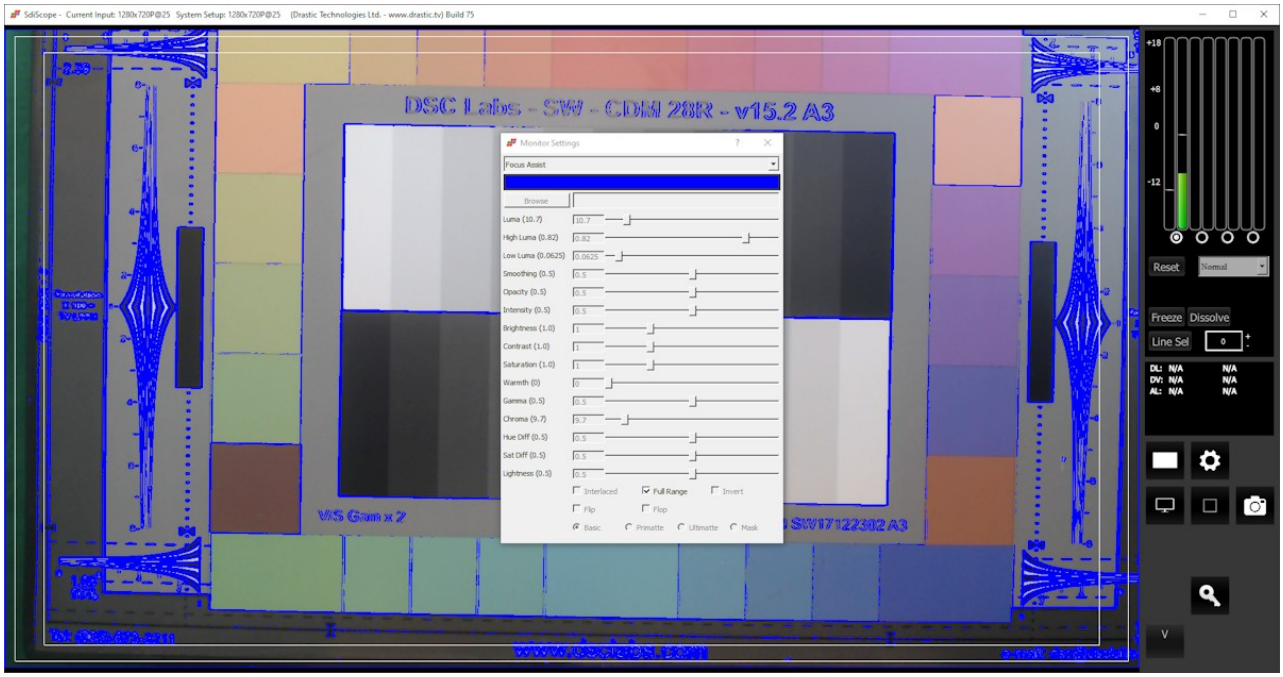
Show only the blue channel.



The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Focus Assist

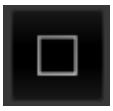
Paint areas of the image that are in focus with the selected color. This setting allows fine tuning of camera focus settings by making the in-focus areas obvious.



Activates the **Color Picker** (the bar just below the display mode pulldown menu), so the user can choose an appropriate color to contrast from the general hue of the picture.

The **Full Range** checkbox may be checked (use Full video range) or unchecked (use the standard SMPTE range). Full Range lets you adjust how the signal is processed to the display and does not affect any of the graticules.

Manual



The manual is available through this button in all versions.

Free	sdiScope	4KScope	HDRScope	NetXScope
Manual				

Manual button – opens up the DrasticScope manual included with your install for quick reference. Depending on the version of software you have installed, this may not be the most up to date manual that exists.

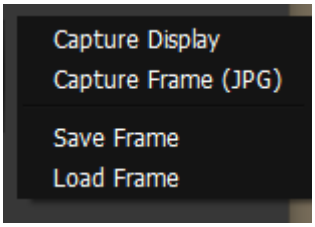
The latest versions of Drastic documentation can generally be found here:

https://www.drastic.tv/support-59/supportdocumention

Capture Image

Free	sdiScope	4KScope	HDRScope	NetXScope
	Capture Display, Capture Frame JPG, Save Frame, Load Frame	Capture Display, Capture Frame JPG, Save Frame, Load Frame, Save Preset, Load Preset		

Frame Grab button – provides options for capturing a frame of video for reference. Images are saved in C:\Users\<username>\Pictures\NetworkVideoAnalyzer. Opens the following dialog:



Capture Display – Capture the interface with the current video and scopes to an image
Capture Frame JPG - by selecting this option or using <CTRL>-1, a JPG image can be captured to your C:\Users\<username>\Pictures\NetworkVideoAnalyzer directory in 8 bit YCbCr mode for easy reading and documentation. 10% and 50% JPG scaled versions can also be captured with <CTR>-5 and <CTRL>-9.

Save Frame - The incoming image can be captured as a raw (YUV, V210, RGB10) image in full, bit perfect images to your C:\Users\<username>\Pictures\NetworkVideoAnalyzer directory by selecting this option or by pressing <CTRL>-0. These can be read with videoQC or converted with MediaReactor.

Save Images Keyboard Commands

Save JPG Images

<CTRL>-1 Capture a full size JPG image (in 8 bit YCbCr only)
<CTRL>-2 Capture a 50% size JPG image (in 8 bit YCbCr only)
<CTRL>-3 Capture a 25% size JPG image (in 8 bit YCbCr only)
<CTRL>-4 Capture a 10% size JPG image (in 8 bit YCbCr only)
<CTRL>-5 Capture a full size JPG image (in 8 bit YCbCr only)
<CTRL>-6 Capture a full size JPG image (in 8 bit YCbCr only)
<CTRL>-7 Capture a full size JPG image (in 8 bit YCbCr only)
<CTRL>-8 Capture a full size JPG image (in 8 bit YCbCr only)

Save Raw Images

<CTRL>-9
<CTRL>-0 Capture uncompressed frames as YUV (8 bit), v210 (10 bit), RGB10 (10 bit)
These are headerless frames, with only the raw data in them. They can be viewed or read in Drastic software like videoQC, DTMediaRead, Net-X-Code Server, etc. Please contact Drastic for the bit format of these files.

Saved Frames Location - Frames are saved at C:\Users\<username>\Pictures\NetworkVideoAnalyzer.

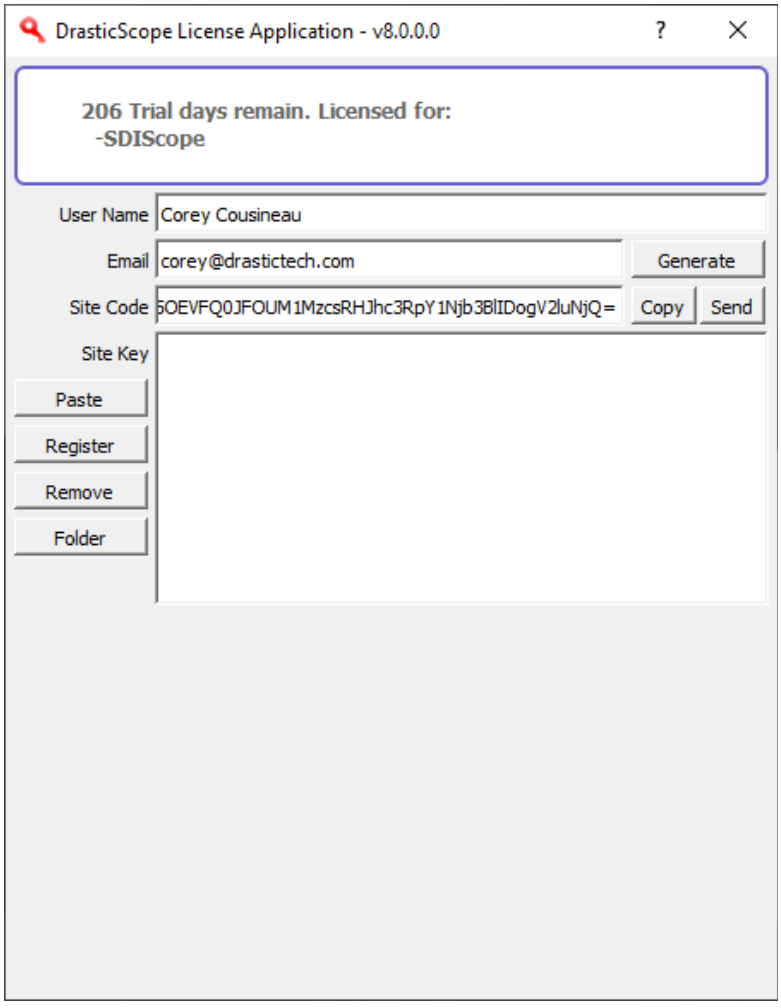
Load Frame – opens a browser pointed at your C:\Users\<username>\Pictures\NetworkVideoAnalyzer directory so you can load a frame you have saved.

License

Licensing features are available in all versions. You can use the licensing to check the status of your license, or to enable an updated, or new, license.

Free	sdiScope	4KScope	HDRScope	NetXScope
License				

Pressing the license button opens the licensing dialog. Here is a system that is licensed for a long term but temporary license.



You can check the status of your license here. If the system is unlicensed, you can get a license by following the detailed instructions here:

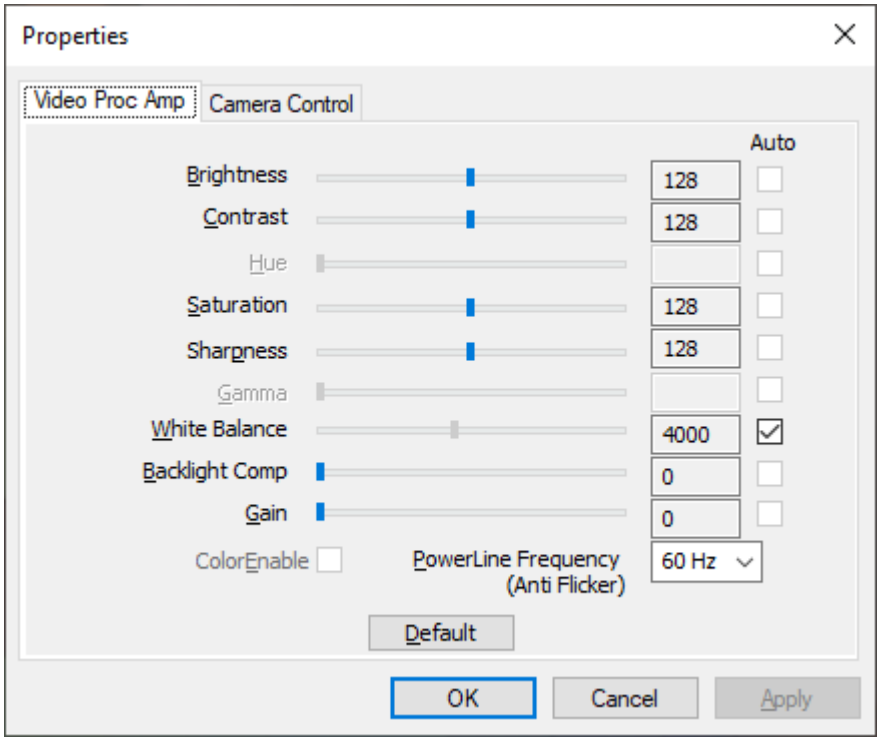
https://www.drastic.tv/support-59/licensing

USB/DirectShow/UVC Configuration

Where the system is set to use a USB/DirectShow/UVC device, a configuration button appears. Pressing this button opens a configuration menu for the device. The capabilities of the configuration vary depending on the device's capabilities. Here is a sample configuration menu. The device in the below examples is a simple webcam.

Video Proc Amp

The first tab is the Video Proc Amp.



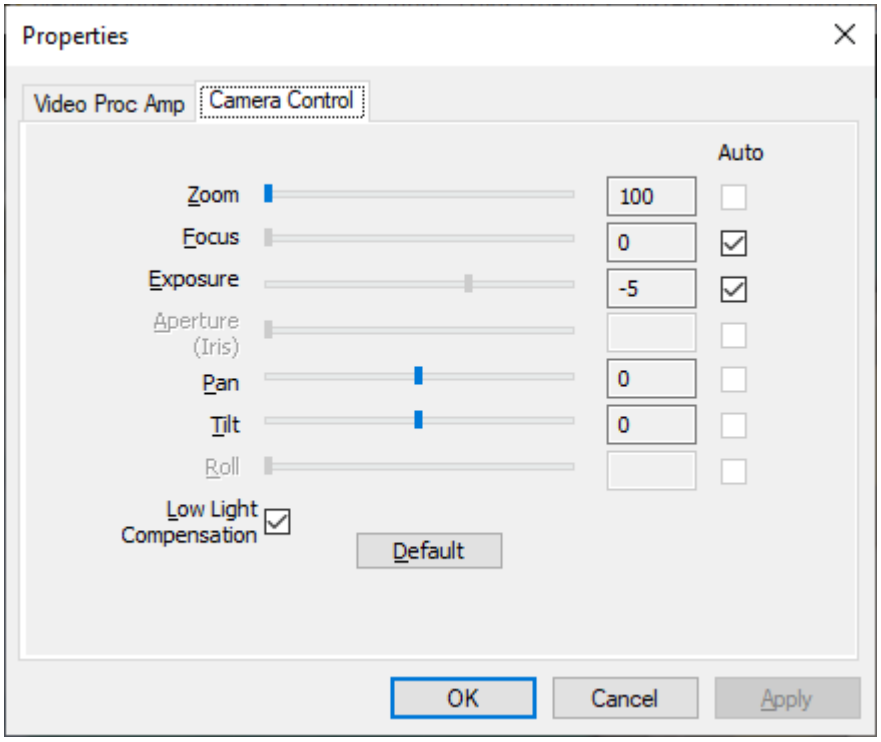
The Video Proc Amp provides a number of controls. Your device may or may not use these controls.

Brightness – adjust the brightness, or light to dark balance
Contrast – adjust the contrast
Hue – adjust the hue, or color cast if any
Saturation – adjust the saturation, or how rich the color is
Sharpness – adjust the sharpness of edges
Gamma – adjust the gamma (color)
White Balance – adjust the location of the white point for white balancing the device
Backlight Comp – adjust the overall scene to compensate for any back lighting.
Gain – adjust any gain that has been applied to the output levels
ColorEnable – in some devices, enable color output
Powerline Frequency (anti flicker) – switch between 60 Hz and 50Hz to compensate

for powerline frequency mismatch induced flicker.
Default – reset to default settings
OK – Press OK to close the configuration
Cancel – close the configuration without making any changes.
Apply – enable any settings that have been changed and close the configuration.

Camera Control

The second tab is the Camera Control.



The Camera Control provides a number of controls. Your device may or may not use these controls.

Zoom – zoom in or out
Focus – adjust the focus
Exposure – adjust the exposure
Aperture (Iris) – adjust the aperture, or iris of the camera
Pan – in PTZ cameras, adjust the pan
Tilt – in PTZ cameras, adjust the tilt.
Roll – in specific cameras, adjust the roll
Low Light Compensation checkbox – sets the camera to use an auto gain for low lighting
Default – reset to default settings
OK – Press OK to close the configuration
Cancel – close the configuration without making any changes.
Apply – enable any settings that have been changed and close the configuration.

Setup

Install the Software

Install **DrasticScope** software on the system. Regardless of the delivery method, the software will be available at some level as an (executable) installable file. Double-click on the file, or right click and select **Open** from the context menu. Follow the prompts to set where the software should be installed and make other installation-specific decisions.

To take full advantage of the hardware based features of **sdiScope**, the system should contain one of the supported AJA, Blackmagic, DekTec, or Bluefish444 boards. Here are some economical options for various SD and HD workflows. The board's manufacturers will have the most up to date information for system specifications and recommended drivers.

- Bluefish444: Epoch Supernova, Epoch Neutron, KRONOS
- AJA: KONA LHe/plus, KONA LHi, KONA 3G, KONA 4, KONA IP, KONA 5, KONA HDMI, Io-XT, Io-4K, OEM2K, Corvid Series, U-TAP
- Blackmagic (version 11/12 drivers required): UltraStudio, DeckLink, Intensity Pro, Intensity, Mini Recorder, UltraScope, HyperDeck, Ursa, BMPCC
- Inogeni: 4K, 3G, DVI, VGA/CVBS
- Magewell: HDMI and SDI USB-3 devices
- Logitech: HDMI Screen Share
- Elgato: Game device capture devices
- Mokose: HDMI/SDI USB-3
- Epiphan: AV.io HDMI/SDI/4K
- Digitnow: HDMI USB Capture
- Rybozen: HDMI USB Capture
- Microsoft: USB Cameras
- UVC: Most UVC (USB Video Class) compliant video devices

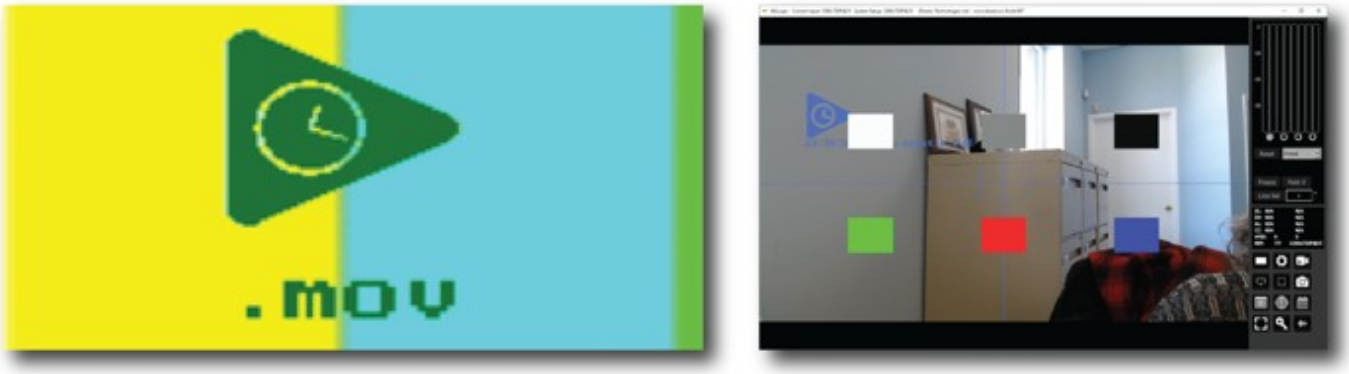
You can view the supported hardware page on our website for the latest information:

https://www.drastic.tv/support-59/supporttipstechnical/81-supported-audio-video-hardware

License the Software

How Do I Remove the Watermarks?

If you run Drastic software without a license, many of the features will be unavailable. Also, there will be watermarks you cannot remove (image below), 10 second media duration, length of run limitations, no hardware support, nag screen, auto-shutoff, and other significant limitations. To remove these limitations, you will need a valid license.



Sample watermarks

In order to license DrasticScope, open DrasticScope and navigate to the Settings ("Gear" icon at the bottom right of the application). Next click on the "License" button at the bottom of the Settings menu box and then follow the steps at the following location: http://license.drastictech.com/

Run the Software

Run the software. If the default installation path is used, you can open it at: **Start|Programs|DrasticScope**. The software will then need to be set up.

Setup Window

Confirm that the signal you wish to monitor is connected to the correct input(s) of the video board. Click on the **Setup** button to confirm or adjust any settings for the type of signal format being used. Once the system is correctly set up, pressing the **Done** button closes the **Setup** window.

Operations

sdiScope can be used to view an input signal through its range of waveform/vectorscope tools. Supported sources include:

- AJA hardware
- Bluefish444 hardware
- Blackmagic hardware
- DekTec hardware
- USB/DirectShow/UVC devices

Once a capable system has been equipped with an install of DrasticScope, the user may connect a signal to the appropriate inputs and begin to use the software.

Multiple inputs may be connected to a switcher to compare and adjust any mismatched parameters of setup.

Use the **Setup** Window to confirm or adjust any settings for your video signal.

Use the **Scope Config** window to set the layout (number and arrangement of windows), and which window uses which scope.

At this point if all has been properly set up, the user should be able to view their signal through the appropriate scopes and other signal analysis tools.

Controlling DrasticScope

Zoom and Pan

sdiScope supports zooming the waveform monitors and vectorscope for a closer look at low saturation signals, or the luma elements of the waveform. The live picture can also be zoomed in or out, and panned with the mouse.

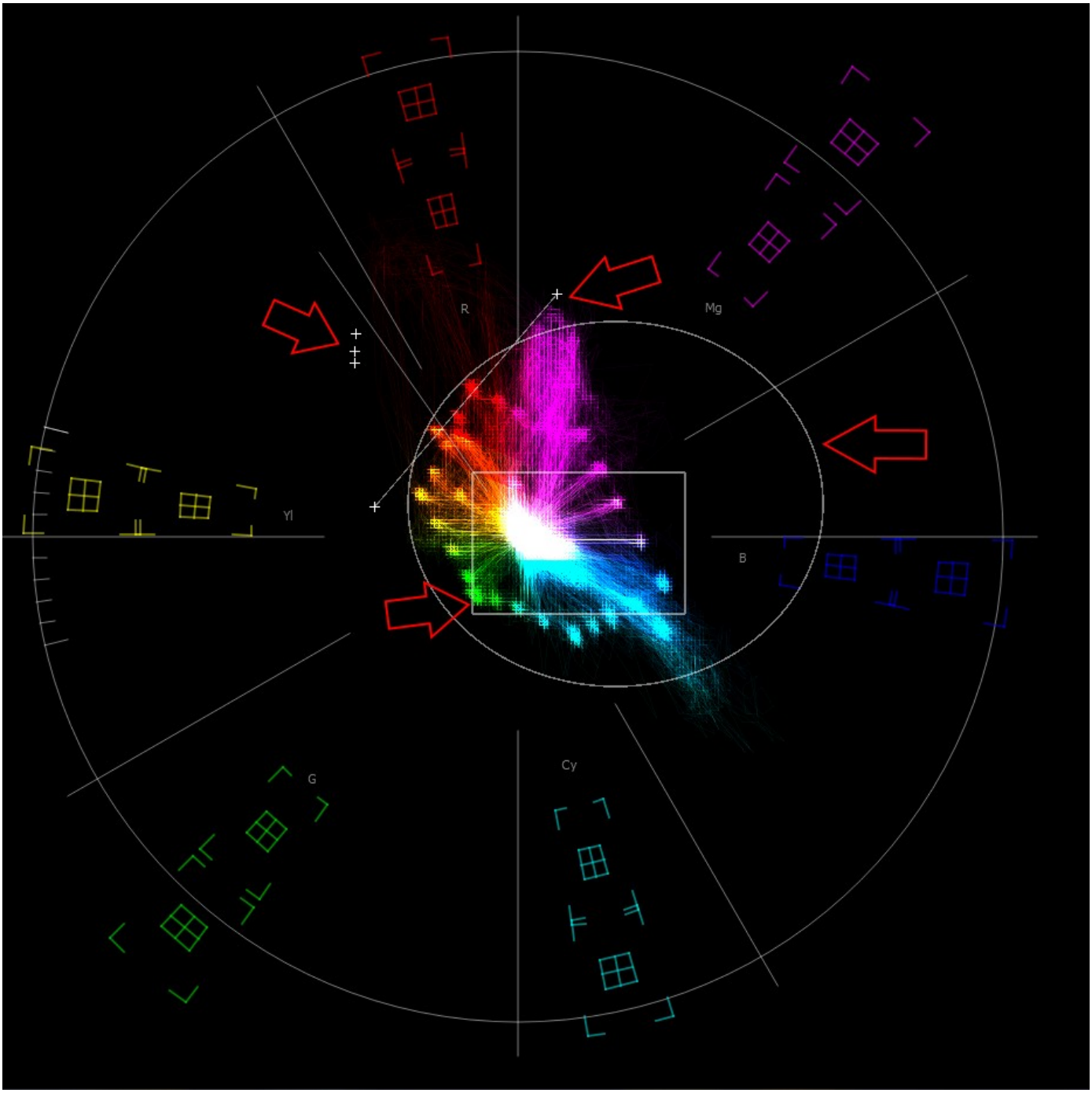
To zoom, place the mouse over the picture or scope, and roll the mouse wheel.
To pan the picture, click on it and drag it until the area of interest is visible.
To reset to normal zoom, right click the mouse.

Mouse Control

sdiScope features extended mouse controls. These include:

<MouseWheel> - zoom in and out symmetrical
<MouseWheel><Alt> - zoom X axis
<MouseWheel><Ctrl> - zoom Y axis
<RightClick> - reset zoom to view all
<LeftClick>Drag - pan and scan the video image in the app
<MiddleClick> - zoom 1:1
<DoubleLeftClick> - enter and exit full screen mode
<T> - enable or disable time code display in full screen

Making Marks/Guides (cross, line and box)



<SHIFT><LeftClick> - Make a point/cross
<SHIFT><ALT><LeftClick> - Undo last
<SHIFT><CTRL><LeftClick> - Drag to make a line
<SHIFT><CTRL><ALT><LeftClick> - Drag to make a box
<CTRL><ALT><LeftClick> - Drag to make an ellipse
<SHIFT><RightClick> - Clear all markers/guides

Version Comparison

The below chart shows the feature differences between the different versions of DrasticScope.

	Free	SDI	4K	HDR	NetX
Main Screen					
Scopes Layout: Max Scopes	2	4	6	6	6
On-GUI audio Meters	2	8	16	16	16
Audio Pair selector buttons		y	y	y	y
Hold Peak/Hold RMS, and Reset		y	y	y	y
MaxFALL/CLL				y	y
Freeze and freeze type			y	y	y
Line Select			y	y	y
Status box					
TimeCode: DL, DV, AL	y	y	y	y	y
Closed Captions			y	y	y
VPID			y	y	y
Ref input			y	y	y
Vid Standard			y	y	y
Features					
Remote Desktop Access			y	y	y
Zoom and Pan		y	y	y	y
Signal Compare (Freeze and Freeze Type)			y	y	y
User Markers and Lines		y	y	y	y
Full Screen Mode			y	y	y
Front Panel Support			y	y	y
Multiple Input Mode			y	y	y
REST API			y	y	y
AJA Shared Mode			y	y	y
Adobe ScopeDirect Transmitter – view the output of Adobe in Drastic scopes			y	y	y
Avid ScopeDirect OpenIO – view the output of Avid in Drastic scopes			y	y	y
OpenFX ScopeDirect plugin – view the output of Resolve or			y	y	y

OpenFX editors in Drastic scopes					
AvVr3D ScopeDirect – use Drastic scopes in UnReal Engine			y	y	y
Scope Config					
Layout Options	2	4	6	6	6
Picture					
Picture	y	y	y	y	y
Action Safe Graticule		y	y	y	y
Title Safe Graticule		y	y	y	y
Graphic Safe Graticule		y	y	y	y
Picture Frame Graticule		y	y	y	y
Active Region Graticule		y	y	y	y
Vectorscope					
Graticule	y	y	y	y	y
100% Markers	y	y	y	y	y
75% Markers	y	y	y	y	y
Angle Marker	y	y	y	y	y
Intensity	y	y	y	y	y
Skin Tone Line		y	y	y	y
Color		y	y	y	y
Low Pass		y	y	y	y
YCbCr Waveform					
Graticule	y	y	y	y	y
Show Parade	y	y	y	y	y
Intensity	y	y	y	y	y
Scope White	y	y	y	y	y
Scale Type	y	y	y	y	y
Low Pass			y	y	y
Only Luma			y	y	y
Overlay			y	y	y
High/Low			y	y	y
Max HDR				y	y
RGB Waveform					
Graticule	y	y	y	y	y
Show Parade	y	y	y	y	y
Intensity	y	y	y	y	y
Scope White	y	y	y	y	y
Full Scale		y	y	y	y
Low Pass			y	y	y
Overlay			y	y	y
Histogram					
YCbCr		y	y	y	y
RGB		y	y	y	y
HSV		y	y	y	y

Luma		y	y	y	y
H/S Scope			y	y	y
Chromaticity					
Chromaticity scope		y	y	y	y
Triangles 601, 709, 2020, P3 gamut		y	y	y	y
Triangles ACES0, ACES1, Arri, BMD, DaVinci, Canon, V Gamut, RED, S-Gamut, ProPhoto, Adobe				y	y
Invert			y	y	y
Black			y	y	y
YCbCr Vector (Lightning Display)					
YCbCr Vector scope			y	y	y
Marks			y	y	y
Color			y	y	y
Intensity			y	y	y
Channel Plot (Double Diamond)					
Channel Plot scope			y	y	y
Graticule			y	y	y
Intensity			y	y	y
Y/C Peak					
Y/C Peak scope			y	y	y
Graticule			y	y	y
Intensity			y	y	y
Luma Peak					
Luma Peak scope			y	y	y
Graticule			y	y	y
Intensity			y	y	y
6 Bar Gamut					
6 Bar Gamut scope			y	y	y
Audio Vector					
Audio Vector			y	y	y
Graticule			y	y	y
mode selectors (Lissajousxy, Lissajous, Polar)			y	y	y
Audio Phase					
Audio Phase			y	y	y
Graticule			y	y	y
Audio Histogram					
Audio Histogram			y	y	y
Graticule			y	y	y
Amp/Scale selectors			y	y	y
Audio Wave					

Audio Wave			y	y	y
Graticule			y	y	y
Audio Spectrum					
Audio Specturm			y	y	y
Graticule			y	y	y
Controls			y	y	y
Audio Meters					
Audio Meters			y	y	y
Scale pulldown			y	y	y
Loudness Meters					
Loudness Meters			y	y	y
Config			y	y	y
Surround Meters					
Surround Meters			y	y	y
Controls			y	y	y
Status					
Status		y	y	y	y
ANC Monitor					
ANC Monitor			y	y	y
IP Timing					
IP Timing					y
Application Config (gear button)					
Video Input					
Video Input	y	y	y	y	y
12G Type					
12G Type			y	y	y
Video Format					
SD/HD	y	y	y	y	y
Up to 4K			y	y	y
Up to 8K				y	y
Color Format					
Color Format	8 Bit	8/10 Bit	8/10/12 bit		
Primaries					
Primaries			y	y	y
Transfer					
Transfer			y	y	y
Picture Mode					
Picture Mode (up/down converter)			y	y	y
Down Convert					
Down Convert (monitor setup)			y	y	y
Output					
Output			y	y	y
Closed Caption					

Closed Caption			y	y	y
Audio Input					
Audio Input	y	y	y	y	y
Audio Scale					
dbFS RMS	y	y	y	y	y
dBu EBU R68 (+18) dBu EBU R68 (0) dBu EBU PPM dBu BBC PPM LUFS -23 EBU 9 LKFS -24 US 9			y	y	y
Board Type					
Auto Select		y	y	y	y
NIC SMPTE 2110					y
Network Video streams					y
AJA	y	y	y	y	y
AJA Shared			y	y	y
Bluefish444	y	y	y	y	y
Blackmagic	y	y	y	y	y
UltraScope			y	y	y
DekTec	y	y	y	y	y
Matrox			y	y	y
USB/DirectShow/VFL/ AVF (Mac)	y	y	y	y	y
NDI In			y	y	y
Desktop			y	y	y
Adobe ScopeDirect			y	y	y
Avid ScopeDirect			y	y	y
OpenFX ScopeDirect			y	y	y
Assimilate ScopeDirect			y	y	y
AvVr3D ScopeDirect			y	y	y
Board Select					
Board Select	y	y	y	y	y
Preferred Scan					
Preferred Scan	y	y	y	y	y
Active Region					
Active Region			y	y	y
Auto Follow Input					
Auto Follow Input	y	y	y	y	y
Scope VBlank					
Scope VBlank			y	y	y
Play Audio Computer Speakers					
Play Audio Computer Speakers	y	y	y	y	y
Audio Channels					
Audio Channels			y	y	y
Audio Pairs					
Audio Pair selectors in			y	y	y

Config menu					
Hide Unavailable Options					
Hide Unavailable Options	y	y	y	y	
Check for New Versions on startup					
Check for New Versions on Startup checkbox	y	y	y	y	y
Check for Updates					
Check for Updates button	y	y	y	y	y
License					
License	y	y	y	y	y
Done					
Done	y	y	y	y	y
Open IP (IP cam icon)					
Select NDI			y	y	y
Select SRT, RTP, UDP, RIST Types					y
2110 IP Config					y
Display Modes					
Luma Only, Red/Blue/Green Only, Focus Assist		y	y	y	y
Zebra Luma, Zebra Chroma, Clipping, Edge Difference, Calibrate, Flip Flop, Show Alpha, Opacity, Luma Key, Green Screen Key, Chroma Key Despill, Chroma Key Simple, Neutral			y	y	y
Manual					
Manual button (opens the manual)	y	y	y	y	y
Image/Preset (camera icon)					
Capture Display		y	y	y	y
Capture Frame (JPG)		y	y	y	y
Save Frame		y	y	y	y
Load Frame		y	y	y	y
Save Preset			y	y	y
Load Preset			y	y	y
Hex/Data View					
Hex View w Ancillary data display			y	y	y

Web GUI (Globe icon)					
Web GUI w Event Sensitivity			y	y	y
Events/Error Log					
Events/Error Log			y	y	y
Info/Splash screen					
Info/Splash screen	y	y	y	y	y
Area Select					
Area Select			y	y	y
License (key icon)					
License	y	y	y	y	y
Audio Routing					
Audio Routing			y	y	y
Webcam proc amp Setup					
Webcam proc amp Setup			y	y	y

This manual has been compiled to assist the user in their experience using **DrasticScope** software. It is believed to be correct at the time of writing, and every effort has been made to provide accurate and useful information. Any errors that may have crept in are unintentional and will hopefully be purged in a future revision of this document. We welcome your feedback.

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