



### 4KScope Overview

4KScope lets you view up to 4K files through a vectorscope, waveform monitor, histogram, chromaticity and raw pixel display for signal review and device calibration.

4KScope provides an economical solution for accurate signal review and comparison with quick access to overall range and tone, down to the tiniest of details, with safe markers and standard graticules.

### The Drastic Advantage

4KScope replaces expensive signal analysis devices with its slate of video calibration and measurement tools.

Version 3.0 of 4KScope includes zoom, safe zones, line/dot, line/area select and support for everything from SD to 4K 60p for AJA, BlueFish444 and Blackmagic video boards.

### Features

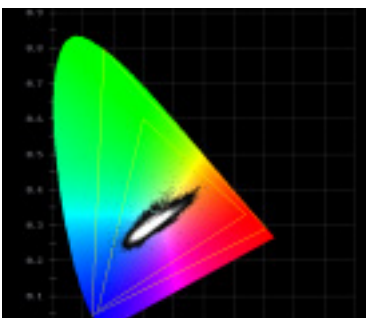
- Chromaticity** - 601, 701, and 2020 triangle markers, invert
- Vectorscope** - 75% and 100% marks, skin tone line, angle marker and the Drastic Luma Stick.
- Waveform Monitors** - RGB, YCbCr.
- Histogram** - tonal range of color in RGB.
- Pixel display** - raw pixel values in hexadecimal or decimal.
- Real Time Data** - time code, keycode, AFD, Inkcode, closed caption.
- Review** - Hardware and VGA/DVI payout.
- Zoom and Pan** - closely examine image detail.

Y(64.942) Cb(176.850) Cr(176.850)

LTC:	00:00:00:00	0x00000000	VITC:	<not present>	<not present>
RP-188L:	01:09:09:12	0x00002500	RP-188V:	01:09:09:12	0x00002500
RP-215L:	<not present>	<not present>	RP-215V:	<not present>	<not present>
KEY:	<not supported>		INK:	<not supported>	
AFD:	0		BCF:	0	
Dolby:	<not supported>		CC:	<not supported>	<not detected>

Graticule  
 100% Marks  
 75% Marks  
 Angle Marker  
 Skin Tone Line  
 Luma Stick  
 Connect  
 Intensity: 100%

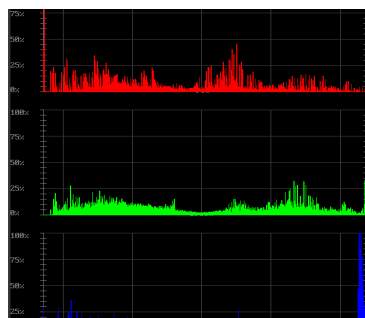
### Views



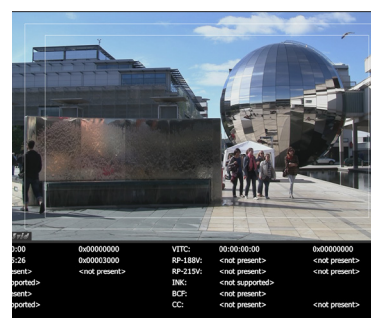
Chromaticity



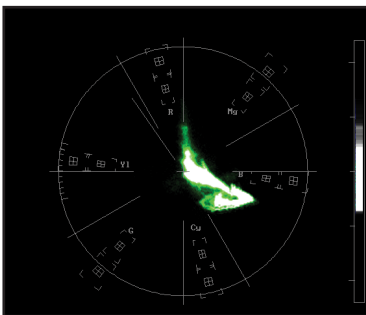
Closed Captions



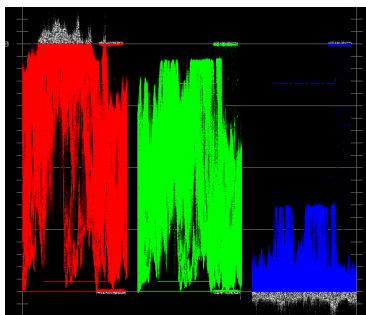
Histogram



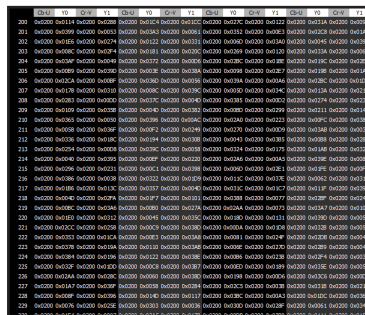
Action/Title Safe



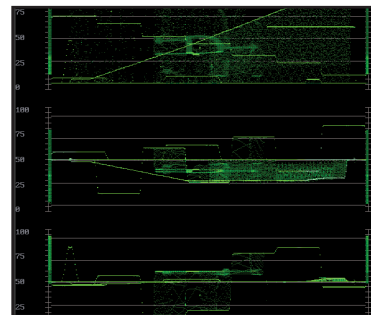
Vectorscope



RGB Waveform Monitor



Data/Pixel Display



YCbCr Waveform Monitor

### Video/Audio Inputs (hardware dependent)

- Single Link SDI/HD-SDI
- Dual Link HD-SDI
- Quad Link HD-SDI (Quad HD and 4K)
- 3G Dual Link
- 3G Dual Rate
- QHD/4K Quad Link and 2 sample interleave
- HDMI
- CCIR-601 (SD), Rec.709 (HD), BT.2020 or Rec.709 (QHD/4K)
- Analog inputs (with an alternate video board)
- Embedded audio, up to 16 channels (hardware dependent)
- AES/EBU audio, up to 16 channels (hardware dependent)
- Analog audio (with an alternate video board)

### Metadata

- LTC/SMPTE analog time code and user bits
- VITC/D-VITC vertical blank time code and user bits
- RP-188 HANC time code and user bits
- RP-215 VANC time code, user bits, key code and ink code
- Active Format Description detection
- HD line 9/SD line 21, OP-47/CEA-708/CEA-608 closed captions

### Output

- Main output designed for a standard DVI 1920x1080
- Secondary down converted output available
- SD/HD/2K down conversion to HDMI and analog
- HDMI 4K quadrant output

### Multiple Format Support (hardware dependent)

- SD - PAL/NTSC
- 720p - 23 / 24 / 25 / 29 / 30 / 50 / 59 / 60
- 1080i - 23 / 24 / 25 / 29 / 30
- 1080psf - 23 / 24 / 25 / 29 / 30
- 1080p - 23 / 24 / 25 / 29 / 30 / 50 / 59 / 60
- 2K Digital Cinema (2048 x 1080) - 23 / 24 / 25
- 2K Film (2048 x 1556) - 14 / 15 / 23 / 24
- Quad HD/QHD (3840 x 2160) - 23 / 24 / 29 / 30 / 50 / 59 / 60
- 4K (4096 x 2160) - 23 / 24 / 29 / 30 / 50 / 59 / 60

### Processing Modes

- YCbCr 8 bit 4:2:2
- YCbCr 10 bit 4:2:2 (standard single link)
- RGB 8 bit 4:4:4
- RGB 10 bit 4:4:4 (standard dual link)
- Full active picture
- Up to 32 lines of vertical blank
- HANC processing for audio and time code

## Applications

**Device Calibration** - confirm accurate signal processing.

**Facility Commissioning** - compare the chrominance and luminance output of multiple devices.

**4K Signal Analysis** - up to 4K video support.

**Detail Examination** - zoom and pan capability.

**File SQA** - view files to confirm safe area, color and tone balance and other standard delivery parameters.

**Closed Caption Display** - decode OP-47/CEA-708/CEA-608 closed captions

**Product Testing** - testing and development of professional video products