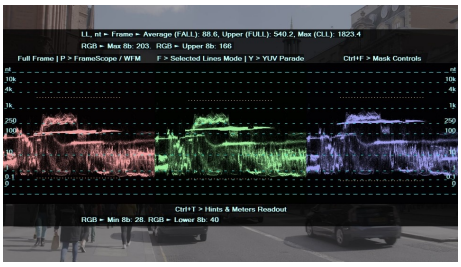
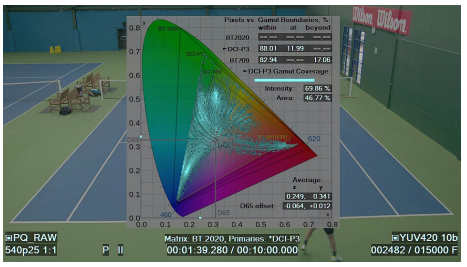
VQV – Media Files Viewer-Analyzer

RGB, YUV and LL Meters Bargraphs

Waveform – HDR-PQ RAW Mode



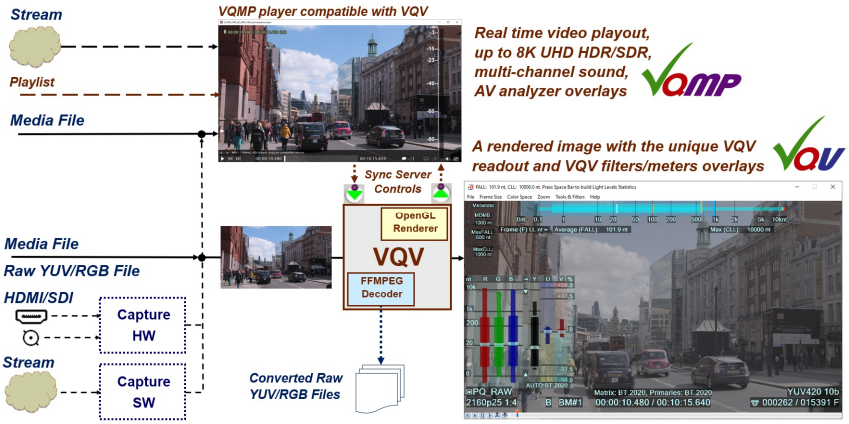
ChromaScope – Color Gamut Checker



Unique video data analysis and fidelity verification tool for the file-based environment

- Augmented Intelligence software tool, instantly revealing your video device / system / workflow performance
- Multi-purpose tool nicknamed 'Swiss Army knife of Video Engineer'
- Wide range of frame sizes, input and output formats, rendering modes and artifacts revealing filters
- VQV opens and decodes any wrapped/compressed video or image file (all formats supported by ffmpeg)
- In addition, VQV reads/plays/converts RAW data files in YUV/Y4M/RGB/BMP formats

Workflow



Features

- 4th generation of VideoQ advanced viewer-analyzer-converter
- Software executable under Windows™, USB dongle copy-protected
- Variety of compressed and uncompressed video file formats, frame sizes from 192x108 up to 7680x4320 (**8K**)
- Via sync server VQV controls VideoQ VQMP – real-time media player
- Comprehensive Transfer Function (DR Mode) automatic and manual controls:
  - HDR-PQ
  - HDR-HLG
  - LOG
  - SDR and various HDR to SDR Conversion options
- Comprehensive Color Space controls:
  - YUV ⇔ RGB Matrices: BT.601, BT.709, BT.2020/BT/2100
  - RGB Primaries: BT601(525), BT.601(625)/BT.709, DCI-P3, BT.2020(WCG)
  - YUV ⇔ RGB Levels Mapping Schemes: Narrow Range / Full Range
- Built-in Dynamic Range and Color Space Converters for instant preview of various rendering modes
- Smart timeline navigation: Stop, Play, Pause, Step, Slider, AB Loop, 9 editable Bookmarks, 'Go to' dialog, Timecode and speed display

Tools:

- Color Picker – readout of current pixel RGB / YUV / LL (Light Level) values
- Active Frame Size (Letterbox / Pillarbox) Meter and Indicator
- Smart YUV/RGB Waveform Monitor
- FrameScope™ – Frame Lines RGB Profile
- ChromaScope – Color Gamut Analyzer
- Smart VectorScope – UV data Analyzer
- RGB and Light Levels Histograms
- L-Bar™ – Light Levels Statistics Analyzer
- C-Bar™ – Bitrate & GOP Analyzer
- VV-Bars™ – RGB & YUV BarGraphs
- LL Highlighter and LL Heatmap
- Noise and Activities Meter
- Selection of Graticules Units: % of RGB Range, % of LL Range, nits
- Media Info Report Generator
- Frame Info Report Generator
- Smart Metadata Validator
- Current frame screenshot, *BMP with optional timestamp*

Filters:

- MSB / LSB View
- Displayed image channel(s): RGB, R, G, B, Y, UV, LL components
- Temporal (Inter-frame) High-Pass Filter
- Spatial (Intra-frame) HPF and LPF
- Video gain (up to x16) and level offset, *full frame or within the adjustable mask*

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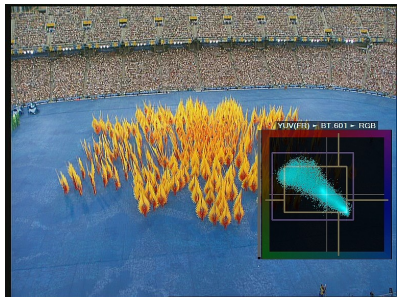
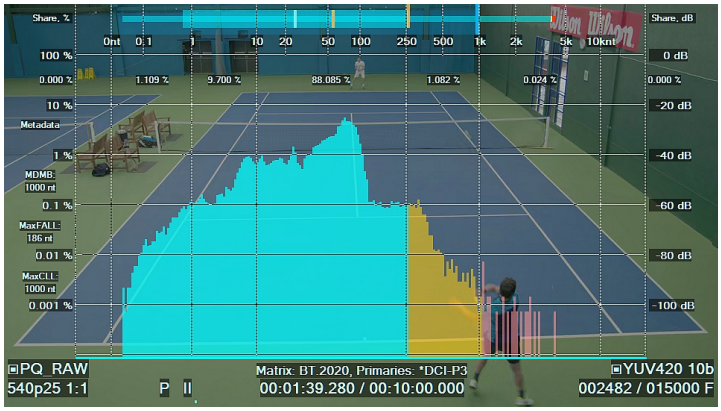
Examples of VQV Tools Usage

Smart VectorScope analyzing archive PAL footage

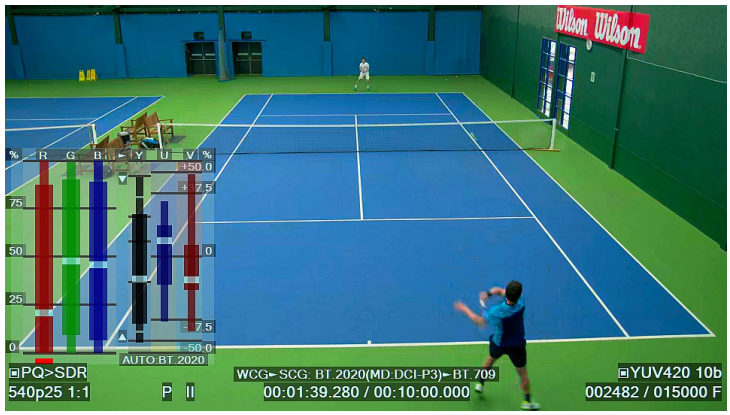


VectorScope shows that for the dominant Yellow and Orange colors the corresponding UV vectors are quite strong, i.e. this image is not affected by typical saturation drop down artifacts.

L-Bar™ and HDR-PQ Light Levels Histogram



VV-Bars™ – HDR-PQ WCG converted to SDR SCG



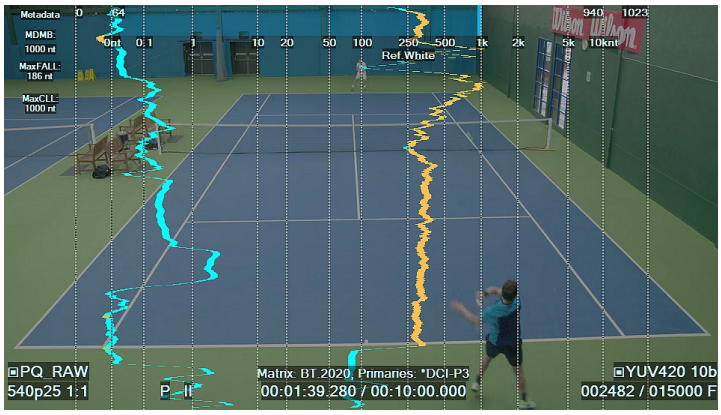
After HDR to SDR conversion the statistics of RGB levels looks good:

- *Peaks (tips of narrow bars) are reaching 100% in all 3 RGB channels*
- *Upper levels (tips of wider bars) are about 85%, i.e., contrast is good.*

Median levels (light Cyan highlights) clearly show the dominance of Green and Blue colors within this image.

Red Bar hits 0% marker and there is 'Black Crush' warning rectangle underneath it, thus indicating that WCG to SCG conversion resulted in oversaturated Blue and Green colors, which is subjectively acceptable.

FrameScope™ – HDR-PQ Light Levels Frame Profile



*About 1% of the image pixels are brighter that the **Unified Reference White** level of 250 nit; Light Levels above **URW** are shown in Yellow.*

Histogram overlay shows that small number of pixels have Light Levels above the specified display 1,000 nit limit, such events are shown in Red.

L-Bar Upper Level (thick bar tip) is just a bit higher than URW, which is acceptable.

L-Bar shows that Frame Average Light Level is about 60 nit, i.e., this image is good – not too dark, nor too bright.

Because the share of pixels brighter than 1,000 nit is very small (0.024%) the FrameScope default filter excluded them from displayed profile.

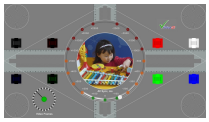
VideoQ, Inc. – Critical Picture Quality Technologies for Broadcast, Consumer Electronics, Transcoding, Video Data Compression, HDR, UHD, WCG, SDR, SD, HD, Digital Cinema, CDN, Mobile TV, IPTV.

We make tools for you to do the best work within the most complicated modern HDR / WCG / SDR video supply chains and multi-format, multi-resolution workflows. We make automatable software for Video Formats Conversion, Video Parameters Normalization, Video Processing Chain Integrity & Performance Validation.

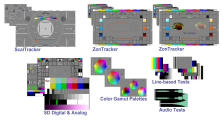
Detailed Training Presentations and more information are available from VideoQ website, VideoQ Technical Blog and VideoQ YouTube Channel.

Related VideoQ products:

MPC
Multi-purpose Test Chart



VQL
Library of Advanced Test Patterns



VQMA
Video Analyzer and Scope

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