

# VideoQ Products & Technologies

*Presentation*

*September 2025*



VideoQ Products

VideoQ Products Use Cases

[videoq.com](http://videoq.com)

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# 1. About VideoQ

## Customers & Partners



## Company History



- Founded in 2005
- Formed by an Engineering Awards winning team sharing between them decades of global video technology.
- VideoQ is a renown player in calibration and benchmarking of Video Processors, Transcoders and Displays, providing tools and technologies instantly revealing artifacts, problems and deficiencies, thus raising the bar in productivity and video quality experience.
- VideoQ products and services cover all aspects of video processing and quality assurance - from visual picture quality estimation and quality control to fully automated processing, utilizing advanced VideoQ algorithms and robotic video quality analyzers, including latest UHD and HDR developments.

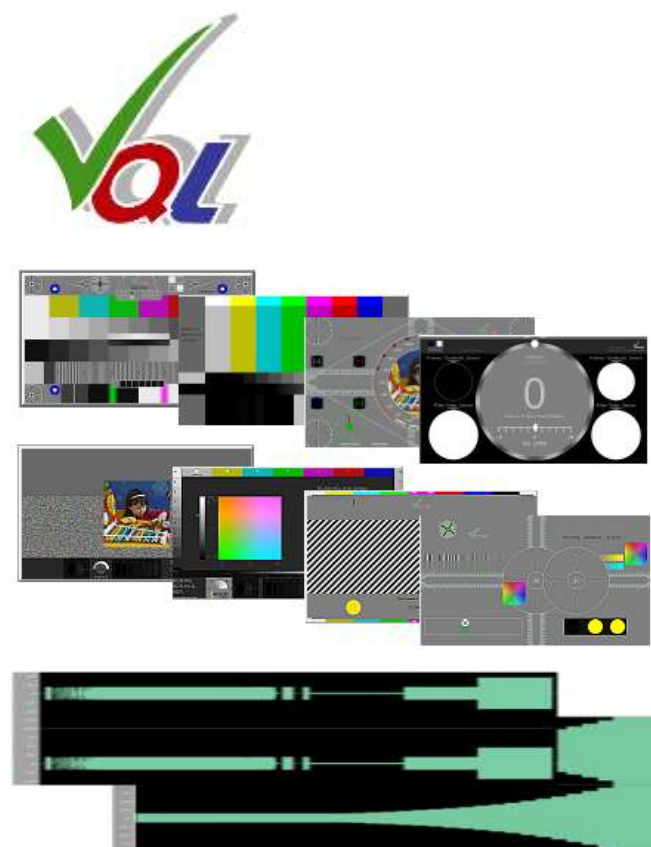
## Operations

- Headquarters in CA, USA
- Software developers in Silicon Valley and worldwide
- Distributors and partners in several countries
- Sales & support offices in USA, UK



## 2. VideoQ Product Lines

- [VQL](#) – Comprehensive Library of sophisticated test patterns
- [VQPT](#) – Suite of Productivity Tools for cloud transcoding & streaming
- [VQV](#) – Video Files Viewer-Analyzer
- [VQMP](#) – Media Player-Analyzer
- [VQTS](#) – Complete Video Quality Test Systems
- [VQDM](#) – Video Latency & AV Sync Analyzer



### 3. VQL – Video and Audio Test Patterns Library

- VideoQ static and dynamic test patterns are available in a variety of video and audio formats, aspect ratios and frame rates, resolutions from 192x108 to 8K
- VQL files are designed to be compatible with all commonly used software or hardware codecs and media players
- All test patterns remain suitable for accurate measurements even after low bitrate coding, heavy scaling and/or cropping, color space and dynamic range conversion
- Full custom compressed and uncompressed test files and application-specific live video clips are available on request

Learn more about [VQL](#) Test Patterns

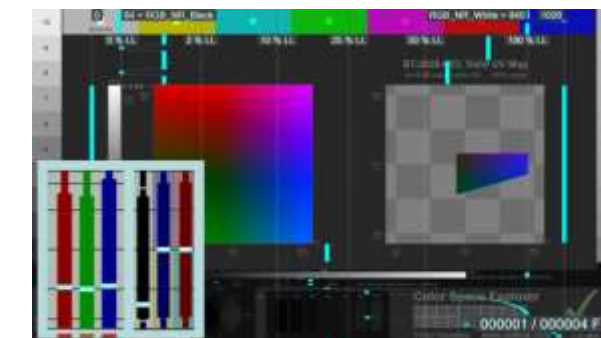
## 3.1 VideoQ Approach to Test Patterns Usage

VideoQ approach combines “classic”, “digital” and “cloud” methodologies, sharing **same test patterns** and covering all **3 levels of video quality control**:

Instant visual-aural quality estimation



Objective measurements of video and audio parameters



Fully automated Quality Control

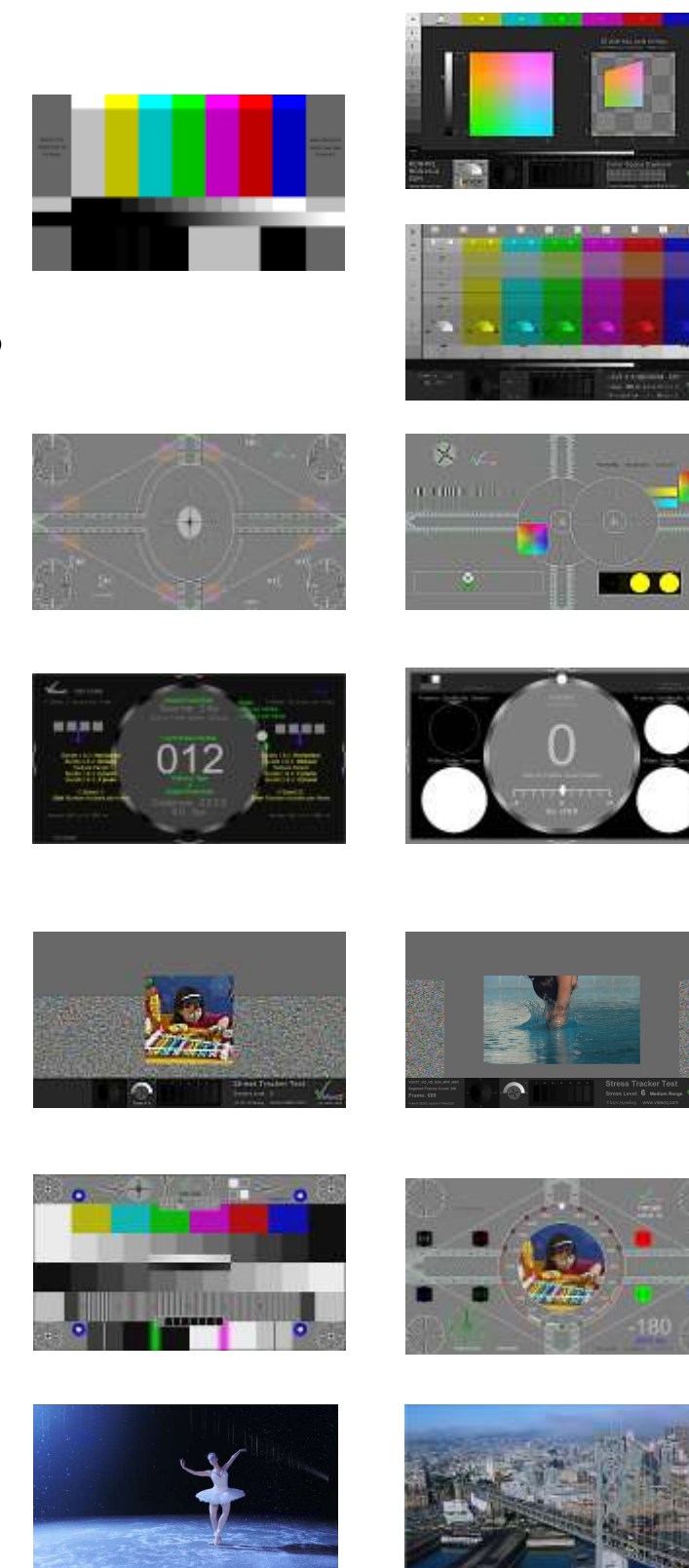


```
> (0) "header": {} (11)
> (0) "generalFileInfo": {} (25)
> (0) "videoStream": {} (43)
> (0) "testConditions": {} (7)
> (0) "videoParameters": {} (19)
> (0) "activeImageFormats": {} (4)
✓ (0) "videoLevelsStatistics": {} (6)
  1."videoDataVolume_pct" "100.457"
  1."chromaDataVolume_pct" "36.935"
  1."averageU_pct" "-4.814"
  1."averageV_pct" "4.992"
```

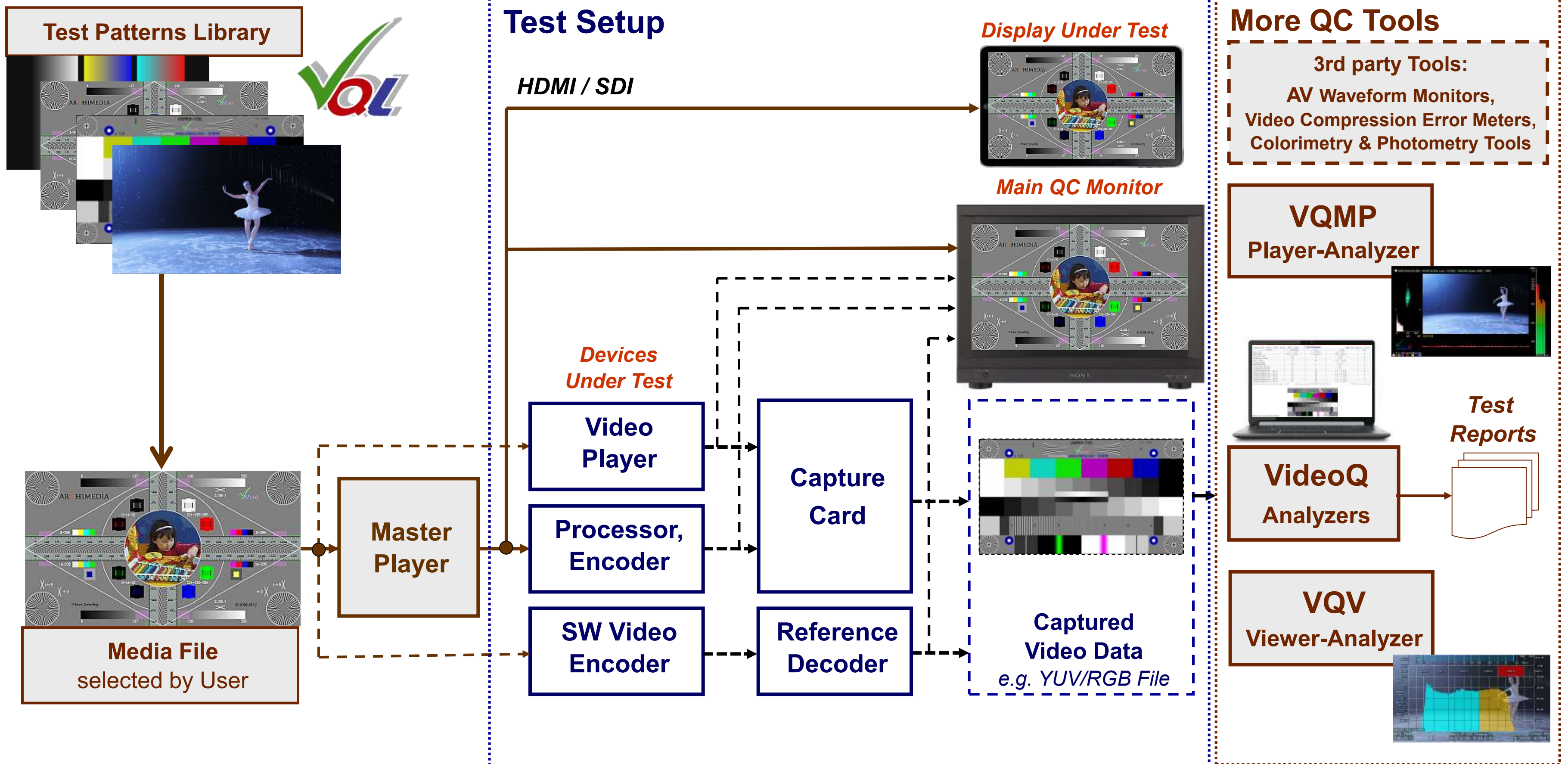


## 3.2 VideoQ Test Patterns by Categories

1. Color Space, Gradations and Linearity Tests – **GradTracker™** series,  
*including the widely used **VQCB Wonder Bars™** – VideoQ Color Bars suite*
  - 1.a Special **HDR** (High Dynamic Range) Tests, **HDR-PQ** and **HDR-HLG** versions
2. Geometry, Scaling, SR and Sharpness Tests – **ScalTracker™** series
3. Motion Portrayal Tests and AV Sync Tests – **ChronTracker™** series,  
*checking AV Latency, Frames Continuity, De-Interlacing, and more*
4. Compression Quality Tests – **StressTracker™** series
5. Static and Dynamic Multi-purpose Test Charts,  
*including widely used **VQCB**, **VQMA** and **VQMPC** tests*
6. Reference Live Clips in a variety of formats
7. Audio Tests



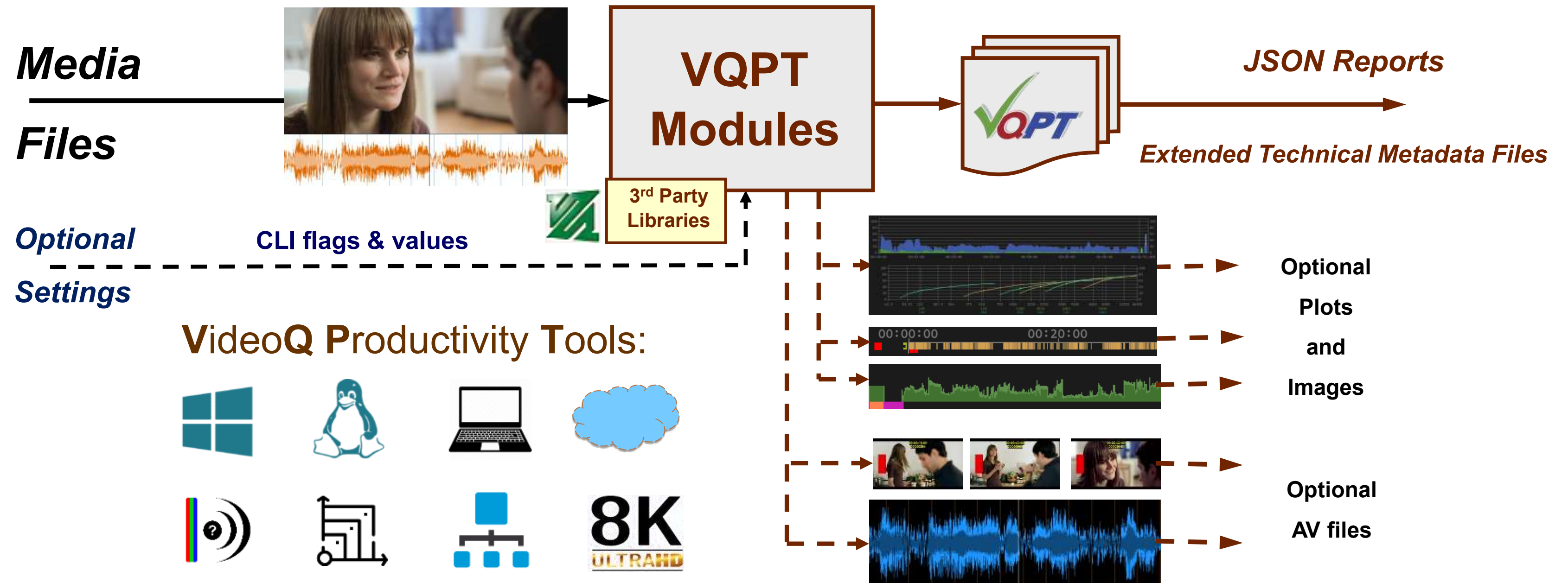
# 3.3 VQL Workflow Variants





## 4. VQPT – VideoQ Productivity Tools

**VQPT** is a suite of portable Windows/Linux CLI programs for on premises and cloud computing. It can be used for production, post-production and distribution applications. The program modules can be purchased and used separately or grouped for typical applications.



Learn more about [VQPT](#) and [VQPT Packages](#)

## 4.1 VQPT Packages

### Pack 1. Target Application: **Workflow Health Tests**

**VQMINF** – Media File Info Report Generator

[VQCBA](#) – Color Bars Analyzer, companion program for [VQCB](#) test patterns

**VQCSA** – Compression Stress Analyzer, companion program for [VQCST](#) test patterns

[VQMA](#) – Video Analyzer for objective video processing chain integrity tests

### Pack 2. Target Application: **AV Files Conversion, Encoding and Transcoding**

**VQMINF** – Media File Info Report Generator

**VQBIF** – BIF (Base Index Frames) Files Verifier

**VQBLA** – Bitrate Ladder Analyzer

[VQC](#) – HDR-SDR Files Converter

**VQCSA** – Compression Stress Analyzer, companion program for [VQCST](#) test patterns

[VQLPN](#) – Audio Loudness Profiler and Normalizer

**VQTSF** – Transcoding Segments Finder

### Pack 3. Target Application: **AV Content Analysis**

**VQMINF** – Media File Info Report Generator

**VQCFA** – Captions Files Analyzer

**VQFP** – Video Frames Profiler

**VQLPC** – Loudness Profiles Correlator, companion program for [VQLPN](#) module

[VQLPN](#) – Audio Loudness Profiler and Normalizer

**VQPLA** – Picture Levels Analyzer

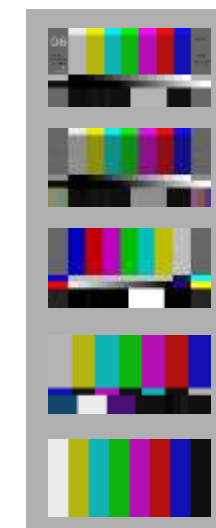
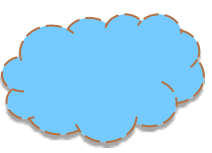
*Note that some modules are included in more than one pack, e.g., VQMINF is recommended for all three packages.*

## 4.2 VQCBA – Color Bars Analyzer

VideoQ Color Bars Analyzer:

- **Applications:** Video production, post-production, transcoding, distribution
- **CLI program** for **on premise** and **cloud** tasks, **Windows** and **Linux** versions
- **Software module** of **VideoQ Productivity Tools** suite
- **Companion program** for **VQCB Wonder Bars™** Test Patterns Suite
- **Video workflow verification** tool for the 8K / 4K / 2K, HDR / SDR environment
- **Easy-to-use tool**, instantly revealing your video device / system / workflow **performance**
- **Unattended automated analysis tool**, suitable for **workstations** and **cloud computing**
- **VQCBA auto-detects** and **process 5 different types** of color bars tests
- **Frame sizes:** from **480x270** to **8K UHD**
- **Dynamic range formats:** **HDR-PQ**, **HDR-HLG**, and **SDR**
- **Variety of color spaces, containers and encoding formats**, supported by **ffmpeg**

Learn more about [VQCBA](#)





## 4.3 VQC – Dynamic Range and Color Space Converter

**VQC** is a **Windows/Linux CLI** program that reads a **media file** or **sequence of image files**, measures its video frames parameters, **converts** the content to the specified **dynamic range** and **color space** format, then creates a **Report** in **JSON** format and optionally plot the output LL profile in **PNG** format.

Supported input and output **dynamic range** formats:

- **SDR**,
- **HDR-PQ**,
- **HDR-HLG**

Supported **color primaries**:

- **BT.709** (*aka NCG = Narrow Color Gamut*),
- **BT.2020** (*aka WCG = Wide Color Gamut*),
- **P3** (*aka ECG = Expanded Color Gamut*)

Supported **frame sizes**:

from **1920x1080** (HD)  
to **8192x4096** (8K)

Learn more about [VideoQ HDR Tools](#) and [VQC](#) Colorator™

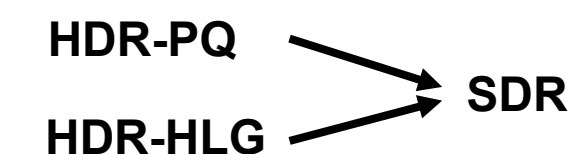
**SDR BT709 422p10**



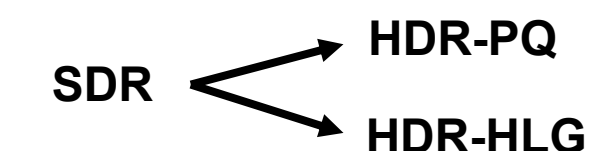
**HDR10 P3 BT2020 422p10**



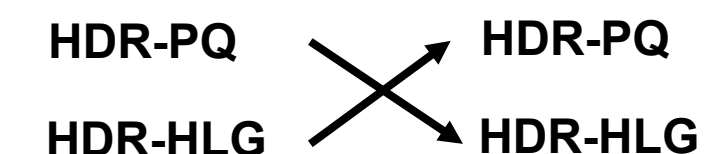
*DR Down-conversion*



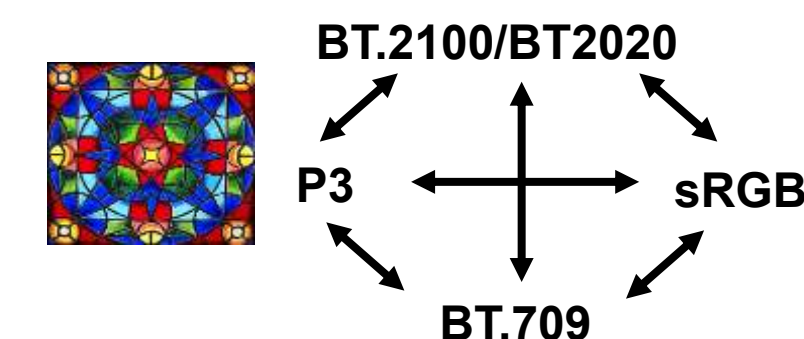
*DR Up-conversion*



*DR Cross-conversion*



*And Color Space Conversion*



## 4.4 VQLPN – Audio Loudness Profiler and Normalizer

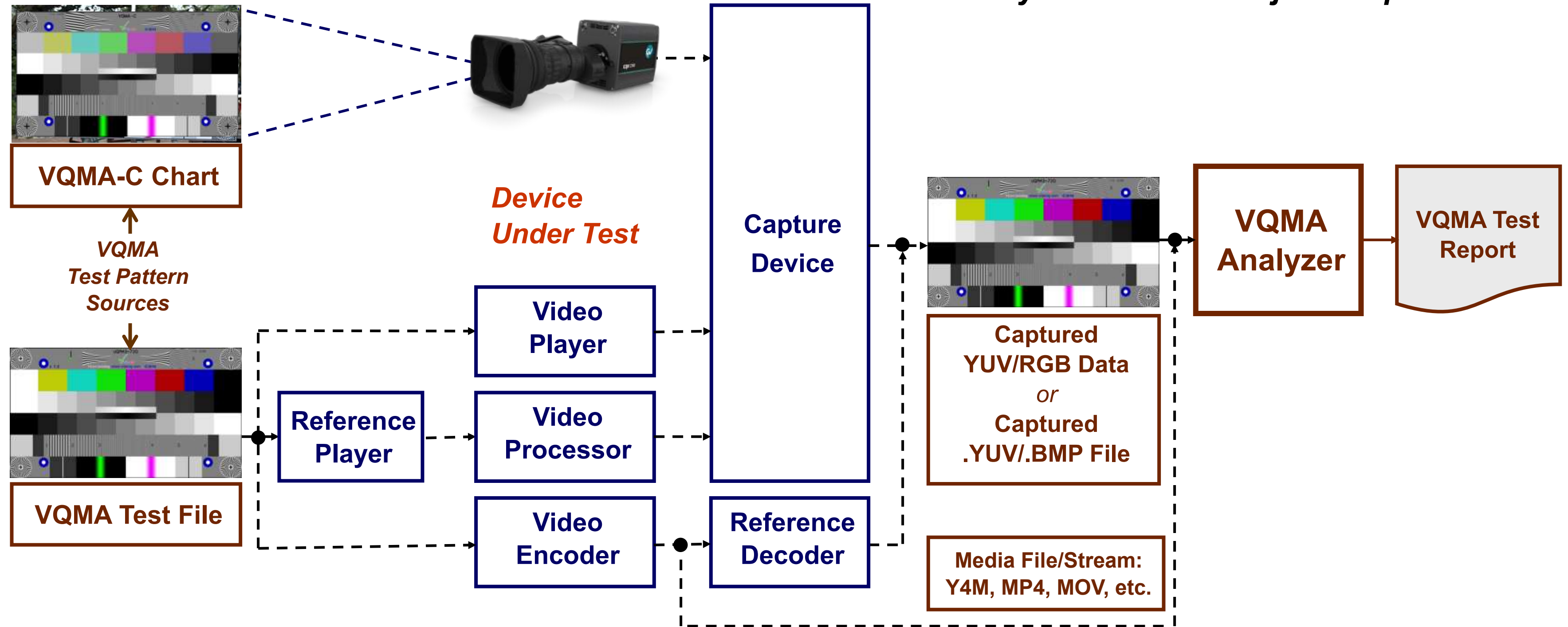
- VQLPN reads media file, containing audio stream(s), **measures** and **normalizes** audio **loudness**.
- VQLPN supports MP4, MOV, MXF, WAV, W64, AAC, AC3, EAC3, etc., and various audio stream formats:
  - any bit depth, bit rate and sampling rate, all audio codecs supported by ffmpeg
  - multi-channel and multi-track formats: **1.0, 2.0, 5.1, 7.1**
- It measures the audio stream loudness parameters in accordance with Recommendation ITU-R **BS.1770-4** (*USA **ATSC RP A85**, EBU **R128***). Editable \*.INI file stores test configuration and target parameters.
- Sorts audio segments by types (**regular audio, test tone, mute**)
- Finally, VQLPN creates detailed Report in JSON format, including **Momentary Loudness Profile** data array at 100 ms step interval
- Configurable outputs:
  - **Audio file** in the **desired format**, optionally **normalized** to the desired **Integrated Loudness** target
  - **PNG image file** showing **momentary loudness** time-line profile **plot**, **loudness** statistics **bargraph**, **upper levels histogram**, as well as other useful markers and values
- Optional stand-alone utility modules: **VQLPC Correlator**, **VQLPP Plotter**, **VQILM IL Meter**  
CLI interface: **vqlpn** [-j jsonFilePath] [-c configFilePath] -i inMediaFilePath [-o [outFilePath]]

Learn more about [VQLPN](#)

## 4.5 VQMA – Video Quality Software Analyzer

*Camera  
Under Test*

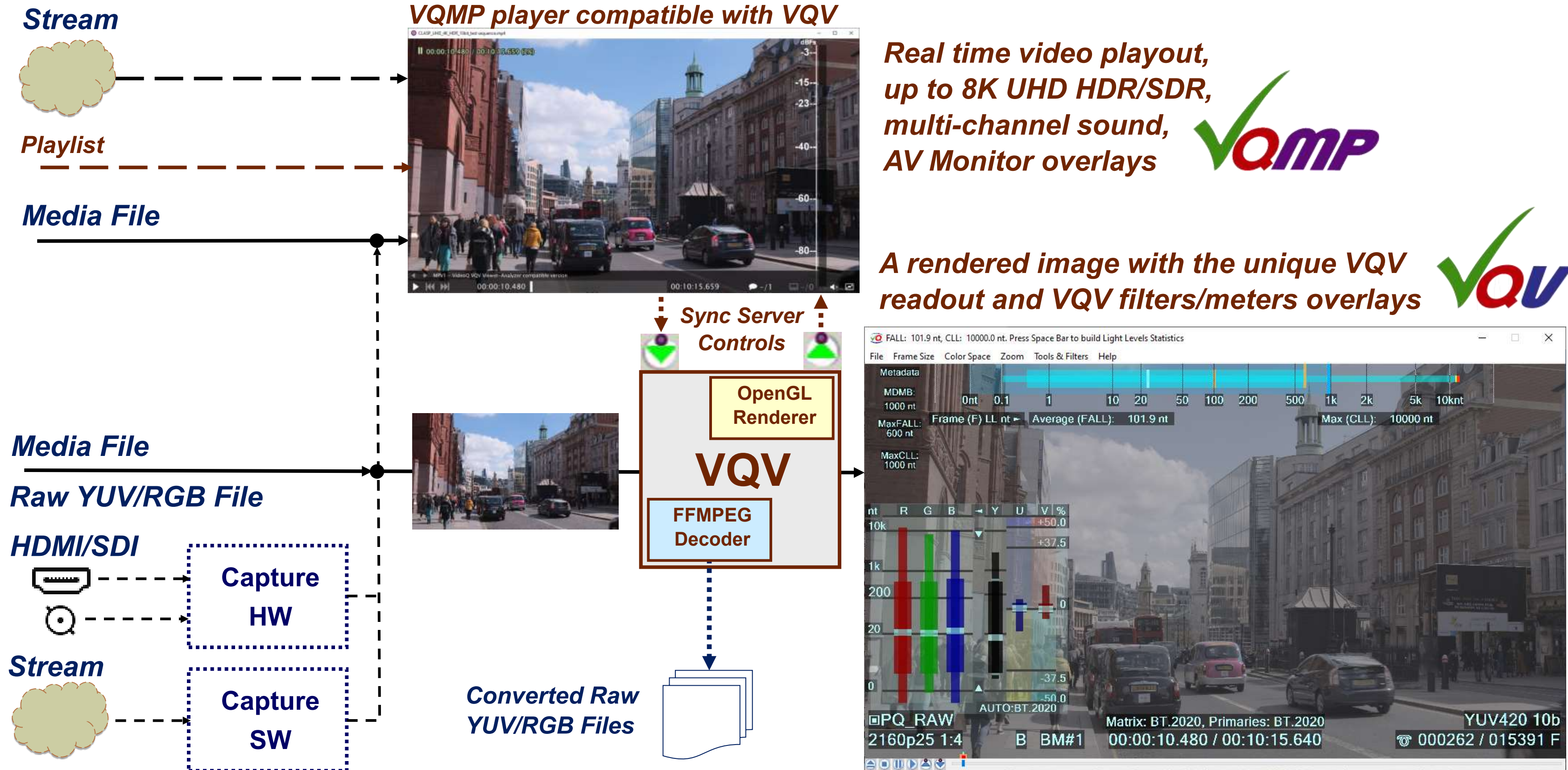
*VQMA software is used world-wide  
by a number of major companies.*



Learn more about [VQMA](#)



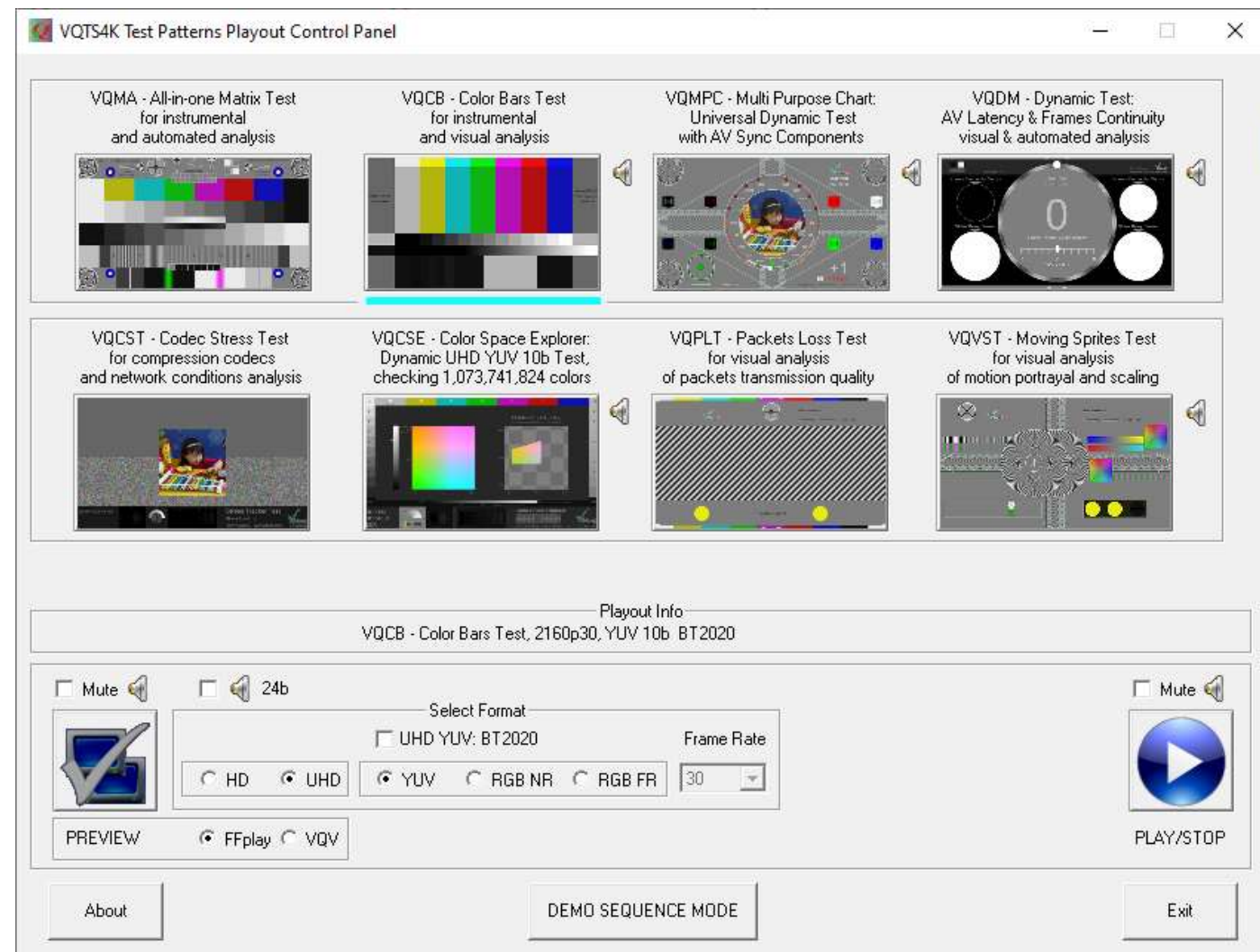
# 5. VQV and VQMP – General Concept



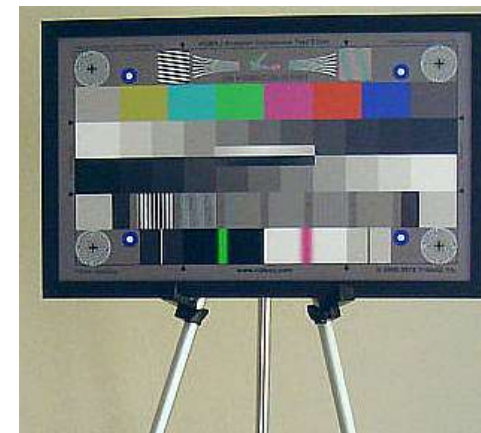


# 6. VQTS4K Top Level Block Diagram

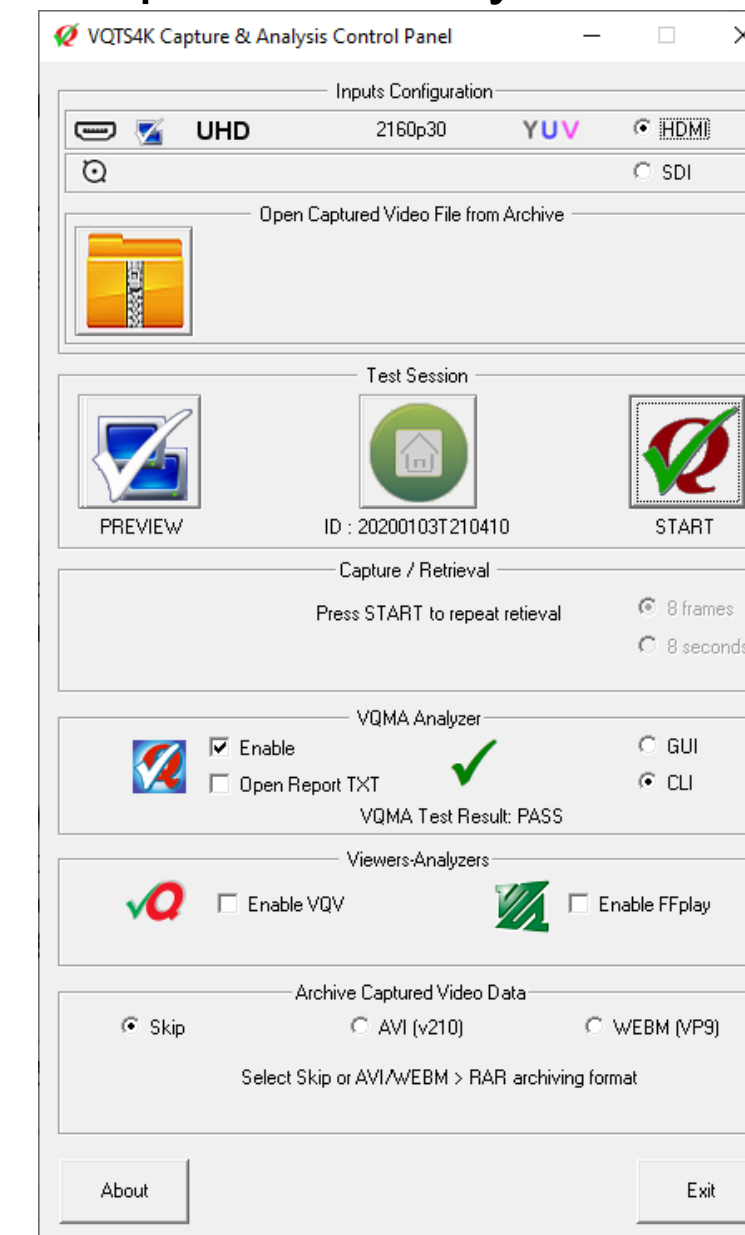
## Test Pattern Generator



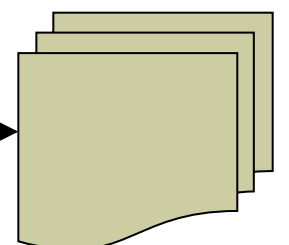
## Camera Test Chart Option



## Capture & Analysis Tools



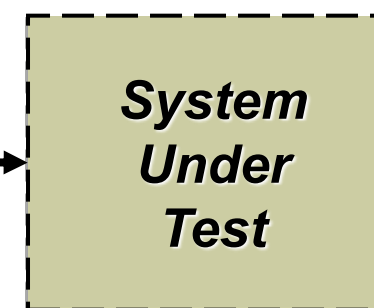
## Test Samples & Test Reports



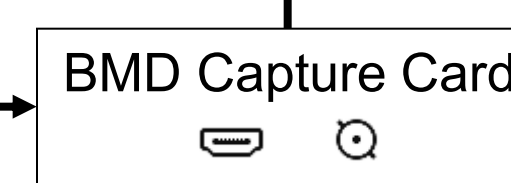
## Network Connectivity Options



HDMI or SDI



HDMI or SDI



Learn more about [VQTS4K](#)

Legacy products: [VQTS-300](#) [VQTS-200](#) [VQTS-100](#)

## 7. Appendix – More Info and Examples

# More Info and Examples



[VideoQ Products](#)

[VideoQ Products Use Cases](#)

[videoq.com](https://videoq.com)



## 7.1 VideoQ Philosophy of Media Data Processing



1. Modern cloud-based environment requires **fully automated modular tools** and a **smaller number of human operators** or **supervisors** should focus **only** on optional final checks and/or complicated cases.
2. And these operators must be equipped with appropriate **software tools and indicators** presenting all relevant parameters in a time-saving “easy to spot at a glance” way.
3. Automatically generated **Extended Technical Metadata** and **Reports** are must be and must cover:  
*Image aspect ratio, contrast, sharpness, sound loudness, noise and other unwanted components levels are among the most critical parameters affecting the subjective estimation of AV content quality.*
4. Traditional professional image & sound QA/QC methodology, based on the usage of large number of high-grade video & audio monitors, etc. is no longer the answer, **but we learn that QA/QC is still needed.**

The VideoQ **VQPT** (**V**ideo**Q** **P**roductivity **T**ools) modules answer the need for such automatic tools. Combination of VQPT suite modules with other VideoQ tools, such as **VQL** library of **test patterns** and **VQV / VQMP players-analyzers**, will result in further increase of workflow efficiency.

VideoQ tools handle various types of **files** and **streams**, on premises and in the cloud. They use **ffmpeg** libraries and support all common **containers**, **codecs** and **protocols**, such as: MP4, MOV, J2K, OGG, AC3, EAC3, AVC, HEVC, VP9, TCP, UDP, SRT, etc.



## 7.2 VideoQ Technologies and Media Ambits



### What it is:

- [ *me·dia am·bit* ] noun: **Extended** technical and semantic **metadata** about moving images, sounds, and timed text; **embedded** in files or **externally centralized**
- Sentence example: Their system uses media ambits to automate ingest and delivery.
- Variations: Video Ambit, HDR Ambit, Audio Ambit, Timed Text Ambit, etc.

### Ambit's Role for Automated and Automation-Assisted Workflows:

- Robot-assisted human decision-making **tools**
- Robots-learning-from-people **tools**
- **Ambits repositories** and **machine services** optimized for automation, web services, and directed acyclic workflows
- Automated and manual control of **optimized** video and audio processing/conversion
- Automated and manual **quality assurance** and **quality control** tools
- Measure, annotate and automatically **modify** files to match **target ambits**
- **Notify** machines, people and dashboards in **automated workflows**

Learn more about [Media Ambits](#)

## 7.3 HDR–SDR Conversion – Criteria for Success

*The only criteria of success is a Happy Viewer and a visual impact of wonderful video images.*

Modern HDR cameras and display screens are much better than their prior-art SDR counterparts.

However, the content quality and its availability is dragging behind.



Important facts are:

- **SDR content** made via **HDR to SDR down-conversion** is significantly better than regular SDR content.
- **HDR content** made via **SDR to HDR up-conversion** is nearly as good as regular HDR content, but the **production cost** is order of magnitude **lower**.

There are only **two valid questions**:

1. Are **Video Data Levels** and **Light Levels** suitable for the **distribution context**, e.g. for **streams switching** and **adverts/captions insertion**?
2. Do the converted **images at the workflow output look good** to millions of viewers?

We **should not** compare **fundamentally different** video images of *the same object*:

- Original HDR (*WCG*) or SDR image (*WCG UHD or NCG HD*),
- Down-converted HDR to SDR image (*WCG UHD or NCG HD*),
- Up-converted SDR to HDR image (*WCG to WCG or NCG to WCG*),

Why? Because they belong to at least **three** quite different **workflows** and quite different **viewing conditions**.





## 7.4 VQCB Test Pattern Usage Example 1

Hundreds of test sequences have been encoded and used in the consumer devices extensive lab testing.

## 20s long VQCB leader



## 12min long feature film



20s long **VQCB** test was used as a “**reference leader**” concatenated with the main 12min long movie.

VideoQ encoded this sequence in a variety of formats:

- Frame rates: from **23.976fps** to **120fps**
- Frame sizes and dynamic range versions: **HD** and **UHD**, **HDR10** and **SDR**, **8bit**, **10bit** and **12bit**
- Video codecs: **DoVi**, **H.265**, **VP9**, **AV1**, **VVC**
- Video bitrates: from **6Mbps** to **100Mbps**
- Audio codecs: **AC-3** 2.0 and 5.1, **Atmos** 5.1.4, **DTS-X** 7.1.4, **48kHz**, **96kHz** and **192kHz** sampling rates
- Audio bitrates: from **128kbps** to **1344kbps**

Special attention was given to the insertion of correct metadata and providing the specified bitrates.

Presence of **QR codes** in the VQCB leaders provided for easy handling and analysis of test results data.

## 7.5 VQCB Test Pattern Usage Example 2

**VQCB** test is included in 13s long “**reference leader**” concatenated with the main 5min long **test clip**. The clip was specially created for **International Electrotechnical Commission** standard **IEC 62087-2: Audio, video, and related equipment - Determination of power consumption - Part 2: Signals and media**.

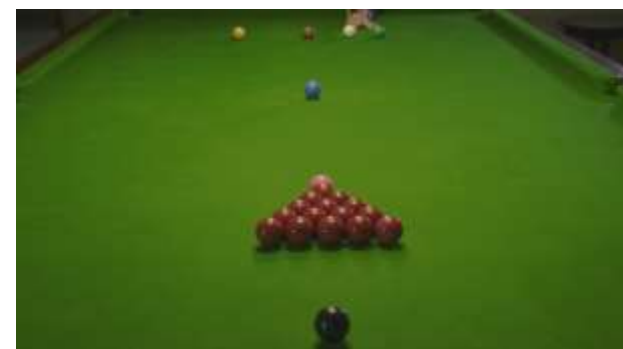
**All models of TV sets** should be tested **worldwide** in accordance with the IEC 62087-2 standard.

**IEC 3s Text Box + 10s VQCB = 13s leader**



...

**5min long special power consumption test clip**



VideoQ encoded this sequence in a variety of formats:

- Frame rates: from **23.976fps** to **59.94fps**
- Frame sizes and dynamic range versions: **UHD**, **HD**, and **SD**, **HDR10**, **HLG**, and **SDR**, **10bit** and **8bit**
- Video codec: **HEVC**
- Video bitrates: from **9.5Mbps** to **75Mbps**
- Audio codec: **AAC LC** 2.0, sampling rate **48kHz**
- Audio bitrate: **128kbps**

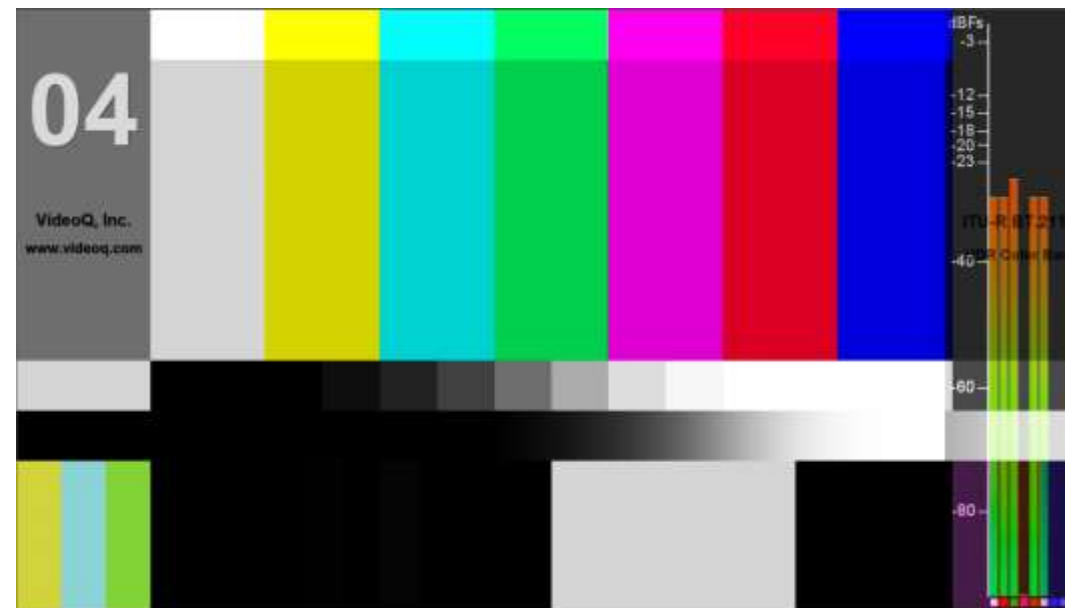
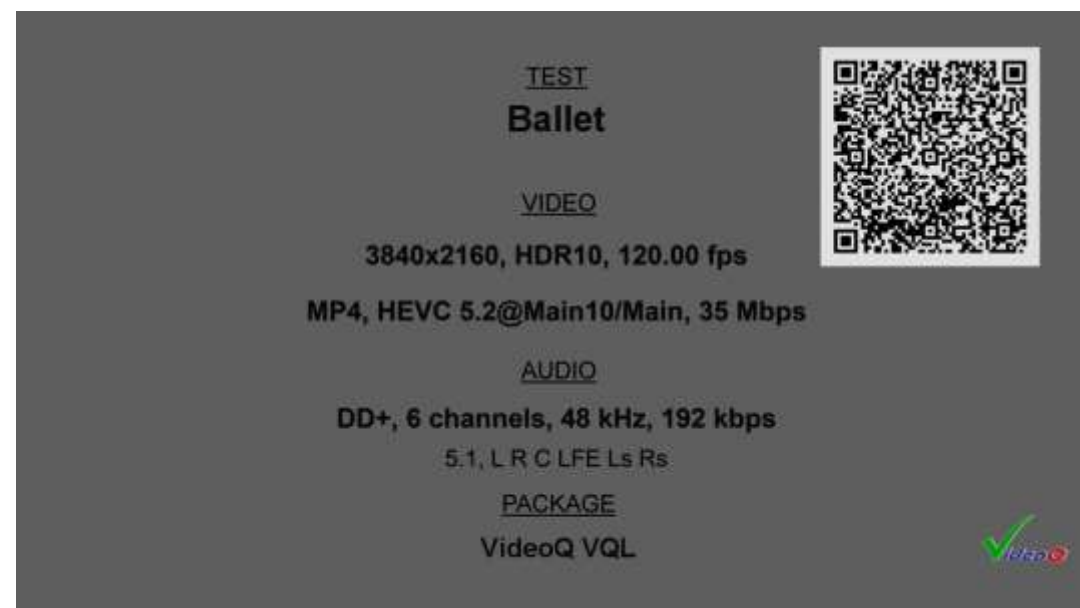


## 7.6 Live Test Clips Examples

**SFO:** Aerial HD video, **high original frame rate**, decimated to various frame rates; the clip versions serve for frame rate conversion testing

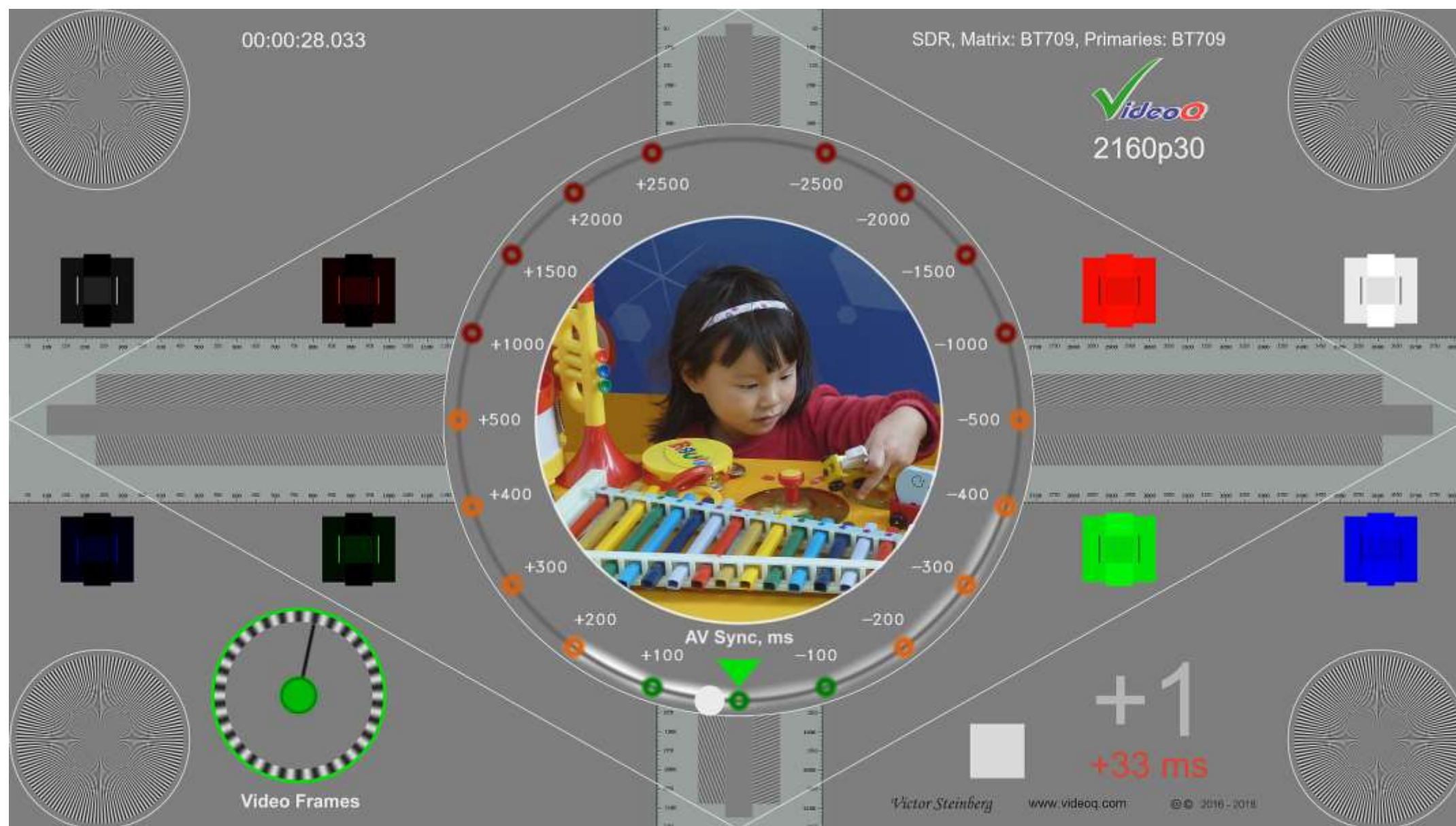


**Ballet:** based on Netflix open content 'Nocturne' clip; **HDR** and **SDR** versions, variety of **frame sizes** (up to **4K**) and **frame rates** (up to **120fps**).  
Each test clip starts with 20s long **VQCB** leader: text box with QR code, followed by VQCB test pattern, followed by test clip live content.





## 7.7 VQMPC – Dynamic Test Pattern



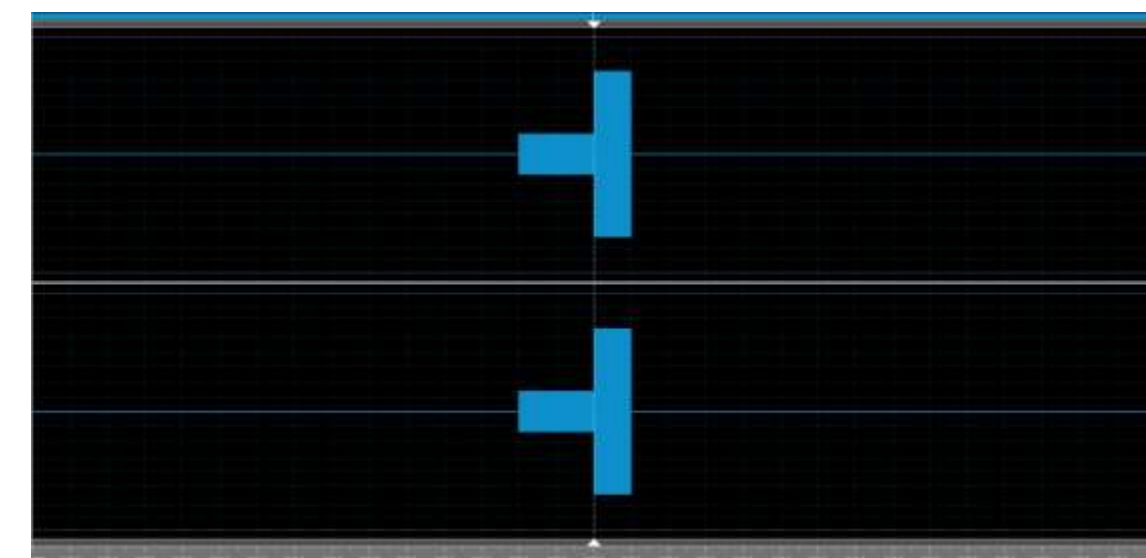
Set of test pattern video and audio files to check:

- Geometry and Aspect Ratio
- Video Levels and Color Rendition
- Scaling distortions or proof of no-scaling
- Frames continuity and AV Sync Errors
- Compression artifacts

Variety of video formats:

- Frame sizes from 720x480 to 8K
- Frame rates from 23.976 to 120.0 fps

AV Sync Reference: “Beep-bop” burst



Ideal tool for instant “at glance” video system performance estimation, e.g. for fast setup, functionality test and debugging

***VQMPC test is used world-wide by a number of major companies.***

Learn more about [VQMPC](#)



## 7.8 VQCST – Test Pattern for Compression Codecs

**Stress Level rising**

↑

Pseudo-random color shapes: **calibrated and compliant** stress source

Switchable **Stress Ranges:** Low, Medium, High

Variable **Stress Level:** from 0 to 9

VQCST\_VID\_HD\_SDR\_MFR\_MSR  
Segment Frames Count: 240  
Frame: 089  
VideoQ DEMO expires 01Feb2020

Stress Tracker Test  
Stress Level: 6 Medium Range  
Victor Steinberg www.videoq.com  
© 2015 - 2019

**VQCST** is a sequence of **10 Segments (10 Stress Levels)**, each segment duration: 4.0, 4.8 or 5.0 seconds. Total sequence duration is 40, 48 or 50 seconds, depending on the selected frame rate.

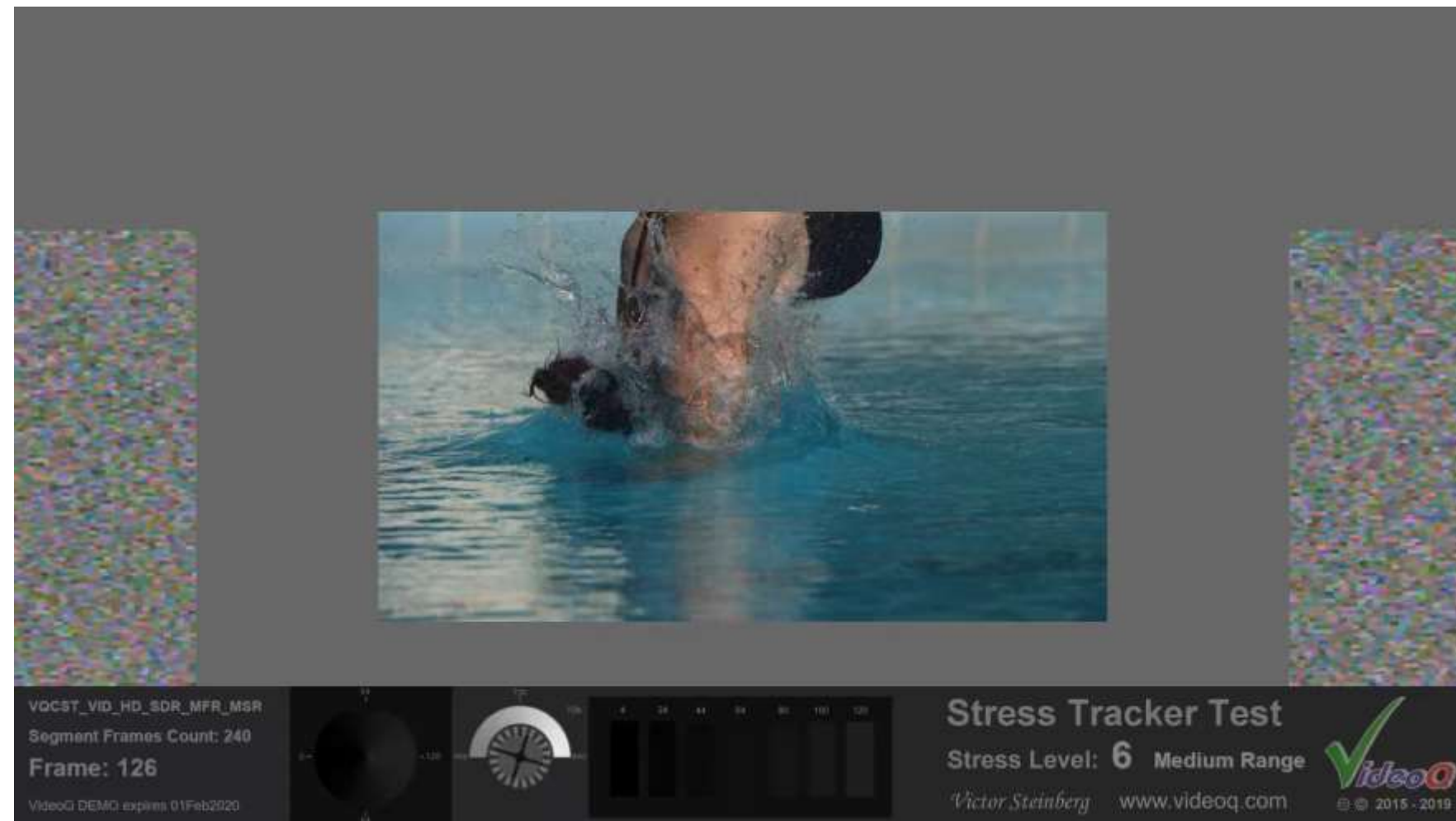
**Stress Tracker™** test is suitable for **subjective image quality estimation** in real time and for **automated measurement of Stress Response Profile**.

Learn more about [VQCST](#)

## 7.9 Compression Quality Test Examples

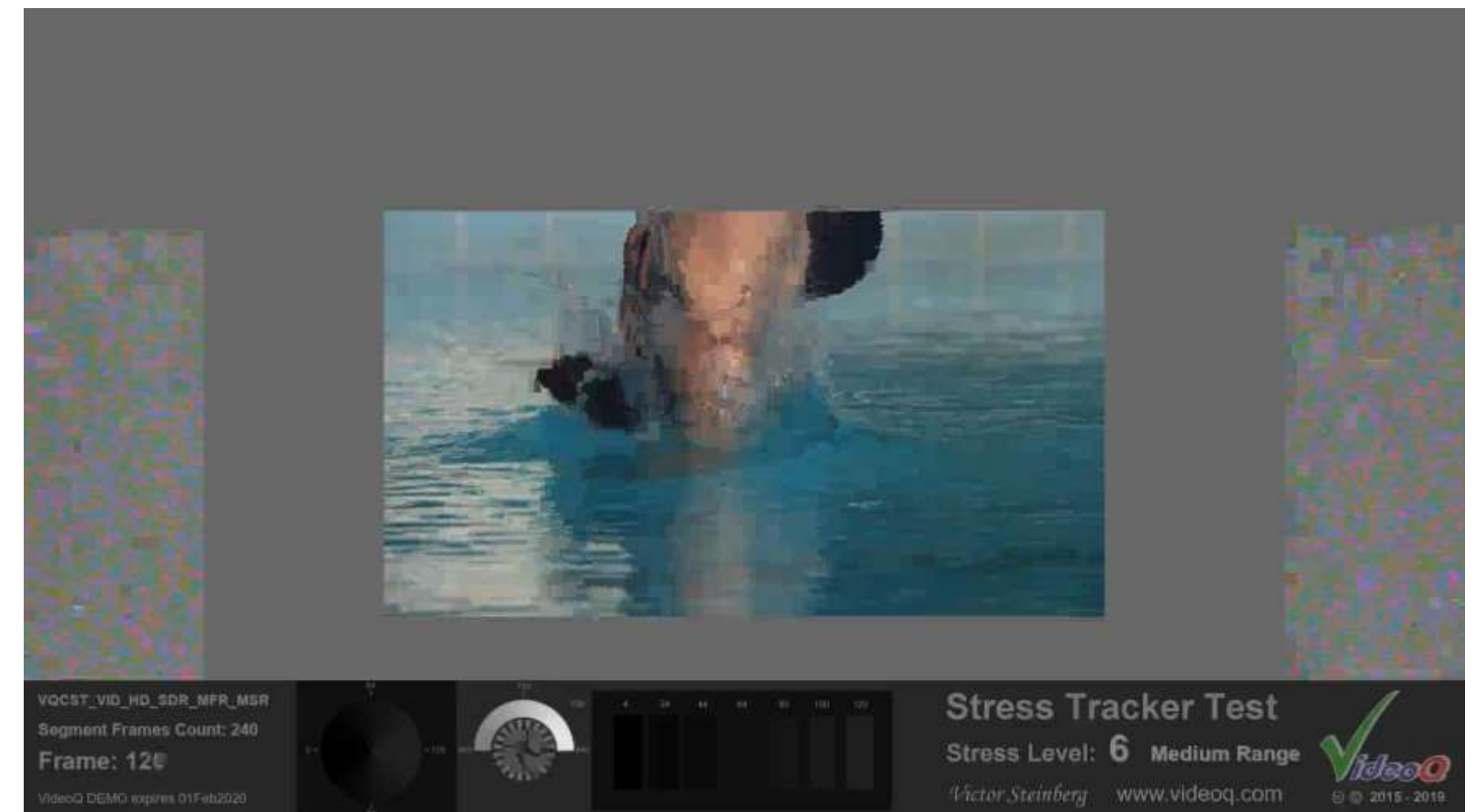
HD, 60fps (MFR), **HEVC 8Mbps**,  
Medium Stress Range (MSR), Stress Level 6

Noticeable compression artifacts



HD, 60fps (MFR), **AVC 2Mbps**,  
Medium Stress Range (MSR), Stress Level 6

Strong (annoying) compression artifacts





# 7.10 VQCBA – Color Bars Analyzer, JSON Report Example

```

> (0) "header": {} (19)
> (0) "generalInputFileInfo": {} (28)
> (0) "videoStreams": {} (2)
> (0) "audioStreams": {} (2)
✓ (0) "testConditions": {} (10)
  1."timelinePositionControl" "Auto"
  1."selectedTimeLinePosition" "Leader"
  1."audioStreamAnalysis" "Yes"
  1."warning" "Audio and video streams durations differ"
  1."audioChannelsNumber" "2"
  1."referenceAudioChannel" "FR"
  1."thumbnailFileOut" "No"
  1."singleFrameVideoFileOut" "No"
  1."videoLevelProfilesReport" "Yes"
  ✓ (1) "testCaseInitParameters": {} (12)
    2."iniFileDateTimeUTC" "2022-06-27T04:11:14.621Z"
    2."configuredBy" "Victor Steinberg"
    2."BlackLevelDelta_pct" "0.5"
    2."WhiteLevelDelta_pct" "0.75"
    2."ColorBarsLevelsDelta_pct" "0.75"
    2."VideoGainDelta_pct" "1"
    2."ColorBalanceDelta_pct" "1"
    2."ColorSaturationDelta_pct" "2.5"
    2."PLUGE_LevelsDelta_pct" "0.5"
    2."AudioTestToneRefLevel_dBFS" "-23"
    2."AudioLevelsDelta_dB" "0.75"
    2."AVSyncDelta_ms" "50"
  ✓ (0) "testResults": {} (5)
    ✓ (1) "testSummary": {} (2)
      2."allTestsPassed" "Yes"
      > (2) "partialTestsPassed": {} (13)
      ✓ (1) "videoSegments": {} (5)
        2."relevantTimelineSegments" "1"
        2."testPatternTimeLine" "Leader"
        2."analyzedFramesCount" "1200"
        2."analyzedDurationTC1000" "00:00:20.020"
      > (2) "Segment1": {} (5)
      > (1) "testPatternComposition": {} (21)
      > (1) "videoTestResults": {} (26)
      > (1) "audioTestResults": {} (4)
    > (0) "qrCodeBasedInfo": {} (2)
    > (0) "videoLevelProfiles": {} (8)

```

```

> (0) "header": {} (19)
> (0) "generalInputFileInfo": {} (28)
> (0) "videoStreams": {} (2)
> (0) "audioStreams": {} (2)
> (0) "testConditions": {} (10)
✓ (0) "testResults": {} (5)
  ✓ (1) "testSummary": {} (2)
    2."allTestsPassed" "Yes"
    > (2) "partialTestsPassed": {} (13)
    > (1) "videoSegments": {} (5)
    > (1) "testPatternComposition": {} (21)
    ✓ (1) "videoTestResults": {} (26)
      2."testPatternType" "VQCB - VideoQ Color Bars"
      2."dynamicRangeFormat" "HDR-PQ"
      2."colorSpace" "YUV"
      2."bitsPerComponent" "10"
      2."dataRangeMetadata" "Narrow"
      2."dataRangeDetected" "Narrow"
      2."blackLevel" "64"
      2."blackLevelOffset_pct" "0"
      2."whiteLevelOnCB" "572"
      2."whiteLevelOnCB_pct" "57.99"
      2."blackClipOnPLUGE" "No"
      2."grayScaleNonLinearity_pct" "0"
      2."whiteClipOnGrayScale" "No"
      2."rangeConversionFootprint" "No"
      2."toneMapping" "No"
      2."wideColorGamutMapping" "No"
      2."colorMatrixMetadata" "BT.2020"
      2."colorMatrixDetected" "BT.2020"
      2."videoGainErrorOnCB_pct" "0"
      2."colorBalanceErrorOnCB_pct" "0"
      2."videoLevelsErrorOnCB_pct" "0.654999"
      2."saturationErrorOnCB_pct" "-2.23"
      2."colorMatrixingErrorFootprint" "na"
    > (2) "colorBars": {} (8)
    > (2) "plugeBars": {} (7)
    > (2) "grayScale": {} (9)
    ✓ (1) "audioTestResults": {} (4)
      2."audioContent" "VQCB Audio Test"
      2."avsyncError_ms" "17"
      2."audioTestLevel_dBFS" "-23.04"
      2."audioGainError_dB" "-0.039999"
    > (0) "qrCodeBasedInfo": {} (2)
    > (0) "videoLevelProfiles": {} (8)

```

```

✓ (0) "testResults": {} (5)
  > (1) "testSummary": {} (2)
  > (1) "videoSegments": {} (5)
  > (1) "testPatternComposition": {} (21)
  > (1) "videoTestResults": {} (26)
  > (1) "audioTestResults": {} (4)
  ✓ (0) "qrCodeBasedInfo": {} (2)
    > (1) "originalTestPatternInfo": {} (16)
    ✓ (1) "workflowParametersInfo": {} (1)
      2."analyzedParametersCount" "12"
      2."modifiedParametersCount" "9"
      2."undefinedParametersCount" "0"
    > (2) "FrameSize": {} (2)
    > (2) "TransferCharacteristics": {} (2)
    ✓ (2) "ColorSpace": {} (2)
      3."original" "RGB"
      3."detected" "YUV"
    > (2) "VideoDataRange": {} (2)
    ✓ (2) "SamplingStructure": {} (2)
      3."original" "444"
      3."detected" "420"
    ✓ (2) "BitsPerComponent": {} (2)
      3."original" "16"
      3."detected" "10"
    ✓ (2) "FrameRate": {} (2)
      3."original" "23.976"
      3."detected" "59.940"
    ✓ (2) "Container": {} (2)
      3."original" "MOV"
      3."detected" "MP4"
    ✓ (2) "VideoCodec": {} (2)
      3."original" "PNG"
      3."detected" "HEVC"
    ✓ (2) "AudioCodec": {} (2)
      3."original" "PCM"
      3."detected" "E-AC-3"
    ✓ (2) "AudioChannels": {} (2)
      3."original" "6"
      3."detected" "2"
    ✓ (2) "AudioSamplingRate": {} (2)
      3."original" "48000"
      3."detected" "44100"
    > (0) "videoLevelProfiles": {} (8)

```

# 7.11 VQFP – Video Frames Profiler, JSON Report Example

```

> (0) "header": {} (11)
> (0) "generalFileInfo": {} (25)
> (0) "videoStream": {} (43)
> (0) "testConditions": {} (7)
> (0) "videoParameters": {} (19)
> (0) "activeImageFormats": {} (4)
▼ (0) "videoLevelsStatistics": {} (6)
  1."videoDataVolume_pct" "100.457"
  1."chromaDataVolume_pct" "36.935"
  1."averageU_pct" "-4.814"
  1."averageV_pct" "4.992"
  ▼ (1) "8bDataLevels": {} (7)
    > (2) "Y": {} (5)
    > (2) "U": {} (5)
    > (2) "V": {} (5)
    > (2) "R": {} (5)
    > (2) "G": {} (5)
    > (2) "B": {} (5)
    > (2) "maxRGB": {} (5)
  > (1) "8bDataHistograms_pct_x1000":
  ▼ (0) "lightLevelsStatistics": {} (16)
    1."dynamicRangeMode" "SDR"
    1."targetDeviceMaxBrightness_nit" "100"
    1."videoLightVolume_nit" "100"
    1."videoLightVolume_pct" "100"
    1."maxContentLightLevel_nit" "100"
    1."maxContentLightLevel_pct" "100"
    1."averageLightLevel_nit" "28.71"
    1."averageLightLevel_pct" "28.71"
    1."maxFrameLightLevel_nit" "99.661"
    1."maxFrameLightLevel_pct" "99.661"
    1."maxFrameLightLevel_TC" "00:00:19.000"

```

```

> (0) "header": {} (11)
> (0) "generalFileInfo": {} (25)
> (0) "videoStream": {} (43)
> (0) "testConditions": {} (7)
▼ (0) "videoParameters": {} (19)
  1."bitDepthChangesCount" "0"
  1."primaryBitDepth" "8"
  1."primaryBitDepthDuration_s" "100"
  1."secondaryBitDepth"
  1."secondaryBitDepthDuration_s"
  1."primaryCadenceType" "11"
  1."primaryCadencePhase" "0"
  1."primaryCadence_pct" "87"
  1."secondaryCadenceType" "11psf"
  1."secondaryCadencePhase" "0"
  1."secondaryCadence_pct" "12"
  1."cadenceDetectionConfidence_pct" "88"
  1."peakSNR_dB" "52.2"
  1."medianSNR_dB" "46.6"
  1."peakActivity_dB" "-23.7"
  1."medianActivity_dB" "-34.5"
  1."peakSharpness_pct" "79.8"
  1."medianSharpness_pct" "69.3"
  1."upConversionFootprints" "NO"
  > (0) "activeImageFormats": {} (4)
  > (0) "videoLevelsStatistics": {} (6)
  > (0) "lightLevelsStatistics": {} (16)
  > (0) "videoSegments": {} (3)
  > (0) "timelineProfiles": {} (7)

```



# 7.12 VQMA Test Pattern Composition

All-In-One: Single pattern allows **automatic measurement** of multiple **video workflow parameters**

## Test Components:

## Parameters:

Radial Plates x4 for visual estimation, camera shading and sharpness measurement

Spinning Frame Clock    Sampling Conversion Test    Original Frame Size Code, 4 bit

H Wedges  
V Wedges

0

Color Bars

1

2

Grayscales x2,  
Near-Whites,  
Near-Blacks

3

Multi-Burst

4

Multi-pulses

5

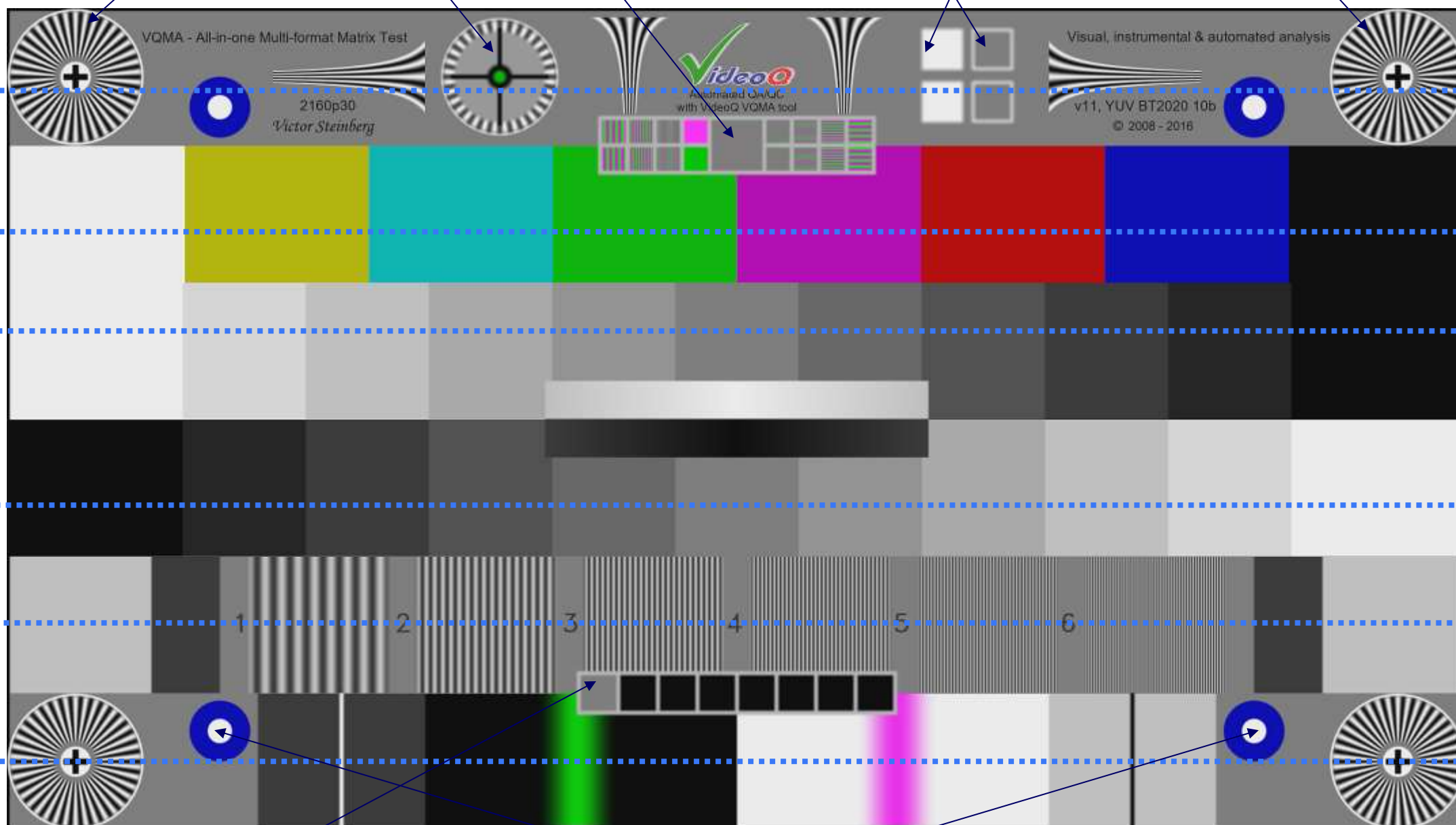
Visual Estimation

YUV/RGB Levels,  
Color Space Matrix

Black & White Levels,  
RGB Balance,  
Y Gamma,  
Y Range Overload

Frequency Response,  
Aliasing Levels

Y vs. UV Gain,  
Needle pulse K-rating



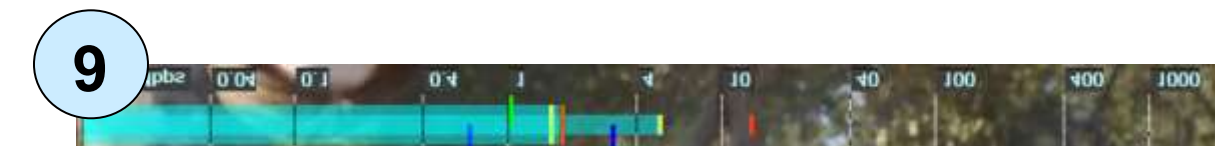
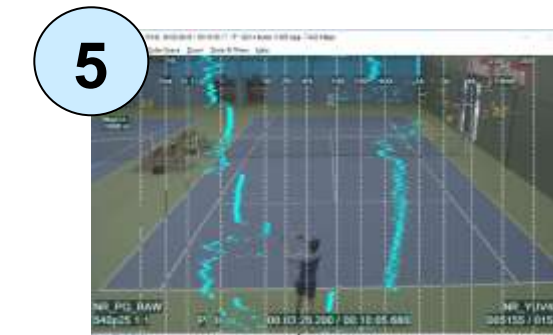
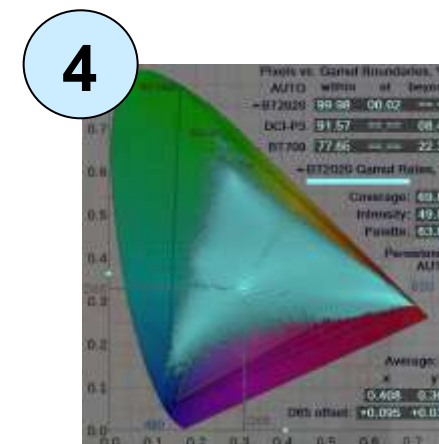
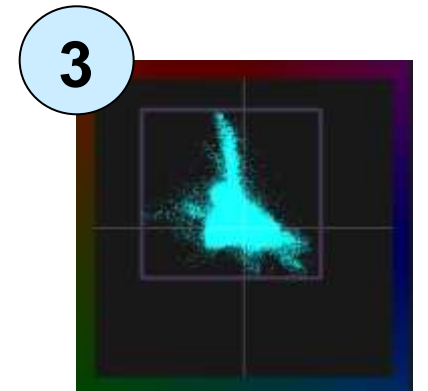
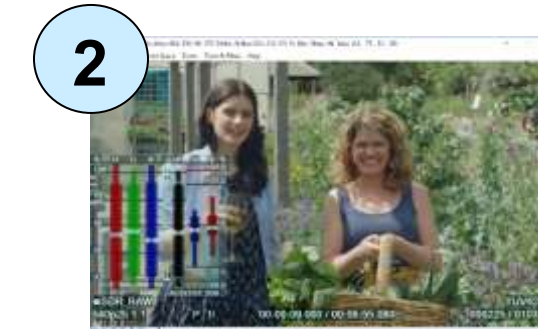
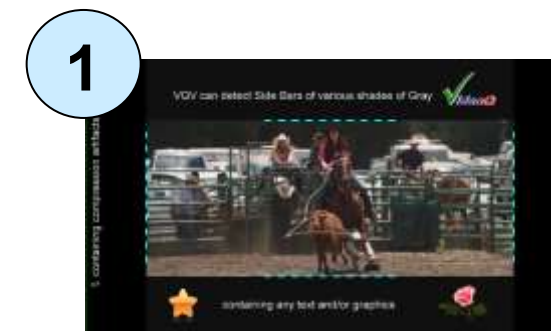
Frames Cadence Test    Geometry (Scale/Position/Tilt/Keystone) Markers x4

Learn more about [VQMA](#)



# TOC 7.13 VQV – Video Viewer-Analyzer, Tools & Meters Overview

1. Active Image Size and Aspect Ratio Meter
2. Video Volume Meter – VV-Bars™
3. VectorScope
4. ChromaScope
5. RGB Frame Profile Monitor – FrameScope™
6. RGB/YUV Waveform Monitor
7. RGB/Light Levels Histograms
8. RGB/Light Levels Analyzer – L-Bar™
9. Bitrate Analyzer – C-Bar™
10. Noise Meter



Learn more about [VQV](#)



# 7.14 VQMP – Media Player-Analyzer, AV Monitor Modes

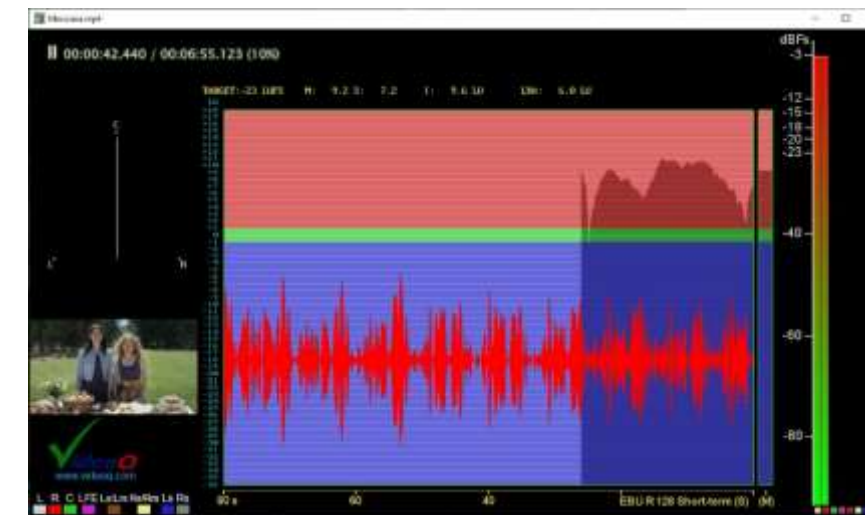
Mode 1

Mode 2

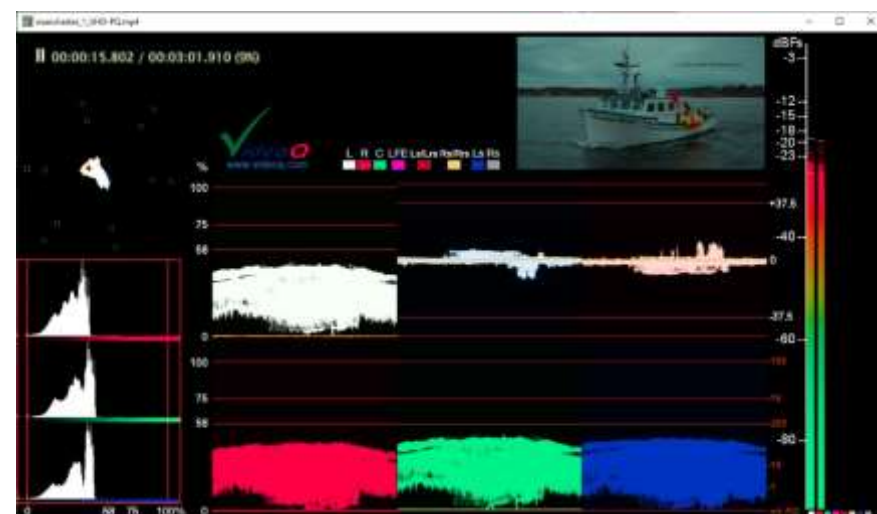
Mode 3

Mode 4

*SDR Content*



*HDR-PQ Content*



Video tools: UV VectorScope, RGB Histograms, YUV Waveforms, RGB Waveforms

Audio tools: Level Meter, Waveforms, VectorScope, Frequency Spectrum, EBU R128 Loudness Monitor

Learn more about [VQMP](#)