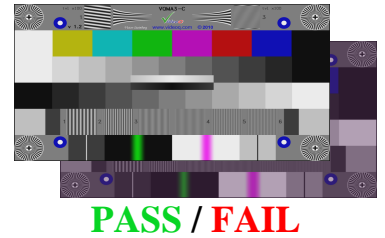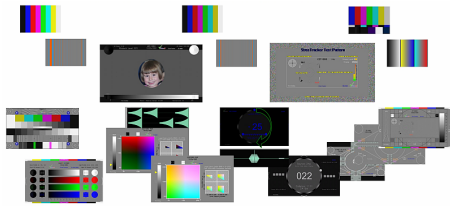# VQL – LIBRARY OF SOPHISTICATED TEST PATTERNS

PASS / FAIL

Video & Audio Tests for 21st Century Content Creation & Delivery

Comprehensive library of sophisticated test patterns and sequences for:

Visual & Aural   **Objective**   **Robotic**

- Instant visual & aural quality estimation
- Objective measurements of video and audio performance
- Fully automated (robotic) Quality Control

VQL files are compatible with all commonly used software or hardware codecs and media players.

Ideal tool for IPTV system integrators, video development labs, software developers, content providers and distributors.

VQL brings the proven reliable objective analysis methodology to 21st Century video QA/QC environment

Features

- Static and dynamic test families sharing common components
- Moving 2D and 3D multi-colored zone plates and photo sprites
- Unique sub-patterns revealing critical image problems at glance:
  Aspect Ratio, Centering/Cropping, Levels, Spatial Sharpness in Y and UV
- Highly visible time-line indicators and frame number read-out:
  Unique binary coded machine-readable time stamps
- Color patches to test YUV and RGB color processors
- 48 kHz sampled 24 bit multi-channel audio tests, accurate dBFs levels

StresTracker™ Compression Test

Dynamic 3D Test, side-by-side format

"Golfer" Live Clip with stamps
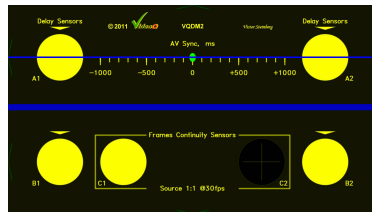
Video Latency and AV Sync Test

Video File Formats

- Uncompressed YUV
- MPEG4/H.264 MPEG2 TS

Audio File Formats

- PCM WAV
- MP3
- AC3

Other file formats are available on request

Resolutions and Frame Rates

320x240:	15p, 25p, 29.97p, 30p
....	
720x480:	23.98p, 29.97i (59.94i), 30p, 59.94p
720x576:	25p, 25i (50i), 50p
....	
1280x720:	50p, 59.94p, 60p
1920x1080:	23.98p, 24p, 25p, 25i (50i), 29.97i (59.94i), 30p, 50p, 59.94p, 60p

Content Categories

- Standard Line-based Test Patterns
- Scaling, Cropping and Geometry Tests
- Levels, Colors, and Gamma Tests
- Interlace and Sharpness Tests
- Motion Portrayal and Motion Blur Tests
- Compression Codec Tests
- Auto-Matrix Test Patterns
- Live clips – high quality samples
- Multi-channel Audio Tests

Full custom test files are available on request.
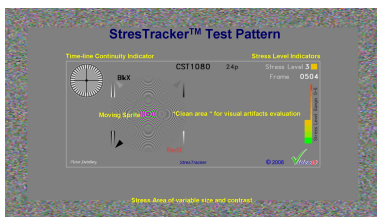
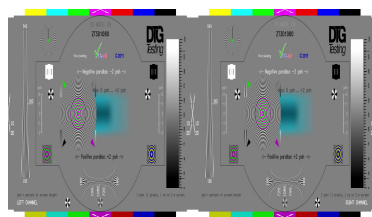### VQL in Hardware

VQL tests patterns are available as:

- 3G-SDI, HD-SDI, SD-SDI
- DVI/HDMI
- Analog YPrPb/RGB

Playout devices:

- VideoQ **VQDM**, **VQS, VQTS** series
- 3rd party Media Servers and Media Players

3285 Kifer Road, Santa Clara, CA 95051
info@videoq.com • www.videoq.com

VQL – LIBRARY OF SOPHISTICATED TEST PATTERNS

PASS / FAIL

VQL in Action

Q: How to choose the best transcoder?   **A:** By benchmarking with VQL Test Patterns

Let VQL to be your unbiased Juror

MP4 AVC .MOV 3.4 Mbps
16:9
1920x1080 30p

SW Transcoder **A**

SW Transcoder **B**

SW Transcoder **C**
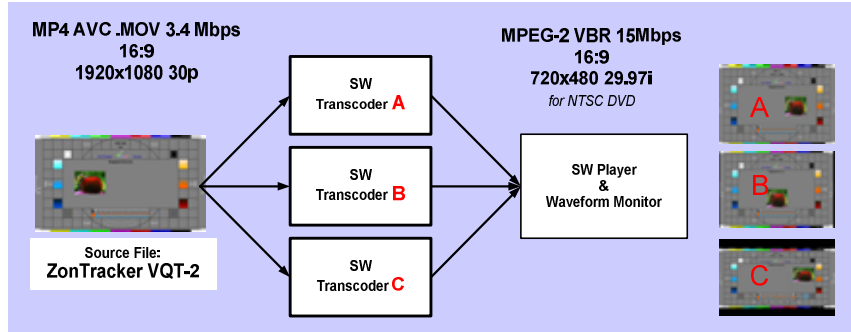
Source File:
ZonTracker VQT-2

MPEG-2 VBR 15Mbps
16:9
720x480 29.97i
for NTSC DVD

SW Player
&
Waveform Monitor

A

B

C

TRANSCODER	A	B	C
Geometry:			
- Scaling	ü	û	û
- Cropping	ü	ü	ü
Levels:			
- Luma	ü	ü	ü
- Chroma	ü	ü	ü
Sharpness/Moire:			
- H in-band	û	ü	û
- H off-band	û	ü	û
- V in-band	û	ü	û
- V off-band	û	ü	û

Software transcoders **A**, **B** and **C** performed the same task: down-converting HD source file to SD DVD NTSC video files.
All three files were played by the same player.
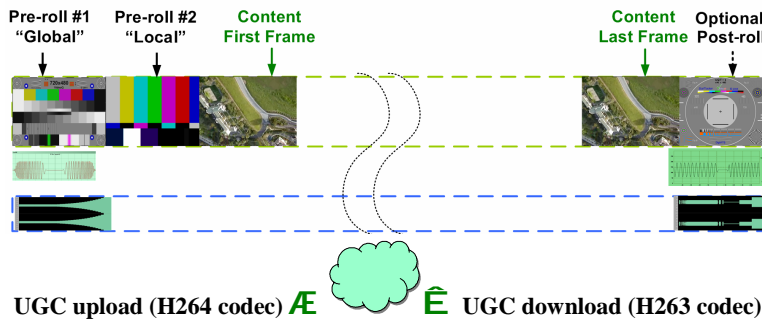
Summary of Transcoders Benchmarking:

- VQL methodology allows direct benchmarking without any extra tools involved with unambiguous results - easy to interpret.
- VideoQ test pattern clearly demonstrates significant image quality differences between transcoders.
- Overall transcoder **B** performance is drastically superior to **A** and **C**, except for vertical black bars, i.e. horizontal scaling error

VideoQ QualityWrapper™ in Action

Q: What is overall picture quality of the Content Delivery System?   **A:** VideoQ QualityWrapper™ concept is simple. It works!

Let VQL to be your unbiased Jurors

Pre-roll #1 "Global"   Pre-roll #2 "Local"   Content First Frame   Content Last Frame   Optional Post-roll

UGC upload (H264 codec) Æ   **Ê UGC download (H263 codec)**

End-To-End Content Delivery Test:

The **U**ser **G**enerated **C**ontent clip with VideoQ **VQMA3 pre-roll** was uploaded, transcoded, downloaded, up-scaled for display - and finally Pre-roll Test Pattern was *measured*.

Significant image quality loss was discovered and measured with exact numerical read-out.

Pre-roll Test Pattern Analysis Results:

- No geometry distortions or cropping
- Y levels are significantly wrong, 10% errors
- DCT Quantizing Noise is about 6% pp

VideoQ, Inc. – California-based company, focused on video test & measurement and video enhancement technologies, products and services. More than 50 man-years of award-winning experience in the field of Broadcast, Consumer Electronics, Transcoding and Video Data Compression.

VideoQ is a renown player in calibration and benchmarking of Displays, Video Projectors, Transcoders, Graphics and Video Processors, instantly revealing artifacts, problems and deficiencies, thus raising the bar in video quality experience.

Other related VideoQ products:

VQDM-100   **VQTS-300**   **VQTS-200**   **VQMA-3**   **VQS-300**

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