Full Reference Video Quality Monitor

Full Reference Perceived Video Quality Measurement Solution for live audio/video signals:
IP streaming, HDMI, HDCP, desktop capture, audio/video files being played

Product information

Product

☑ Software
☐ Hardware [1]

Metrics type

☑ Full reference
☐ No reference [2]
☐ Parametric [2]
☐ Hybrid [2]
☑ Skew (lip-sync offset)
☑ MSE & PSNR
☑ VMAF

Input types

☑ IP streaming [2]
☑ Capture card, device [2]
☑ File being played

Input formats

☑ MPEG-2
☑ H.264
☑ HEVC
☑ Uncompressed
☑ Other formats

Applications

☑ Audio/video encoders monitoring
☑ Audio/video encoders comparison
☑ Live programs monitoring [2]
☑ Video processing optimization

[1] Hardware (PC) may be supplied as an option

[2] Please see our other products, like Video Quality Monitor and Multi Audio/Video Monitor

Take the lead in the race for quality
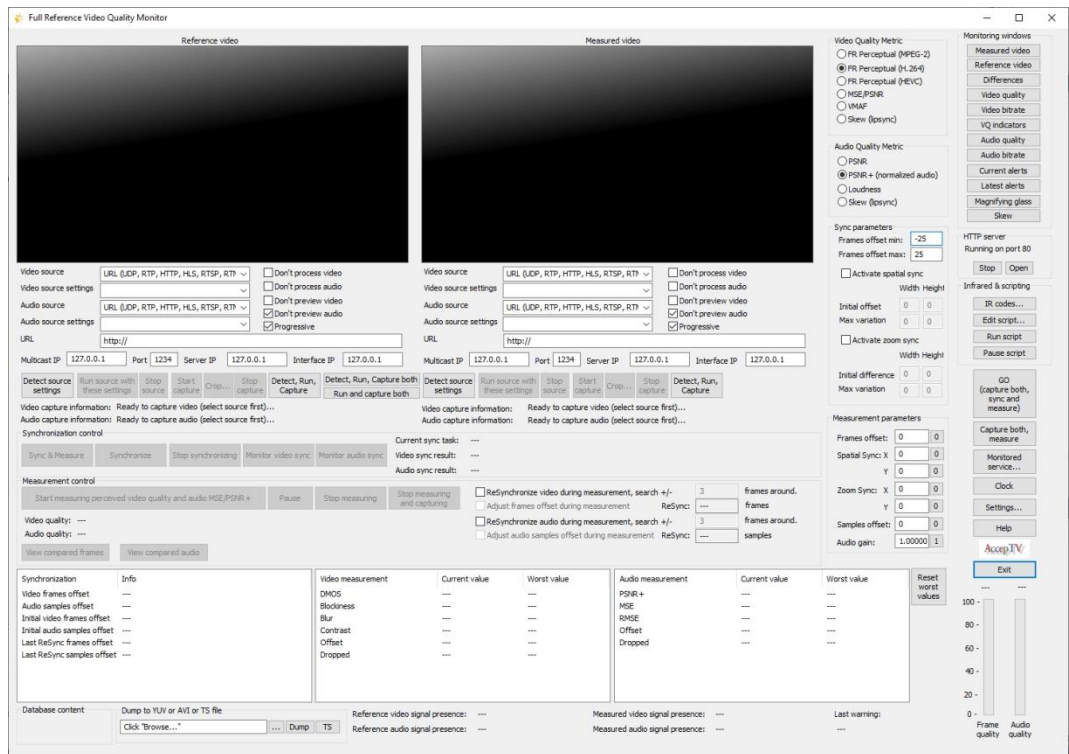
Because your customers expect the highest quality from your products, because your competitors improve the quality of their products, quality is crucial for you.

But optimizing perceived video quality requires measuring it, monitoring it.

Until then, monitoring perceived video quality while comparing the video under test with a reference signal was a difficult task which was often done offline (from files).

Luckily, Full Reference Video Quality Monitor is here now.

Full Reference Video Quality Monitor (FRVQM) is a powerful software solution to measure video quality as perceived by end-users, in real time and from LIVE audio/video sources: IP streaming, HDMI, SDI, desktop capture, etc.

Full Reference Video Quality Monitor is the most precise tool to:

- benchmark encoders or firmwares and find the best one,
- monitor live programs.

And since FRVQM is not dependent on specific hardware, you can install it on any Windows™ PC. You can even run it on a laptop!

FRVQM quickly provides accurate and detailed measurements.

FRVQM uses video quality measurement technologies ("metrics") that extracts visual features which are similar to the ones used by the Human Visual System. Like our other solution "Video Quality Analyzer" (VQA), but FRVQM works in real time.

FRVQM can compute **blockiness, blur, contrast and flatness** for both the reference and the measured videos.

FRVQM computes video quality using DMOS (Differential Mean Opinion Score) values. A DMOS value indicates the quality loss of the tested video, compared to its reference video. The produced DMOS values are highly correlated to human judgments: the linear correlation coefficient between computed DMOS and subjective DMOS (given by human observers during subjective video quality assessment tests in normalized viewing conditions) is greater than 0.924 (the maximum theoretical value being 1).

To evaluate video quality, FRVQM can also compute:

- MSE & PSNR
- VMAF

FRVQM also enables to measure the skew (or lip-sync offset) which indicates how audio and video signals are synchronized.

At last, various audio metrics are also available:

- MSE,
- PSNR,
- PSNR+ (with volume normalization),
- Loudness (according to ITU and EBU standards).

Distorted video (under test)

Perceptual features extraction

Reference video (not distorted)

Perceptual features extraction

Comparison

Video quality score (correlated with human judgment)

Key features

Perceived video quality measurement and bitrate measurement

Full Reference Video Quality Monitor measures the perceived video quality on a scale from 0 to 100. It also measures the bitrate per frame (instant bitrate).

Integrated web server and database

Full Reference Video Quality Monitor saves all measurement data in an integrated database. It also includes its own web server so that you can remotely:

- consult the results from the database

- display interactive quality curves and "Quality vs Bitrate" curves

- generate quantitative and detailed video quality analysis reports

Audio support

Full Reference Video Quality Monitor also measures audio quality and audio bitrate for stereo and mono.

Many other features

Full Reference Video Quality Monitor also includes many other features like automation features, command line usage, magnifying glass, etc.

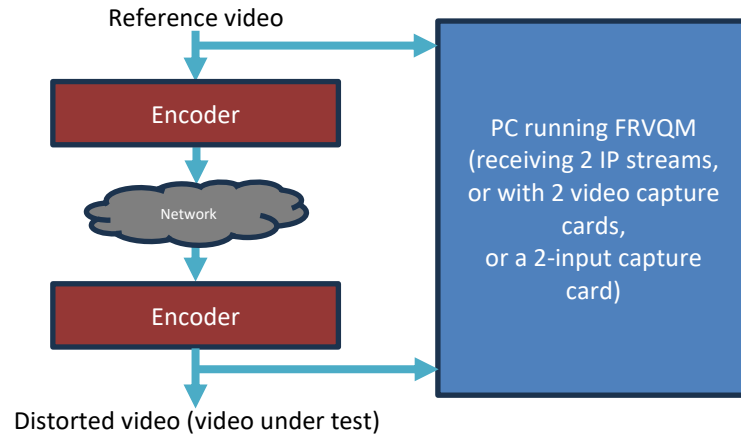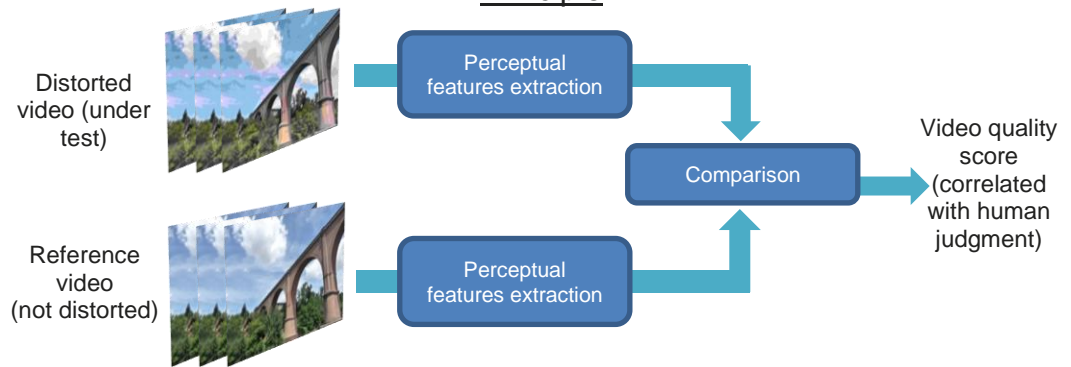**Ask for a free evaluation version now!**

Reference video

Encoder

Network

Encoder

PC running FRVQM (receiving 2 IP streams, or with 2 video capture cards, or a 2-input capture card)

Distorted video (video under test)

Features

Input videos
IP streaming (UDP, RTP, HTTP, HTTPS, HLS, RTMP, RTSP)
Capture card or device (HDMI, SDI, etc.)
Any audio/video source device (video camera for example)
Desktop capture
File: offline or online (when the file is being played)

Synchronization (alignment)
Measured video and reference video can have different sizes and/or black bands
Temporal and spatial (translation, zoom, cropping) synchronization of the measured video with its reference video
Synchronization adjustment during audio/video quality measurement (if frames have been lost)
Sub-pixel synchronization, Lanczos rescaling

Measurement
Human Vision modeling
Measurement of blockiness, blur, contrast and flatness
Three dedicated video quality metrics for MPEG-2, H.264 and HEVC
VMAF video quality metric
MSE & PSNR video quality metrics
MSE, RMSE & PSNR (without of with gain compensation) audio quality metrics
Video quality measurement: computation of DMOS (Differential Mean Opinion Score) indicating the quality loss of the tested video compared to its reference video.
Video bitrate measurement
Audio bitrate measurement
Skew measurement, video time offset, audio time offset

Results
Values and curves: **video quality (DMOS), blockiness, blur, contrast, flatness, audio quality, video bitrate, audio bitrate, video delay, audio delay, skew, VMAF**
"Quality vs. Bitrate" curves generation (to find the optimal bitrate)
Skew curves, skew warnings and errors based on user-defined thresholds
Useful interface: reference video (A), measured video (B), distortion video (A-B), seamless side by side, quality curves, bitrate curve, magnifying glass, audio waveform
Automatic reports generation (TXT, CSV, HTML)

Extra
Integrated HTTP server for distant results consultation and built-in database to store results
Automation: command line usage

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