

Digital Video Quality Analyzer DVQ

DVQ remotely controlled: central monitoring of digital picture quality

The Quality Explorer™ option (DVQ-B1) further enhances the excellent realtime analysis capability of DVQ (FIG 1), adding the ease of operation and flexibility of a Windows™ PC. It allows easy configuration of the analyzer via the Ethernet or RS-232-C interface. The Quality Explorer™ package includes a programming interface for custom Windows applications as well as Elementary Stream Analyzer™ software and Quality Monitor™ software. With these two programs, each commercial PC, in conjunction with one or more DVQs, becomes a compact, easy-to-operate monitoring center for digital picture quality.



Photo 43 400

FIG 1 DVQ determines subjective picture quality in realtime and requires no reference signal

Quality Monitor™ – a critical viewer

Quality Monitor™ continuously records quality parameters, the data rate of the MPEG2-coded video sequence as well as picture activity information and presents them in a clear-cut graphical display (FIG 2). Plus, it logs every error detected by DVQ in the digital video and audio stream. An export function allows subsequent archiving of

results and more in-depth analysis using other programs like Microsoft Excel™. Quality Monitor™ and DVQ communicate either on the serial RS-232-C interface or the more powerful Ethernet interface.

DVQ can be fully configured by Quality Monitor™. Via the Ethernet interface, virtually any number of DVQs – or digital TV programs – can be monitored and remotely controlled from a single Windows™ PC. Quality Monitor™ helps service providers and network operators maintain the required QoS (quality of service*) by means of DVQ without any programming effort on their own part.

Looking for the bit in the elementary stream

Elementary Stream Analyzer™ performs fast analysis of MPEG2-coded video streams. Together with DVQ, it records and analyzes video elementary streams via the Ethernet or RS-232-C interface and stores them as files (FIG 3). The elementary stream to be analyzed is already available as a file? No problem – Elementary Stream Analyzer™ imports elementary stream and transport stream data of virtually any length on its flexible data interface.

Analysis covers all levels of the MPEG2 video compression standard. From the sequences and groups of pictures of the elementary stream through motion vectors and macro blocks to the most inconspicuous flag, Elementary Stream Analyzer™ investigates the performance of the MPEG2 codec that is used and presents the results in a clear and illustrative way. Any syntax errors and deviations from the MPEG2 standard occurring in the elementary stream are detected and displayed. In addition, picture contents are displayed by means of an integrated MPEG2 decoder.

Indispensable tool

Despite outstanding analytical capability, Elementary Stream Analyzer™ is nevertheless simple to operate, making it an ideal choice for testing and assessing MPEG2 codecs of any type. Quality Explorer™ is an indispensable tool where one or more DVQs are operated in a network or the extended analytical skills of the DVQ/Quality Explorer™ team are wanted. Quality Monitor™ can be downloaded free of charge (www.rohde-schwarz.com – Products & More – DVQ – Download).

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See next page for more about DVQ.

REFERENCES

- * Wörner, Alexander: Optimizing digital TV networks – QoS maintained automatically. News from Rohde & Schwarz (2000) No. 166, pp 38–39
- Further articles
- Wörner, Alexander; Ibl, Harald: Picture quality measurements for digital TV. News from Rohde & Schwarz (1999) No. 161, pp 41–43
- Wörner, Alexander: Digital Video Quality Analyzer DVQ – Getting the picture on picture quality. News from Rohde & Schwarz (1999) No. 163, pp 4–6

FIG 2 Quality Monitor™ logs results obtained with DVQ and presents them graphically. Results can be stored and imported by other applications

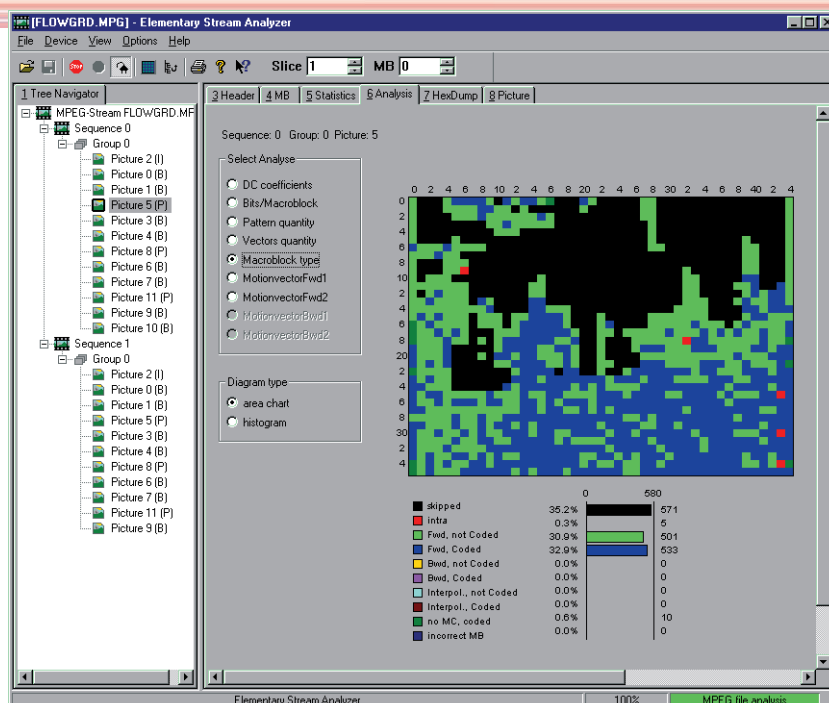
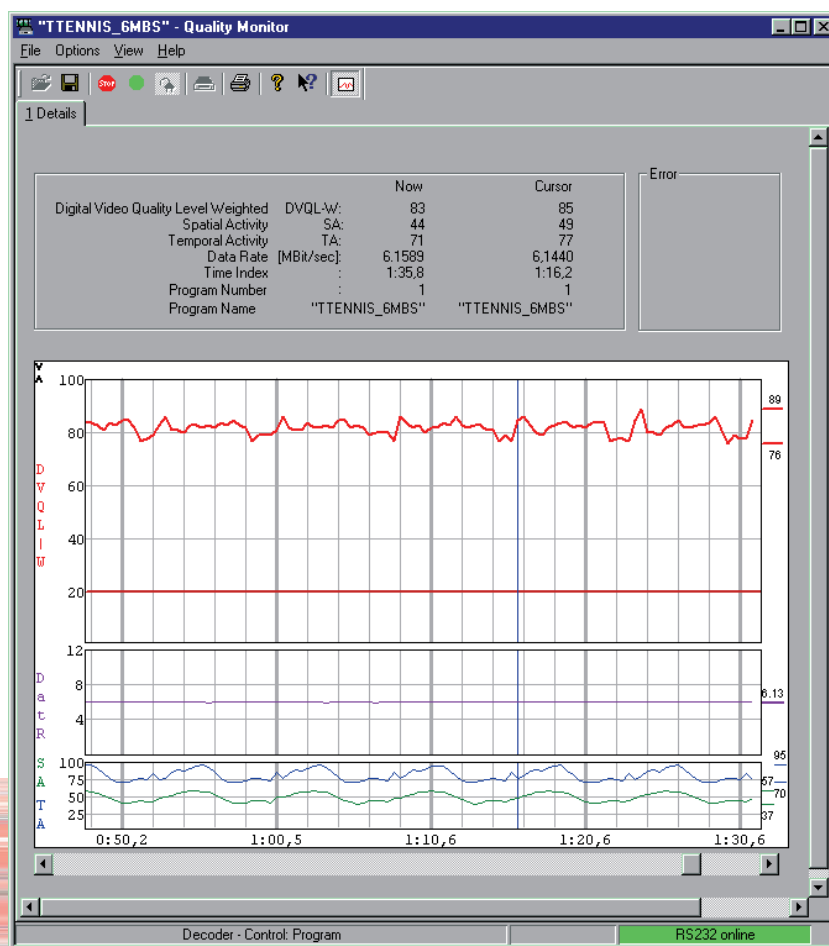


FIG 3 A highlight of Elementary Stream Analyzer™: illustrative display of MPEG2-coded data