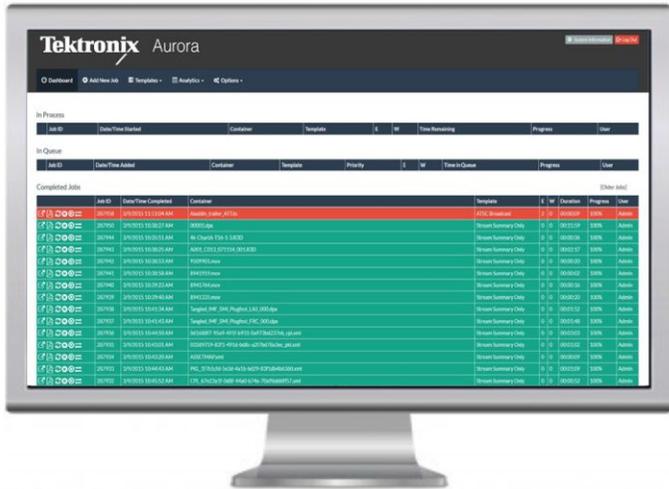


Automated File-based Quality Control System

Aurora Datasheet



Aurora is the new generation of automated file-based QC product that represents a significant leap forward for file-based quality control.

Key features

- Unparalleled, scalable speed
- Faster than real-time 4K analysis
- Enhanced Adaptive Bit Rate (ABR) support
- Configurable automated workflows
- QC report analytics
- Integrated Audio Loudness Correction

Automated file-based QC with Aurora

Aurora is the automated file-based QC tool that integrates into your production workflow and consistently delivers dependable results. By eliminating false positives and utilizing a high degree of correlation to human audio and visual perception, Aurora ensures that test reports highlight just the key issues, not hundreds of irrelevant nonissues.

The unique Aurora architecture and advanced use of both CPUs and GPUs ensures concurrent analysis of more file types at faster speeds than alternative solutions. Aurora is available with configurable CPU allocation and 3 levels of product for different grades of hardware utilization, providing an upgrade path for increased performance in the future.

Constant feedback from customers, integrators and partners helped design the new Aurora user interface, making configuration, operation and review easy to learn, quick to adopt and practical across a variety of ingest, production, and distribution environments.

Whether you are looking to apply metadata gate-keeping to keep your ingest clean, detecting visual and audible artifacts, identifying common editing errors, or testing for broadcast and distribution constraints, Aurora will make a positive difference across your operation.

Aurora Core VU

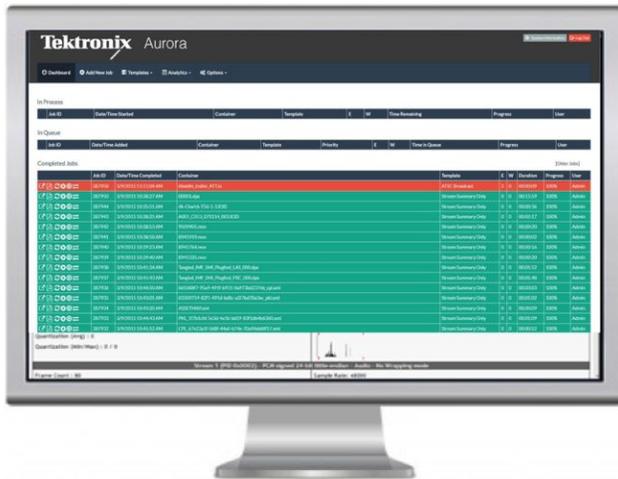
The entry level Aurora Core VU file-based QC platform enables up to 4 CPU cores to be allocated to each Aurora Verification Unit (VU). The resulting performance enables the throughput of SD files at speeds up to 5x real time, and HD files at speeds up to real time.

Aurora Professional VU

As our most popular platform, Aurora Professional VU enables up to 8 CPU cores per Verification Unit and provides support from up to 2 GPUs. A full hardware configured Aurora can analyze SD files at speeds up to 13x real time, HD files at speeds up to 4x real time, and 4K files at speeds up to real time.

Aurora Premium VU

Aurora Premium VU enables up to 16 CPU cores to be dedicated to each Verification Unit test process and can access high numbers of GPUs for accelerated testing. The analysis speed is up to 50% faster than Aurora Professional VU.



Aurora is the new generation of file-based QC solution from Tektronix fully implemented in a 64-bit architecture, enabling broad use of available CPU processing power and GPU acceleration to deliver unrivaled QC analysis speed and accuracy, and automated corrective actions.

Aurora delivers analysis speed and accuracy

Guaranteed QC capacity

Aurora guarantees QC capacity by reserving CPU and CUDA GPU capacity so that the system does not overload itself. Aurora doesn't slow down as the system loads up, with the first file analyzed just as fast as that same file with hundreds of other concurrent jobs in progress.

Broad codec and wrapper support

As a result of constant participation in key standards committees (EBU, SMPTE, AMWA, FIMS) Aurora always has the latest codes and wrappers with new updates arriving often. This means that almost any file you can make, Aurora can test.

Powerful user interface

Aurora has a modern user interface with a consistent information layout, with the ability to modify the theme/colors and display different language scripts in both the user interface and QC reports. Current support includes English, Japanese, Korean and Simplified Chinese.

Easy-to-use QC reports

Aurora job reports are a single easy-to-read page displaying all of the metadata in one location followed by an interactive error summary including frame-accurate access through Hydra Player. The report is consistent in look and content whether using a Web browser and PDF.

Fast access help files

Aurora provides Help files for every test accessed with a click from test templates or reports, providing an explanation of each individual test, how the test is performed, recommended correction(s), and where to in the workflow may be the best location to perform the fix.

Email notification

Aurora email notifications ensure that regardless of the receiving email device there is appropriate information provided for decision making or further action. Emails contain summary info and a HTML link to the full QC Report, and optionally the PDF version.

Unrivaled, scalable speed

Aurora is the first file-based QC product to have the ability to dynamically allocate threads across a user-specified number of CPU cores, enabling performance and scalability in high density virtual and blade environments. Using high CPU allocation or a lower CPU allocation combined with Aurora's unique GPU accelerated processing capability, QC throughput approaching wireline limits can be achieved, rather than being constrained by a legacy decoding and testing architecture.

QC report analytics

Aurora is the first file-based QC product that has an optional QC Analytics plug-in to enable media organizations to analyze results of multiple QC Reports and search across reports for specific criteria. Aurora can identify QC artifact trends and compare results from QC done at different workflow stages, pipeline issues and trends or identify vendors for KPI and SLA documentation.

4K production work flow

Aurora can test and play back IMF, the master format agreed on by major motion picture studios. Aurora has the ability to QC and play back complex Composition Play Lists (CPL) and can test 4K at real-time or faster in any other container or codec, including JPEG 2000, DPX, HEVC, H.264/AVC/AVCI/XAVC¹.

Enhanced adaptive bit rate support

Aurora is the only file-based QC solution on the market capable of both testing and playing back HLS/HSS/HDS/DASH and CableLabs intermediate ABR playlist file sets. Aurora includes tests that have been specifically designed to catch the most common causes of adaptive bit rate streaming problems.

Minimal false positives

Aurora algorithms are designed to reduce false positives, ensuring an accurate QC report. Tektronix operates a unique machine learning loop that ensures that continuous accuracy improvements of test algorithms based on customer supplied files with known QC artifacts.

Video essence tests

Aurora video essence tests include Macro block Noise, Up-conversion, Comb Artifacts, Field Order Swaps, Tape/Digital Hits, Perceptual & Film Artifacts, Black/Freeze Frames, Letterboxing/Pillarboxing, Dead Pixel Detection, Color Bars, PSE/Flash Detection (Harding FPA), and Cadence Change.

Audio essence tests

Aurora audio essence tests include Silence, Drop-outs, Peaks (dBTP, PPM, dBFS), Average Levels (R128, ATSC, ARIB), Clipping, Snaps/Clicks/Pops, Test Tones, Phase Swaps and Hiss/Hum. Aurora also applies a user-defined Audio Service Map for processing AES wrapped tracks or when mono channel audio essence tracks are tested together.

Metadata tests

Aurora metadata tests include Container Syntax, Video Essence Syntax, Dolby Audio Syntax, Dolby E Guard Band Alignment, Caption Syntax, Container Essence Contents, Cross-Check Container-Essence, Rude Word Detection in Text, Start Time code, Time code Discontinuity, Video Resolution and Run-times.

Distribution constraint tests

Aurora has predefined tests for most popular distribution formats, including CableLabs VOD, CableLabs ABR/EBP, iTunes, Netflix, ATSC, DVB, ISDB-T/TB, XDCAM/RDD-9, AS-02 and DPP/AS-11.

Automated workflows

Aurora includes tools for implementing end-to-end workflows, including Smart Test Plans for automatically applying test plans to your incoming files, and a Decision Engine that enables automated post QC test file movement and corrective actions.

Systems integration

Aurora QC includes an easy to use SOAP API, as well as the legacy CeriTalk API, allowing leading vendors to seamlessly integrate Aurora QC into their solution workflows. Major partners include Amberfin, Aspera, Astec, Imagine Communications, Telestream, iBroadcast, DataMiner, and FileCatalyst.

Supported formats

As of August 2015, Aurora supports the following file formats. Please contact Tektronix for latest listing.

Container wrappers

MXF (All OP, including AMWA defined AS, RDD-9, P2, SxS), Transport Stream, Elementary Stream, Program Stream/VOB, AVI, WMV/ASF, QuickTime/MOV, GXF, MP4, 3GPP, LXF, R3D, DPX, DXW, HLS, DASH, Smooth Streaming, IMF, and DCP (unencrypted).

Video codecs

H.264 (AVC/AVC-Intra/XAVC), MPEG-2 (including XDCAM, IMX and D-10), ProRes, JPEG 2000, DNxHD (VC-3), Cineform (VC-5), VC-1 (and WMV), DV/DVCP, Flash VP-6/7, RAW (Huffman, YUV, RGB, Blackmagic), EXR, DPX, RED, Canopus, and H.265 (HEVC).

Audio codecs

PCM Audio (WAV/AES/BWF), AAC, HE-AAC, Dolby Digital (AC-3), Dolby Digital Plus (EAC-3), Dolby TrueHD (MLP), Dolby E, WMA Standard Pro, MPEG-2 (L1,2,3) and MPEG-1. Audio correction is available on constant bit rate codecs only.

Captions / subtitles / text

CEA-608/CEA-708 in Line 21 video, ATSC 53, SCTE 20, SCTE 128 and SMPTE 436M; SMPTE Timed Text and variations, including DFXP; EBU Subtitles, including STL; SRT; SCC.

¹ The optional Advanced Codec Pack is required for access to Canopus and HEVC decoders, and also enables GPU acceleration to the native capability of the JPEG 2000 decoder.

Ordering information

Please contact your Tektronix Sales Representative to understand how Aurora may be customized for your specific workflow needs and content volume.



Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com.

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26 Aug 2015 2NW-60054-2

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