

APPLICATION BRIEF

END-TO-END BROADCAST AND LIVE PRODUCTION WITH AMD ADAPTIVE AND EMBEDDED COMPUTING



together we advance_AV

OVERVIEW

Broadcast television and live event production depend on a chain of specialized equipment and toolsets. Equipment providers building cameras, encoders, production switchers, audio systems, media servers and distribution systems face a common challenge: each product demands a different balance of real-time video performance, software flexibility, and connectivity. Yet broadcasters and production teams expect coherent, interoperable systems across the entire broadcast chain with deterministic latency and 24/7 reliability.

AMD is uniquely positioned to address this. By standardizing on AMD adaptive SoCs, FPGAs, and x86 embedded processors, OEMs can share design expertise, reuse IP, and simplify their supply chain across product lines, while selecting the right processing architecture for each function.

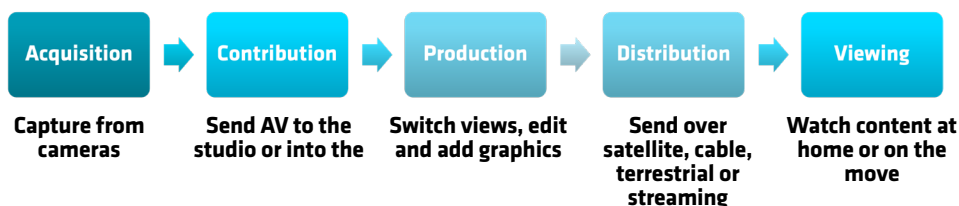
Operators benefit from equipment that works together seamlessly, from acquisition through production and delivery, whether on-premise, in the cloud, or across hybrid architectures.

THE END-TO-END AMD ADVANTAGE

AMD is the only embedded technology provider offering adaptive SoCs, FPGAs, GPUs and x86 processors under one roof, enabling OEMs to build coherent system architectures from camera sensor through the broadcast chain to the viewer screen.

AMD adaptive SoCs and FPGAs handle the real-time, deterministic AV processing and connectivity functions that software alone cannot deliver including sensor interfacing, AV I/O, frame-accurate switching, and broadcast-grade H.264/H.265 encoding. AMD Ryzen™ and EPYC™ Embedded processors provide the software ecosystem, AI capability, and virtualization needed for modern software-defined production and playout workflows. And AMD Alveo™ accelerator cards bridge on-premise and cloud architectures with power-efficient multi-channel processing and transcoding.

This breadth means customers can standardize on AMD across their product lines, share design expertise, reuse IP, and simplify their supply chain – while selecting the right processing architecture for each function in the broadcast chain.



KEY BENEFITS

BROADCAST-QUALITY PROCESSING

Real-time 4K/8K processing with integrated H.264/H.265/AV1 codecs and professional AV interfaces.

WORKLOAD FLEXIBILITY

FPGAs and SoCs deliver deterministic, real-time I/O and AV processing while x86 processors handle software-defined control and virtualization.

BROADEST EMBEDDED PORTFOLIO

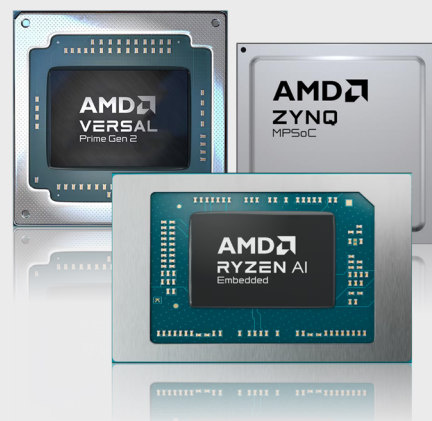
From FPGAs and SoCs to embedded processors, OEMs can scale across product tiers from a single vendor.

AI AT EVERY STAGE

AMD XDNA™ architecture and adaptive SoC inference for automation, tracking, and analytics.

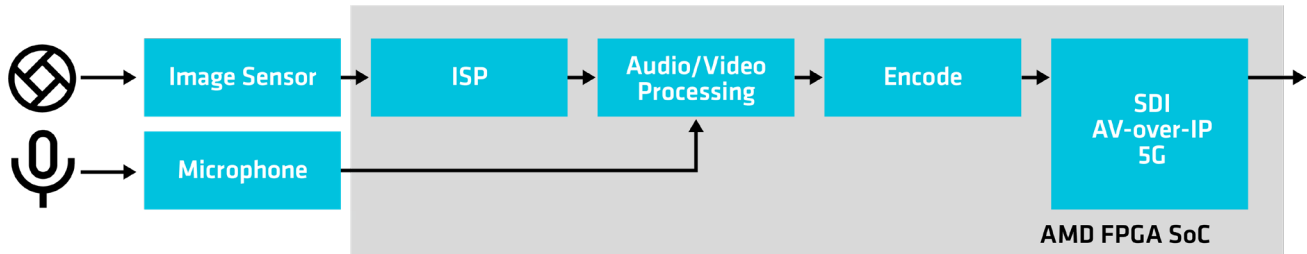
PLATFORM LONGEVITY

Extended lifecycle support aligned with broadcast equipment cycles.



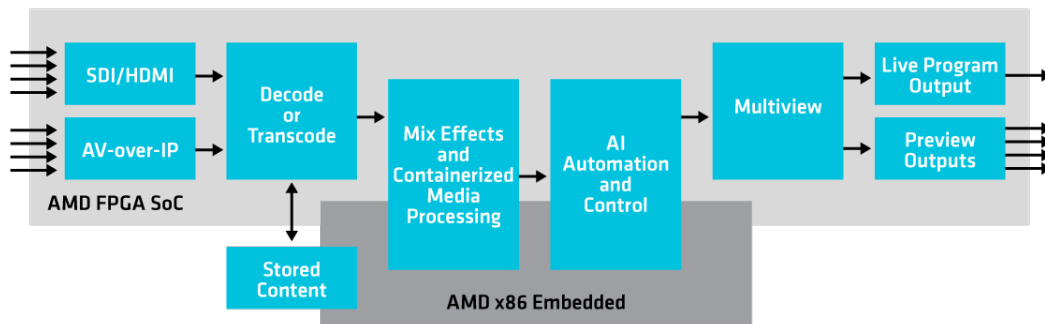
ACQUISITION & CONTRIBUTION ENCODING

Cameras, contribution encoders, and mobile wireless video systems form the front end of every broadcast or live event. AMD adaptive SoCs and FPGAs interface directly with image sensors, perform real-time video and audio processing, and output via SDI, HDMI™, or AV-over-IP, with integrated H.264/H.265 encoding for single-chip camera and encoder designs. Contribution encoders compress live audio and video for transport over satellite, fiber, IP, or bonded cellular networks, including hybrid and cloud workflows where content is sent to remote or cloud-based production facilities.



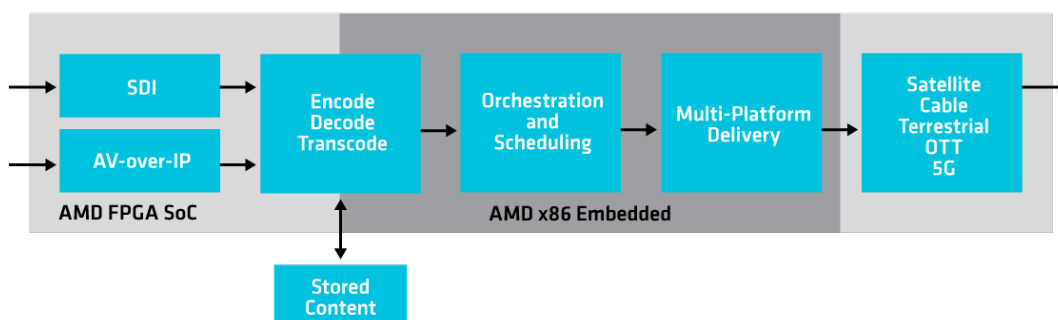
LIVE PRODUCTION & SWITCHING

Production switchers and control rooms process multiple live sources simultaneously, switching, mixing, keying, and compositing with frame-accurate synchronization. AMD FPGAs and SoCs handle real-time I/O, format conversion, and crosspoint switching, while AMD Ryzen Embedded processors provide software-defined control, graphics, multiviewer output, and AI-powered automation via the AMD XDNA architecture. For large-scale operations, AMD EPYC Embedded processors support virtualized, containerized production workloads. AMD FPGAs also power professional audio consoles and intercom systems, processing hundreds of channels with low-latency AES67 and Dante connectivity.



DISTRIBUTION ENCODING & DELIVERY

Distribution encoding demands high channel density and compression efficiency across satellite, cable, terrestrial, OTT, and 5G broadcast networks. AMD Alveo accelerator cards deliver dense, low-latency H.264/H.265/AV1 transcoding for cloud and on-premise deployment. AMD adaptive SoCs provide compact, power-efficient encoding for smaller-scale distribution. AMD Ryzen and EPYC Embedded processors power playout servers, channel-in-a-box systems, and master control, handling content assembly, audio loudness management, and scheduling. Cloud-to-ground workflows return processed content from cloud facilities to local distribution using consistent AMD technology from venue to viewer.



WORKFLOW STAGE	AMD PLATFORMS	KEY CAPABILITIES
ACQUISITION & CONTRIBUTION Cameras, encoders, mobile wireless, SDI-IP gateways	• AMD UltraScale+™ FPGAs • AMD Zynq™ and Versal™ adaptive SoCs	• MIPI®/SLVS-EC sensor interface • Real-time Image Signal Processing (ISP) • Integrated H.264/H.265 codecs • JPEG XS mezzanine compression • 12G-SDI, HDMI, AES67 • ST 2110/IPMX, NDI, Dante AV • Audio processing and transmission • Ground-to-cloud ingest via IP/bonded cellular
LIVE PRODUCTION & SWITCHING Production switchers, control rooms, audio consoles, intercom	• AMD UltraScale+ FPGAs • AMD Zynq and Versal adaptive SoCs • AMD Ryzen and EPYC Embedded processors	• Real-time switching and processing with multiview • Genlock/PTP sync • Deterministic I/O with x86 software-defined control • Multichannel AES67/Dante audio • AI-powered automation via AMD XDNA NPU • PCIe® I/O density for virtualized production • Scales from compact OB trucks to large broadcast facilities
PLAYOUT & DISTRIBUTION Encoding, transcoding, playout servers, master control	• AMD UltraScale+ FPGAs • AMD Zynq and Versal adaptive SoCs • AMD Alveo accelerator cards • AMD Ryzen and EPYC Embedded processors	• High channel density H.264/H.265/AV1 • Software-defined playout • AMD Radeon™ graphics • Audio loudness compliance • Cloud-to-ground – OTT, satellite, cable, terrestrial, 5G

NEXT STEPS

For more information on Broadcast AV solutions, visit www.amd.com/broadcastav

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