



GO LIVE WITH HIGH QUALITY VIDEO STREAMING

Introduction

In a world of thriving social media with 3G/4G broadband mobile communications, more and more live broadcasts are streaming into Facebook, YouTube, blogs and other online video platforms. Anyone with a smartphone can become a live event streamer or news broadcaster; access to a worldwide audience is in his/her palm.

Wedding guests and party-goers are learning how to share their moments of joy with live streaming apps; marketers are exploring the new technology to achieve higher sale goals; many university students are taking their degrees via distance learning; religious groups are streaming lectures to a broader online audience; famous singers or music bands are going live with their concerts so that people who cannot get tickets can still listen from elsewhere or after the fact; social organizations or reformers are creating calls to action by live streaming

their campaigns.

The growing ubiquity of live streaming represents huge opportunities for both users and for hardware /services providers. For ordinary users, streaming events with a smartphone to Facebook friends is usually enough. However, for professionals aiming at monetization or seeking more features, higher video definition, and longer streaming times require higher quality and a more professional look.

Professional users, such as businesses, news media, sporting event sponsors and more usually stream events using a dedicated industrial computer, or video streamer, and often turn to more professional video platforms supporting full high-definition live streaming with customizable services and rich features.

For scenarios like live event broadcasting, distance learning, digital signage, or religious event streaming, there are often many things that need to be controlled, such as lighting, screens and curtains, video and audio feeds, sfx, etc., and an industrial grade computer—especially one with ample control interface support—is considerably better than a commercial computer.

Application Requirements

For a dedicated live streaming system, powerful video processing capability is of paramount importance. However, since there are many different types of video connectors on different pieces of equipment, such as HDMI, DP, DVI, VGA or Composite, the proposed video system must accommodate all types of video interfaces. In addition, as many live events are outdoors, the system must also be rugged enough to ensure reliable streaming from an outdoor environment.

Solution

For a dedicated live video streamer, [Advantech proposed embedded computer ARK-3520](#), a highly expandable embedded system with extreme performance and reliability, combined with an iDoor MOS-4140H module, which provides an HDMI interface that can handle 1080P full HD, and a video capture card DVP-7011HE ensuring high quality live streaming at a professional level, suitable for entertainment, or news media, business professionals, and so on.

[Advantech embedded computer ARK-3520](#) is an industrial-grade computer running an Intel® state-of-the-art 6th gen. Core™ i3/i5/i7 mobile processor (BGA) with support for up to 32GB of DDR4 SODIMM memory; it easily handles high-speed video processing

for real-time live broadcasting, ensuring smooth, high-quality live streaming.

The iDoor is a removable I/O module that is simple to swap, so the system can be adjusted to meet different interfacing needs for communication or control purposes; this is a great convenience for system integrators in developing applications and also minimizes inventory pressure.

DVP-7011HE is a PCIe-bus, software compression video capture card with 1 channel of either HD-SDI, HDMI, DVI-D, DVI-A, or YPbPr video and 1 audio input. With an easy-to-use software development kit (SDK) and flexibility to stack multiple cards, DVP-7011HE is an ideal solution for various video capture applications or video surveillance.

[Advantech embedded computer ARK-3520](#) is compatible with the ARK Plus AMO-3xxx series products, which are Advantech expansion modules that can stack easily onto the embedded system when another layer of I/O modules or a removable drive bay is required. So it is easy to upgrade the system by enhancing connectivity and storage, delivering remarkable economic benefits to both system integrators and users.

These exclusive modular designs save tremendous time and cost on customization, and retain maximum expandability to accommodate future market changes and needs. Assembly can either be done by the SI or by Advantech CTOS services, whichever gives customers the greatest time and cost advantages.

This solution not only provides a hardware platform for live streaming but also has the software for developing applications already integrated. Advantech WISE-PaaS IoT software platform is preinstalled on the system to provide extensive software resources for designing IoT and edge computing applications. The intuitive graphic user interface enables the SI to develop a

domain-focused application without a complex and lengthy programming process.

Advantech Software Development Kit (SDK) is also provided with the product so the SI can develop customized features, such as allowing captured video to stream to a Content Delivery Network (CDN) server via standard protocols like RTMP and RTSP for efficient live Internet broadcasting.

Benefits

- Extreme performance from an expandable, embedded system that enables high quality video processing
- Full selection of ready-to-use video [iDoor](#), [video capture cards](#) and [ARK Plus modules](#) deliver great flexibility for system integration
- Software applications can be incrementally developed with Advantech SDK, enabling video capture, encoding, processing, editing, analysis, storage, live streaming, and so on
- Seamless hard- and soft-ware integration supported by Advantech technical resources for reduced development time and cost

System Diagram



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