



Bolin Delivers Video Processing Engine Cameras Using AMD Zynq™ UltraScale+™ MPSoC

AMD Adaptive Computing Solution Helps Bolin Create Strongly Competitive, Powerful, HEVC-based Broadcast Cameras with Flexible, Feature-Rich, Offerings

PARTNER

BOLIN
TECHNOLOGY

INDUSTRY

Pro AV / Broadcast

CHALLENGES

Bolin wanted to create an AV-over-IP solution for SDI broadcasters that fit within a 1 Gb network infrastructure but did not compromise on video quality.

SOLUTION

Bolin's R9 and EX Ultra SDI-over-IP cameras leverage the Zynq UltraScale+ MPSoC from AMD to deliver a solution offering a solid combination of capability, programmability, flexibility, and efficiency.

RESULTS

The AMD solution has enabled Bolin to compete with much larger competitors, offering a feature-rich and flexible solution at a very competitive price point.

AMD TECHNOLOGY AT A GLANCE

AMD Zynq UltraScale+ MPSoC

Bolin Technology designs and manufactures feature-rich pan, tilt and zoom (PTZ) video camera solutions. Its cameras are used in a variety of applications, including television broadcasting, professional sports, education, live performances, space exploration, and oceanic research.

CHALLENGE

Recently, Bolin Technology was looking to create a solution for SDI broadcasters that wanted an AV-over-IP option. The company chose HEVC as the video delivery codec, which is a standard with wide adoption and a diverse ecosystem.

Bolin's primary goals were high video quality, low latency, and bandwidth low enough to fit easily into a 1 Gb network infrastructure.

"The constraints of a 1 Gb network typically cause compromises in all of these areas, and we were willing to accept those, but only at a minimum," said Tim Godby, product marketing manager at Bolin Technology. "Everyone knows that AV-over-IP is not just the future, it's the present. We wanted to offer the industry an SDI-over-IP replacement."

There are two primary ways to enable video acquisition in a camera. The first is to use a fixed-function SoC, which does a great job combining core features and is typically low in cost, but compromises on image quality and latency. The second approach is to use a flexible, FPGA-based SoC solution that allows a

reprogrammable video pipeline, multiple frame rates, multiple outputs, and IP streams that are independently adjustable.

Ultimately, Bolin chose the FPGA-based Zynq UltraScale+ MPSoC from AMD for its design, power, and flexibility.

SOLUTION

Two of Bolin's newest SDI-over-IP cameras are the R9 and the EX Ultra.

The R9 camera offers full-broadcast SDI format and standard video capture for indoor use. It's a Fast HEVC camera offering low bandwidth, low latency, and high picture quality. The EX Ultra offers the same capabilities and is IP-67 rated for outdoor use. Both SDI-over-IP cameras offer three image options: large-sensor UHD quality, high-speed 4K60 UHD quality, and full HD.

Inside both cameras, the AMD solution offers "the best combination of capability, programmability, flexibility, efficiency, and power draw," Godby said. "The benefit of using the AMD solution is that our customers can experience a beautiful, flexible, and scalable solution for reliable SDI quality with dramatically low bandwidth over IP. We could not be more excited about it."

Godby added that the programmable stack on the AMD FPGA-based solution is very powerful and flexible. "We discovered it would open up just about anything we wanted to do. Any set of

codecs or features are possible in the FPGA. It is the solution for us.”

RESULT

Bolin offers high quality, low latency, low bandwidth video acquisition that delivers encoded video in an AV-over-IP workflow.

“We believe this is the first camera of its kind that makes it possible for broadcasters to have an IP solution that fits into their 1G network, and the first to deliver media over multiple formats simultaneously,” Godby said. “Anything that normally fits onto a 1G network usually requires some quality compromise. We didn’t want that, and we found that AMD was the right solution for us. We have been pleased by the stunning results, and the proof is in the image.”

Godby added that the flexible and adaptive computing technology from AMD can handle Bolin’s needs today and down the road.

“Bolin plays in the very competitive Broadcast and Pro AV space, and AMD has enabled us to be a much bigger player in a field dominated by some giants,” Godby said, adding that Bolin’s cameras run from \$6,395 to \$8,995 in cost and compete with cameras costing twice as much. “Bolin is extremely competitive, and the AMD solution is a big part of that story.”

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About Bolin Technology

Bolin Technology is a PTZ camera brand specializing in well-built and feature-rich baseband video and AVoIP video camera solutions at a competitive price. Its indoor and outdoor PTZ cameras are in numerous applications, including broadcast, professional sports, education, unified communications, live performance venues, oceanic research, space exploration, and any other scenario where high-quality video, flexible connectivity, and accurate, smooth, and quiet PTZ performance is required. For more information, visit the Bolin website at www.bolintechnology.com.

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