



RGBlink mini Live Streaming Switcher Powered by Xilinx Artix

The RGBlink mini Streaming Switcher Delivers Professional-Quality Live Video Production Technology to Consumers in a Compact Form Factor

AT A GLANCE:

Xiamen RGBlink Science & Technology Company Ltd. (RGBlink), provides professional audio and video processing equipment, dedicated to developing professional audio and video products and solutions.

Industry: Consumer Electronics
Head Office: Xiamen, China
Established: 2009
Website: <https://rgblink.com/>



Figure 1 – The RGBlink mini Streaming Switcher delivers professional-quality live video streaming to consumers

CHALLENGE:

With the development of internet and AV technologies, live streaming has gradually shifted from the monopoly of professional media organizations to a pastime for mobile users. Live streaming services for entertainment and online sales has mushroomed in recent years, and a growing number of people have begun to specialize in this space. RGBlink, which has more than ten years of experience serving the professional video market, wanted to bring advanced video production capabilities to a broader consumer market.

SOLUTION:

Addressing surging demand in the streaming industry, RGBlink, a professional supplier of audio and video processing equipment and solutions, launched the mini and mini+ Streaming Switchers. These tiny signal switch devices tailored for IP video streaming applications, open the door for general consumers to enjoy professional audio and video technology. The device is built on Xilinx’s Artix®-7 7A200T platform.

ABOUT THE COMPANY:

Xiamen RGBlink Science & Technology Co., Ltd. was established in 2009 as a provider of audio-visual equipment for use in broadcast, theater, and other professional video production applications. The company’s video processing products include display control, switching, streaming, and splicing systems, as well as signal conversion and extension solutions. These products have won several awards including the ISE Best Onsite Video Control Equipment Solution in 2018, and a Best Video Wall Solution Award at Infocomm 2017.

CHALLENGE:

RGBlink was looking to bring its broadcast-quality video production technology to the consumer market. The company knew that regardless of the audience, its products would need to be secure, reliable, and rich in features, but also be easy to use, portable, and compatible with many different types of streaming equipment.

The product also had to be affordable to consumers. With continuous advances in science and technology, the company needed to ensure that cost pressures brought by subsequent upgrades would not price them out of the consumer market.

SOLUTION:

The RGBlink mini Streaming Switcher leverages a highly integrated, high-performance, single-chip architecture, that meets both high-performance and small form factor requirements.

The switcher is built upon the Xilinx Artix®-7 7A200T platform. This device series is based on Xilinx’ s industry-proven 28nm process technology and is tailored for both power-sensitive and cost-sensitive applications. It also meets the needs of RGBlink for a high-performance and low-cost FPGA.

RGBlink decided to use Xilinx silicon for its mini-series products following many stringent tests. For example, when tested at 75°C operating temperatures, the 7A200T showed excellent stability and maintained its high-performance logic computing capabilities.

The Artix 7A200T plays the role of main core processor in the RGBlink mini. The processor allows monitoring of four input signals on a 2.0-inch TFT screen, while also enabling such functions as video signal deinterlacing, picture-in-picture, special effects switching, format conversion, color keying, PVW (six-picture preview), sound bar visualization, OSD, LOGO superposition, and the all-important signal processing for USB3.0 streams. All functions are processed internally in the Artix 7A200T without the need for other external assistant processing units. This allows RGBlink to achieve a form factor that is 12.5 times smaller than competing devices.

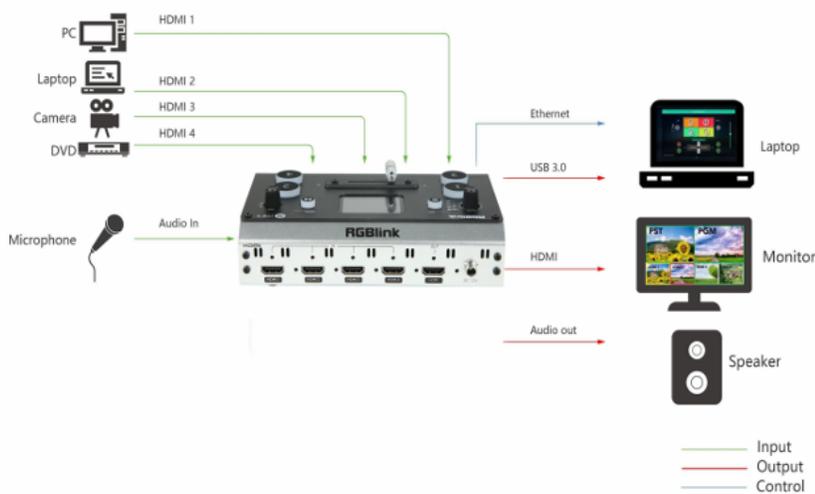


Figure 2 -- System connection diagram for mini video processor

In addition to performance and size advantages, the complete hardware and software programmability of Xilinx’s FPGA devices provides the RGBlink design team with advantages to continue to upgrade and enhance with future functions and product iterations.

“We believe that businesses will continue to migrate and gravitate towards solutions that have online capabilities in the post-pandemic era. The pandemic has supercharged this trend, and RGBlink is ahead of this trend in bringing professional-level video technologies to dedicated consumer and prosumer products, whether for online streaming, collaboration, or in-presence distribution,” said Zengwang Chen, deputy general manager and head of the Product Center at RGBlink. “The maturity of Xilinx’s Artix 7A200T, including its excellent performance-to-power ratio and adaptive programmability, really are a great match for the design requirements of our new products.”

RESULTS:

The mini Streaming Switcher delivers portability, ease of operation, as well as a high level of versatility in a single device. The product replaces solutions that require multiple independent devices. mini can achieve a six-picture, multi-position, real-time preview through an external screen, including PGM, PST, and 4 HDMI input signals, so that streamers can enjoy the same preview experience as a professional TV and broadcast studios.



Figure 3A & 3B – Using the mini Streaming Switcher, streamers enjoy the same preview experience as a professional TV studio.

The RGBlink mini Streaming Switcher provides streamers with higher image and sound quality, resolving potential issues with picture quality. It synchronizes multiple HDMI input signals of potentially different resolutions for output via HDMI and USB3.0, up to 1080p60. The mini supports digital embedded audio as well as an external Line in. Audio can be embedded into HDMI signals during streaming from any of the connected sources.

RGBlink mini brings users professional-quality features such as Picture-in-Picture (PIP), a range of transition effects, Chroma Key, and on the mini+, 8-bit PTZ control. Ultra-low 1.5-frame latency image processing makes mini a standout performer.

Extending usability, mini can be controlled remotely from a mobile phone or a laptop too, empowering streamers to start shooting and streaming in an instant. With its small form factor, mini can be easily put into a bag and transported anywhere.

Already meeting wide acclaim, mini has rapidly become a popular choice for online streaming of presentations and performances from music to gaming for distance education, as well as for meetings and collaboration. The RGBlink mini is available in more than 50 countries, with the product named “Best of Show” at InfoComm China 2020.

ADDITIONAL RESOURCES: [Learn More About Xilinx Artix-7 7A200T](#)

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