



Low-Latency Collaborative Video Streaming

Xilinx and Skreens provide Broadband Collaborative Ultra Low-Latency Video Streaming for their Livestream Series **ALL TOGETHER NOW**



AT A GLANCE:

BroadBand Collaborative works to expand the reach and exposure for performing artists and organizations. With the recent events of the worldwide shelter-in-place in the context of COVID-19, the need to find technical platforms to connect artists and audiences has become more urgent.

Of special importance is for the technology to be simple enough for the artist community to adapt. In response, BroadBand worked with Skreens to bring artists from around the world together, synching high quality audio and video in real time via the live streamed show ALL TOGETHER NOW. Skreens' ability to simultaneously

support a live program host created an enhanced sense of connection and ability to respond in real time. Together, BroadBand and Skreens created a new class of media experience, leveraging the real-time computing platform from Xilinx, and opening up new markets, and contributing experiential, meaningful content during a time of crisis.



CHALLENGE:

In order to stay socially connected in the rapidly changing world, now more than ever, streaming platforms must be able to link people seamlessly across various media such as video all while doing so in real-time with limited latency and with limited end-user technical knowledge.

SOLUTION:

Skreens and Xilinx FPGAs provided an ultra-low latency video streaming solution for Broadband Collaborative to connect viewers and artists via video with a seamless, real-time experience that is broadcast to multiple streaming services simultaneously.

RESULTS:

Viewers now have access to more immersive, intimate, and interactive experiences while in the comfort of their homes. Performers also have access to a simple to use medium that keeps their sound and video quality high with no additional expensive or complicated equipment and have a way to work with other artists in real time across a distance, which is distinctly different than the other live streaming options available right now.

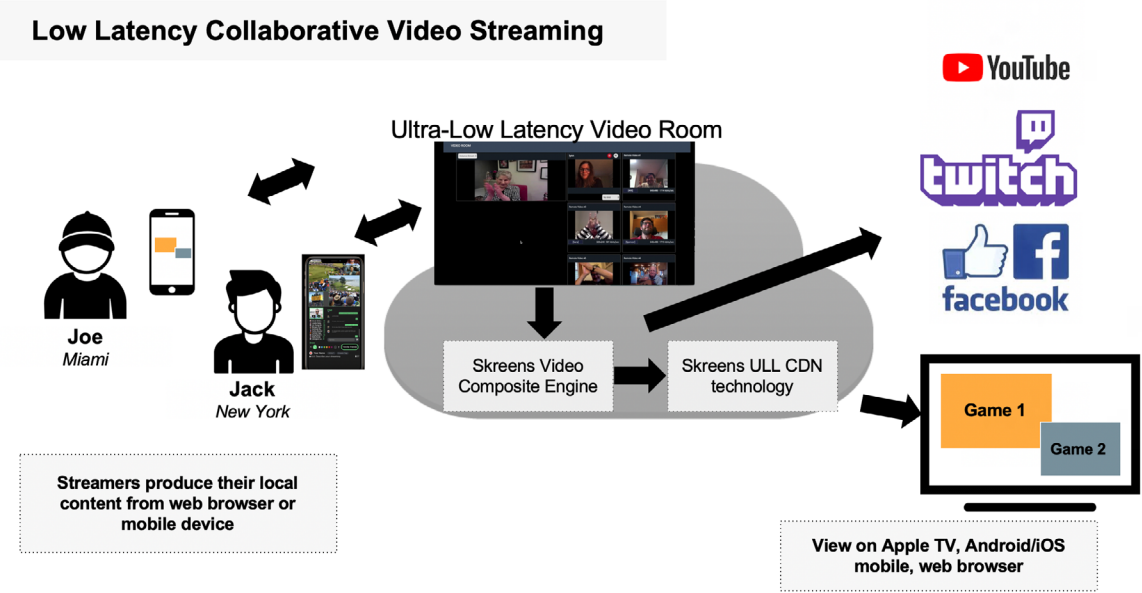
CHALLENGE:

Increasingly we are being faced with the need to evolve how we communicate. We, as social creatures strive to remain social and interact with others and stay up to date with evolving culture yet the platforms to do so are changing. Online collaboration companies such as Zoom and Webex are great real-time platforms for a few participants, yet they are exclusive for a limited set of participants and can degrade the video quality. Twitch, the world's largest live streaming platform for gamers can stream to 1000s of people but the only native interaction for viewers is a chat option which is not overly intimate and does not offer the ability to stream multiple (2 or more) games into the same composited video easily in real-time. Currently, there are no platforms for linking people seamlessly across various media (video being the most powerful) – all while doing so live, and with limited latency. Now, more than ever due to COVID-19, staying connected has become more pressing.

SOLUTION:

Broadband Collaborative is working with Facebook Live, YouTube, and Twitch to bring a new intimate and interactive video experience to thousands of viewers which will be a new category of live online interaction. Built on Skreens and FPGA acceleration Broadband Collaborative is able to bring together a range of musicians, actors, dancers, poets, and comedians to perform and be interviewed, all in real time.

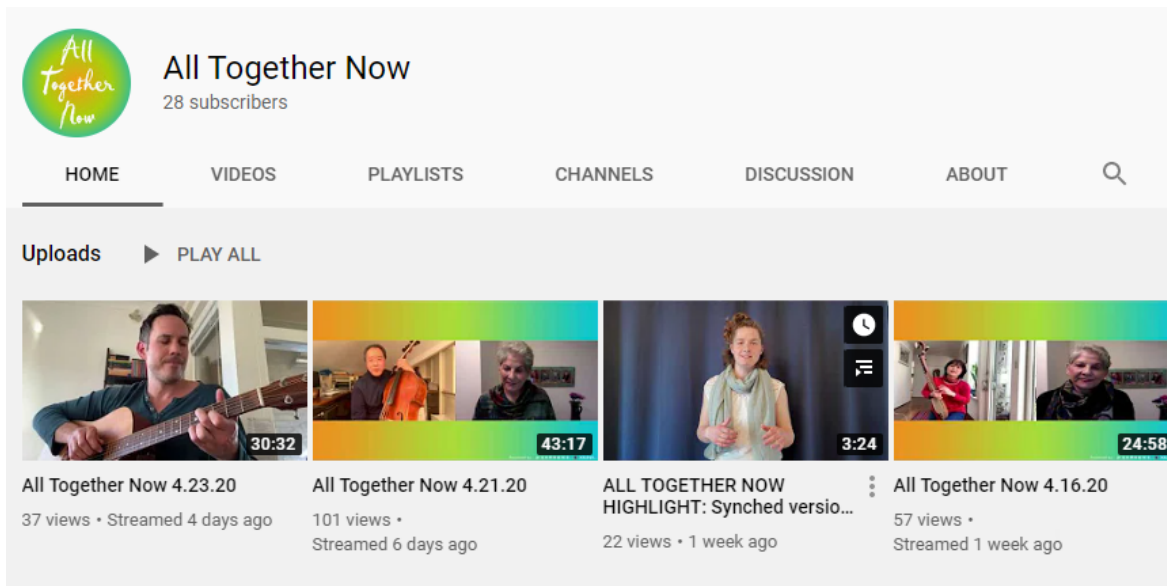
Skreens built a complete video production studio powered almost entirely through Xilinx FPGAs and managed all the elements of a low latency video solution. All of the video management such as positioning, location, layering, chroma-key, audio mixing, overlays, background management, and low-latency encoding and decoding of the videos are all being powered by Xilinx FPGAs. Skreens chose a server architecture from Aupera, a Xilinx datacenter partner, constructed with a large array of Xilinx Zynq MPSoC 7EV devices without a CPU host. Given the accelerators each have a CPU complex on-board the SOC, the cost of x86 infrastructure and overhead versus traditional CPU data center server nodes is eliminated, making it incredibly cost effective. Skreens is also running the system in docker containers. This helps them to drive the cost of encoding and decoding significantly down compared to other hardware.



RESULTS:

The resulting solution is an immersive and interactive experience where artists can connect and viewers can consume high quality cultural events, concerts, and interviews with higher production values while at home. Broadband’s [ALL TOGETHER NOW](#) is rolling out a lineup of shows that feature artists from across the globe, such as singer/songwriter Livingston Taylor, Grammy Award winners Yo-Yo Ma and Bill Harley, world-renowned pipa player Wu Man, comedian Jimmy Tingle, Broadway up and comers Matt Gould and Griffin Matthews, hip-hop violinist Bri Blvck, and many more.

Together, BroadBand, Skreens and Xilinx created a new class of media experience contributing experiential, meaningful content during a time of crisis.



ADDITIONAL RESOURCES:

ALL TOGETHER NOW: [FB Page](#) | [YouTube Channel](#) | [Twitch Channel](#)

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