BIRDDOG STUDIO NDI
POWERS ESPN BILLBOARD
13 DAY CONTINUOUS LIVE STREAM

When tasked with the ambitious project of a 24 hour a day livestream for 13 continuous days, Jay Kopelman of B Live turned to BirdDog Studio NDI to encode baseband video to NDI® and also decode NDI® back out to live screens.

The ESPN Billboard involved four College Football super fans living on top of a billboard in San Diego some 80 feet off the ground in a knockout style competition. If their team lost they were eliminated from the challenge with the last one standing winning the competition.

The production not only called for live streaming, but also distribution to many local and national broadcasters. There was also a requirement to send NDI® back to the large television the super fans watched the game on perched up high on the billboard. To achieve all this Jay knew he had to turn to NDI® and BirdDog Studio NDI hardware.

"To simplify the setup and management of everything I decided to go with a fully NDI workflow." Said Jay Kopelman, Director of Digital Engineering, Video Production, Live Streaming and Digital Production at B Live. *"All our BirdDog Studio NDI's ran with no interruption for the 13 days straight in both Encode and Decode modes."* Continued Jay.

Alongside the 24-hour a day live stream; there were many live feeds to local and national broadcasters across the 13 days.

"We had many live tie-ins to local and national broadcasts. Daily live hits to several Disney owned properties, some were ESPN's First Take, ABC news 7, and Good Morning America." Said Jay.

The contestants watch a big screen TV which is powered by a BirdDog Mini decoding NDI back out to HDMI.

The technical challenges of the project were substantial. 4 people living on a billboard 80ft in the air, multiple camera feeds from the ground as well as on top of the billboard, routing video back to the television on top of the billboard; all with the video control room more than 250ft away from the base of the billboard. With all the live sources needing to be fed into the main NewTek TriCaster, NDI® was the logical choice of IP format and BirdDog Studio NDI hardware was the backbone of the entire production.

> *"The billboard was 80ft high and our video control was about 250ft away down the back of the building in the back parking lot. To simplify the setup and management of everything I decided to go with a fully NDI workflow." Said Jay. "I ran tactical Cat6 cable up from control to a POE switch up by the billboard. From there I ran out 100ft Cat6 to each BirdDog Studio NDI and cameras."*

The BirdDog hardware encoders and decoders bridged the gap between old traditional baseband video to NDI®. In total there were five BirdDog Studios used in the setup. Three Studio NDI attached to two Teradek receivers that were receiving video from two cameras across the street in the Adobe headquarters. These were used to encode SDI into NDI® to feed into the NewTek TriCaster. There was also a roaming camera around the billboard and street level sending wireless to the video control room and a third Studio NDI was attached to the Teradek receiver to encode this into NDI® and feed into the NewTek TriCaster.

To capture the super fans reactions as they watched the game a GoPro was installed atop the television on the billboard and this was attached to a fourth Studio NDI to encode the HDMI feed into NDI® and send over Ethernet back to the video control room.
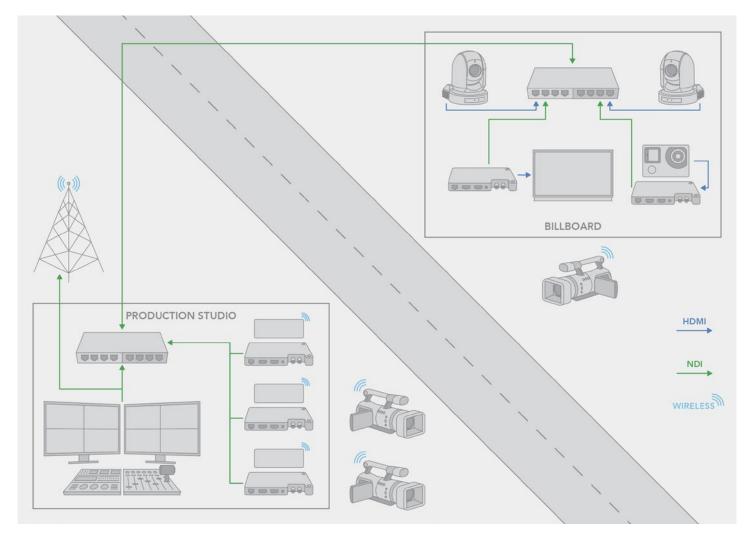
NDI® Decoding

BirdDog are the world's only hardware decoders for NDI® and this was the hero feature for the project. The ability to send an NDI® feed directly from a TriCaster to the BirdDog Studio NDI allowed B Live to send the football games, along with other content, to the television on the billboard for the fans to watch. This was all done over a single Ethernet cable that also included power for the Studio NDI using PoE.

> *"We needed to run live ESPN games, graphics and roll in videos from our TriCaster to the TV screen for the super fans. This is where the decoding of the Bird Dog Studios shined," explained Jay. "I was able to take in a computer feed of ESPN.com and send it out over NDI to a BirdDog for decoding."*

Workflow Diagram

For more information on B Live - https://www.blive.nyc/

For more information on Studio NDI - https://www.bird-dog.tv/studio-overview