

CameraSlicer Software & Hardware Scenarios

The goal of this document is to present the serious Broadcaster / Webcaster with various scenarios for high quality streaming video production. Your ability to use or implement these strategies may depend on your technical skill and computer literacy - we'll start with basic improvements from the laptop webcam and move into more sophisticated environments. In many cases you'll find that more money does not necessarily equate to better production, some of these rely on the inventiveness of the operator and their ability to interpret and translate workflows.

Ultimately, we are feeding pre-mixed video content into an encoder (upLynk CameraSlicer) for global distribution and monetization via Vuuzle TV.

BlackMagic Design ATEM Mini

The BlackMagic Design ATEM mini is your best choice for ingesting video into the upLynk CameraSlicer. Connected directly via USB C to your Mac - the CameraSlicer software "sees" the ATEM mini as a webcam for both video & audio input. Sample base level system below:



Additional Information:

- Power BMD ATEM mini & mixer before starting CameraSlicer.
- Make sure mixer is plugged directly into Mic 1 or Mic 2 and input is turned "ON".
- Up / Down arrows on ATEM control Mic volume levels.
- Read documentation on mixer for correct level settings - you may replace Mics shown with lavs / other.
- Read documentation on ATEM mini to understand all features of the switcher.
- Additional monitors for ATEM mini output may be required for playback to studio.
- CameraSlicer Video Source will appear as "UVC Camera Vendor ID (numbers)".
- CameraSlicer Audio Source will appear as "Blackmagic Design".
- CameraSlicer Video Input Settings "MJPEG Open DML (60 or 30)fps" (match fps with video source).

Software Control & Routing

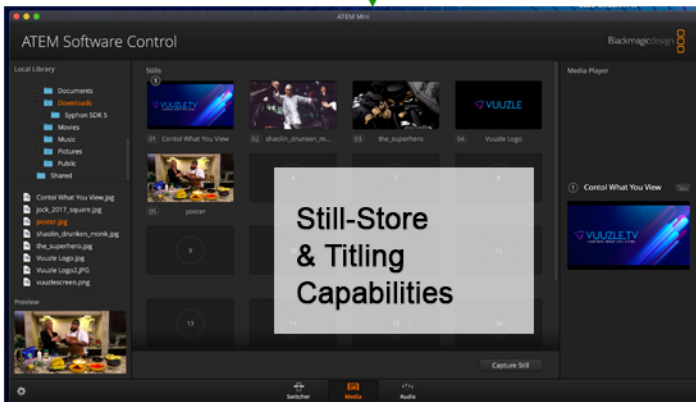
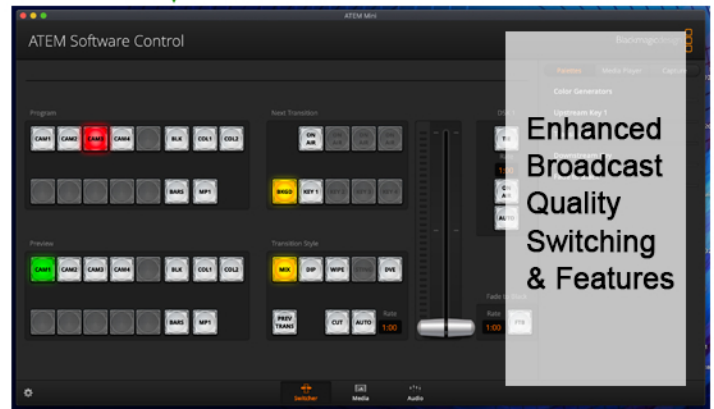
By combining software controls and routing, it is possible to create a complete studio experience for the viewer including: multiple camera angles, still & video playback, lower-thirds, greenscreen keying, multiple audio sources, remote cameras and remote interviews / guests.

**Hardwired (Cat 5 / 6)
to Internet via Router
WIFI WILL NOT WORK.**



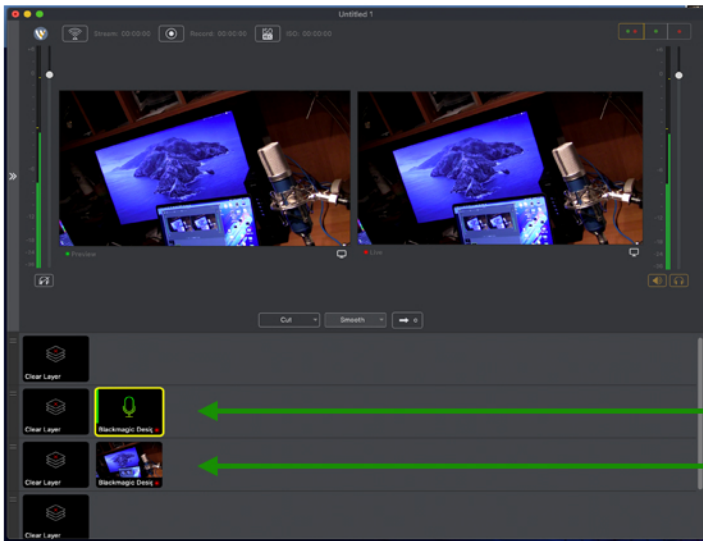
Route MacBook Pro & ATEM Mini via Small Internet Hub:

- Almost any small hub or WiFi router with standard ports will work.
- Make sure both devices are **HARD WIRED** to hub or router. **HARD WIRE** router or hub to internet source.
- Download and install **FREE** BlackMagic ATEM Switcher Software. Run "ATEM Software Control".
- If your hub is setup correctly, this software will link your laptop & ATEM switcher for increased control.

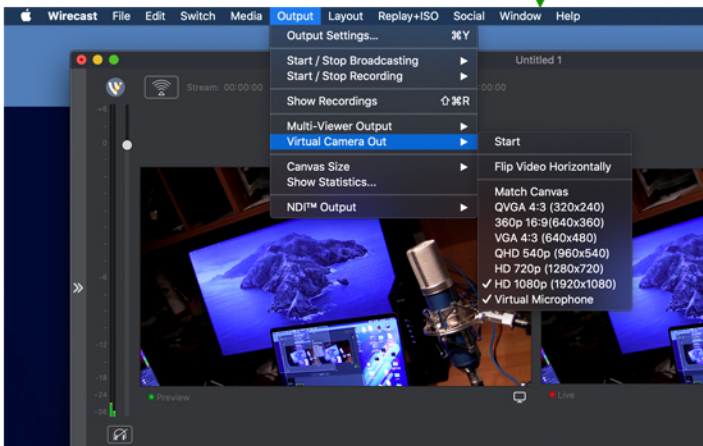


Internal Software Routing

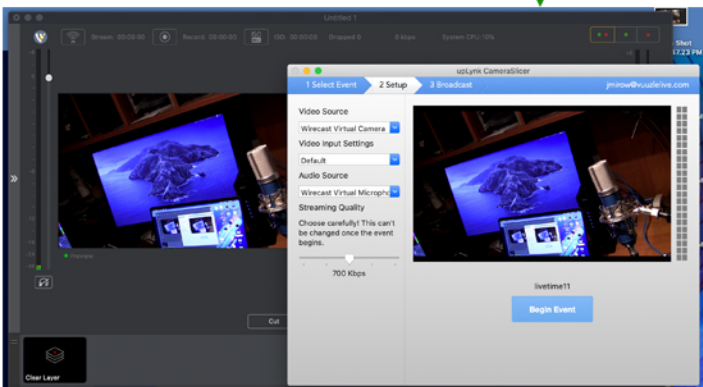
In order to deliver an enhanced production experience, the operator can join the functionality of three programs on the MacBook Pro internally. This is the operating diagram for Wirecast by Telestream using ATEM mini as an input source. ATEM mini is being controlled by ATEM switcher software. The final mixed output of Wirecast is being sent as a virtual camera & microphone feed to CameraSlicer for streaming.



ATEM mini video signal is read as source by Wirecast. ATEM mini audio signal can be placed on separate layer for additional audio control. These are brought into laptop, then Wirecast via USB C connection. Both ATEM mini & laptop are hard wired to same internet source.

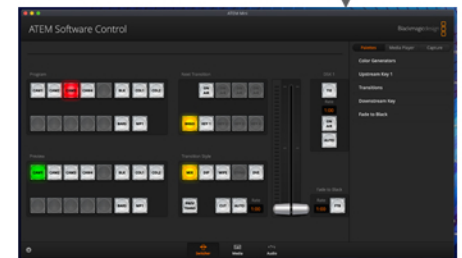


Once signal is acquired in Wirecast, go to Output / Virtual Camera Out, check video & virtual microphone then click "Start"

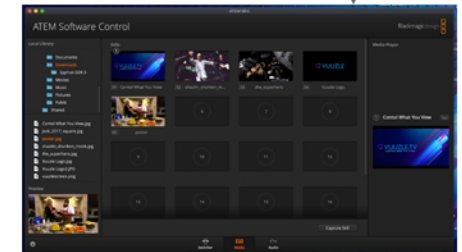


upLynk CameraSlicer will "see" Wirecast Virtual Camera & Wirecast Virtual Microphone as webcast source.

Internal ATEM switching



Internal ATEM still-store



Internal ATEM audio mixer



If you're familiar with the base-level input devices, then you may want to explore higher-end alternative devices such as professional HD-SDI output cameras, PTZ cameras, NDI devices, high-end video mixers & switchers, more involved audio input devices, etc. Below are some suggestions *BUT REMEMBER* - higher end input does not always result in high output. The default setting for most streaming systems is 720p 30fps - anything beyond that in terms of input will be lost on the end viewer.

Untested:
OBS
Livestream

**Hardwired (Cat 5 / 6)
to Internet via Router
WIFI WILL NOT WORK.**

