



# TVU REMOTE PRODUCTION



## QUALITY LIVE MULTI-CAMERA REMOTE PRODUCTION OVER THE PUBLIC INTERNET

- ▶ High-quality, low-latency, multi-channel transmission over standard Internet connections
- ▶ Utilizes existing studio equipment and staff for remote live productions
- ▶ Cost-effective, reliable, easy to deploy

Traditional video production requires on-location production trucks and large production crews, which are costly and complicated to manage. Remote video production makes it possible to replace these traditional methods with existing resources and produce from your own studio.

TVU Remote Production is a cost-effective way to deliver live multi-camera broadcast using only a standard Internet connection and existing staff, equipment, and control room infrastructure. With TVU Remote Production System and TVU Timelock, you can produce professional quality video from up to six channels from the comfort of your own facility, regardless of your network connection or whether your cameras are fixed or on the move.



### TVU Remote Production System (RPS)

TVU RPS allows for synchronized, frame-accurate, genlocked live multi-camera remote production over the public Internet using existing studio resources, a cost-effective alternative to traditional production.



#### Use Cases

- Sports** -- TVU RPS helps cover all the action of a major sporting event using just wired high-bandwidth Internet. It synchronizes footage coming from multiple locations and angles on the field and makes it possible to quickly and effectively deliver a broadcast to a potentially worldwide audience.
- News** -- When important stories happen away from the studio, TVU RPS plays an important role in making it possible to deliver that same professional, high-quality broadcast to its audience. If a story needs to be delivered both from the field and the studio, RPS can help; it is flexible and works to suit specific needs.
- Media Production** -- TVU RPS provides an alternate method of broadcast that involves a lot more savings and a lot less work. Companies who produce under tight budget constraints can rest assured that RPS will not only save costs, but that it will be efficient and reliable. Because of the affordability and versatility, users will continue to find new opportunities to employ TVU RPS, meaning more opportunities to generate revenue.

### TVU Timelock

TVU Timelock synchronizes multiple TVU transmissions at a set latency and allows production to happen at a studio in a separate location, improving and simplifying the production process for sportscasters, newscasters and other broadcast teams.

With Timelock, camera crews can roam throughout a production area to cover live events without being tethered. Additionally, Timelock is a reliable solution when there are no high-speed wired network connections available.

#### Key Features

- ▷ Synchronizes latency for up to six TVU Transmitters
- ▷ Works with existing TVU Transmitters and Servers
- ▷ Allows for mobility of cameras
- ▷ User-friendly controls

#### Use Cases

- Sports** -- In sports, things can take a turn at any given moment. With TVU Timelock, fans can stay in the know the entire time, watching the action unfold from various locations inside the venue without any interruption or chopiness.
- Events** -- From concerts to parades to fashion shows, many events are best captured at multiple angles to give viewers the full experience. TVU Timelock makes it possible for camera crews to move throughout the venue to capture the intensity and excitement of the event, so people watching on their screens can feel like they are a part of it.

#### Key Features

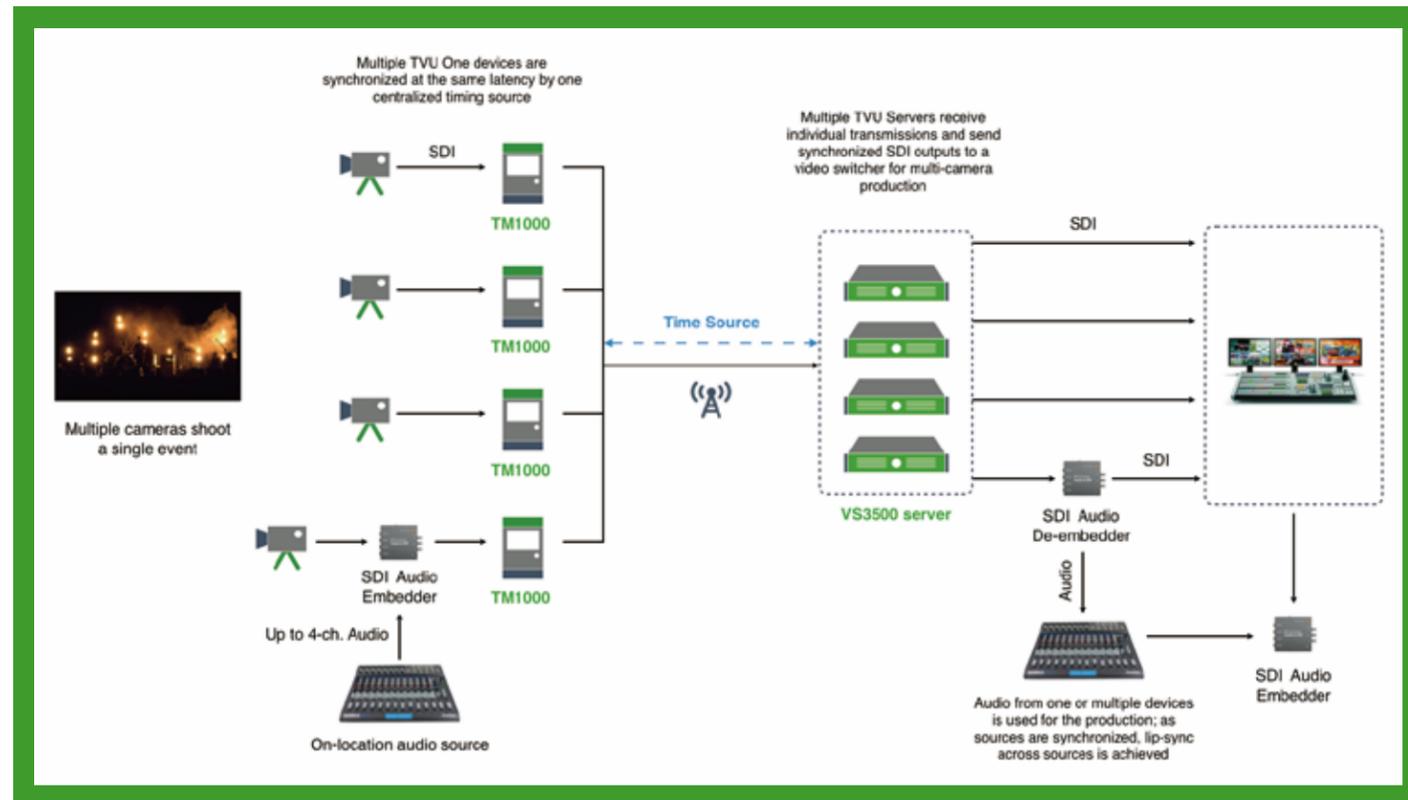
- ▷ Supports up to six fully synchronized multi-channel transmissions
- ▷ Dependable, fixed low-latency transmission over standard contested Internet connections
- ▷ Multiple encode behaviors to suit virtually any network environment
- ▷ Sends metadata and control from the studio to the field via VLAN Tunnel
- ▷ Can transmit directly to the cloud
- ▷ Supports up to two return feeds
- ▷ Easy-to-use browser interface

#### Workflow

TVU RPS consists of a transmitter and a receiver. The RPS transmitter encodes up to six synchronized SDI sources and transmits high-quality, low-latency IP video from the remote location to a studio-based TVU RPS receiver, which in turn decodes six accurately synchronized SDI outputs. RPS's user-friendly interface grants control over all aspects of transmission, including bit-rate and latency, and gives previews of all six channels.

TVU RPS also provides up to two low-latency return video feeds sent from the studio back out to the field. VLAN tunnels on RPS decoders enable communication between the studio and the field over a private network, so that it feels like everyone is in the same building. TVU's VOIP solution, TVU Voice, also works with RPS to make back-and-forth communication easier than ever.

With RPS, an encoder can transmit straight to the cloud, so you can use TVU Producer to immediately get started on production.



#### Workflow

Timelock runs on existing TVU One Transmitters and Servers. Multiple TVU One devices are synchronized from one centralized timing source, and Servers receive transmissions from their respective Transmitters and output synchronized SDI outputs to a video switcher for multi-camera production. Audio from one or more devices can be used for the overall production, and lip-sync across sources is achieved as they are synchronized.

Up to six transmissions can be synchronized via TVU's easy-to-use Command Center, which gives you the option to adjust delay and bit-rate to apply to each TVU Transmitter you have selected. Synchronization happens relatively quickly, and the interface will let you know exactly when.

## ▶ TVU RPS Technical Specifications\*

Model	VS3500
Form Factor	1RU Rack-Mount Chassis
OS	Linux
Encoder	Up to 6 channels of H.264, 4:2:0 CBR encoding, 100k-10Mb/s
Video Resolutions	SD/HD - SDI (1080-50i/59.94i, 720-50p/59.94p, NTSC/PAL)
Video Inputs	Ports 1-6 utilized for primary transmission and Ports 7-8 used for return video (Note: If return video is used, it reduces the number of primary channels that can be used)
Genlock Input (Decoder)	Ref: 1.0/2.3 DIN, BB or Tri level (BNC adapter included)
Network Interface	1 independent 10/100/1000 BASE-T RJ45 Ethernet interfaces, 2 x USB 2.0, 2USB 3.0
Display	HDMI and VGA
USB Ports	2x USB 3.0; 2x USB 2.0
Ethernet	4x 1GigE (WAN and VLAN tunnel)
Power Source	100-240V ~/3.5A 47Hz-63Hz
Dimensions	16.92in (430mm)L x 10.39in (264mm)W x 1.77in (45mm)H
Weight	9.56lbs (4.34 kg)
Operating Temperatures	32F - 89.6F; 0C - 32C
Power Supply	Single



**TVU Networks®**

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