



Professional broadcast quality picture from a compact wireless video news gathering backpack

- Broadcast live in SD or HD over multiple wireless 3G/4G, WiFi, WiMax and BGAN connections
- Capture news from locations your ENG/SNG/OB van can't reach
- Offers low sub-second latency
- Fast start up



“ The TVUPack lets us broadcast from isolated locations around the country that we wouldn't normally be able to reach or afford with a live truck. With TVU's cellular redundancy and user friendly design, we were able to cover the record breaking snow storms in Connecticut unlike anyone else. We were able to stream live mobile video for hours at a time both on-air and on the Web. The TVU system never let me down. It's extremely cost effective and worked like a champ! ”- Keith Porter, Chief Photographer/ News Operations Manager - WTNH News 8 & WCTX MyTV9, USA

TVUPack™ solves a common challenge that news broadcasters often face in covering live breaking news from locations that are difficult or costly to access using traditional methods. Our portable lightweight video capture and transmission backpack allows you to respond more quickly to broadcast live news as it happens.

Using proprietary software technology developed specifically by engineers at TVU Networks called Inverse StatMux, TVUPack dynamically monitors transmission signal strength to ensure the best broadcast picture quality is delivered live to your viewers. Inverse StatMux is changing the game for TVUPack customers worldwide.

Broadcast from Anywhere

TVUPack is perfect for capturing live news and events in crowded venues or from a moving vehicle. TVUPack is a fully self-contained content capture and broadcast solution with its own on-board power and data transmission capability. With a lightweight, portable design, TVUPack is ready to go whenever and wherever you are.

Deliver Breaking News As It Happens

Stay one step ahead with TVUPack and get to the news first. Setup

is simple – plug in your camera and turn the unit on. TVUPack powers up in less than one minute and works right out of the box without additional configuration. You can broadcast live in real-time or store and forward the captured video.

Experience Reliable Video Quality

TVUPack uses multiple wireless 3G/4G, WiFi, WiMax and BGAN data connections to deliver broadcast quality signals up to 1080i HD. Using proprietary software technology, TVUPack is the only portable pack that minimizes latency by automatically monitoring available bandwidth and utilizing the best available signal. By actively managing both bandwidth and latency, TVUPack ensures that you are able to broadcast the highest quality live picture.

Save Money

Acquisition costs for TVUPack are lower than competing solutions, and only a fraction of a fully-equipped SNG van. Operating costs are low due to simple, easy-to-operate zero-configuration design. Finally, transmission over wireless Internet lessens your dependence on expensive satellite links.

Features You Want



> Mobility and Lightweight

TVUPack uses multiple wireless connections to transmit, and is backed up by solid-state storage that captures high quality footage when no data connection is available. The TVUPack is lightweight and can be worn as a backpack or hand carried. Constructed with rugged materials, TVUPack can stand up to rigorous use, enabling your field team to go anywhere and get breaking news fast.

> Designed for Ease of Use

Operating TVUPack is simple: plug in the camera (SDI, Firewire, or optional composite connection) and turn on the power. That's it – no complicated on-site setup and configuration for your field news crews to deal with.

> IFB (Interruptible Feedback)

TVUPack is IFB ready. A news operations center can speak directly to a headphone equipped cameraman or talent in the field and avoid the disruption of using a cell phone.

> Dual Battery, Hot Swap

TVUPack uses a dual-battery system with an industry standard Gold Mount design. Batteries can be hot-swapped while the unit is operating. You can operate the unit with one battery while the other is charging. This effectively provides you with unlimited running time.

> On-Board Storage

Video is auto-recorded in TVUPack and can be remote-browsed, marked and retrieved from the TVUPack Receiving Terminal in the broadcast studio. This substantially speeds up evaluation and retrieval of field footage. If all the network connections are lost, the footage will be automatically stored for later retrieval.

> Wireless Monitoring

TVUPack provides an option for wireless monitoring and control. This enables a camera operator to monitor the transmission, line quality, battery level and other pack statuses using a wireless smart device.



Technology You Need

Inverse StatMux Technology

To address the limited bandwidth and instability of the 3G/4G environment, TVU engineers developed Inverse StatMux technology, which dynamically segments a live video signal and transmits the segments through multiple independent 3G/4G connections. Its intelligent control system monitors the bandwidth and performance of each connection in real-time to ensure that each 3G/4G connection is fully utilized. This technology ensures that the TVUPack can deliver a stable professional broadcast-quality live signal over potentially unstable 3G/4G environments.

Advanced Low-Delay Video Encoding Engine

To ensure that the best picture quality is delivered in a 3G/4G environment, the TVUPack comes with a powerful encoding engine packaged in a compact size. TVU's proprietary encoding engine is capable of delivering a vivid broadcast-quality signal with very low latency, even with limited bandwidth.

Variable Bit-rate Encoding Technology

Instead of requiring that an operator manually adjust to the appropriate bandwidth under changing conditions, TVU's Variable Bit-rate (VBR) encoding technology automatically adjusts the bit-rate according to the total available bandwidth. With VBR, the TVUPack will always use the full available bandwidth and deliver the best possible picture.

Forward Error Correction

TVUPack uses a powerful patent-pending Forward Error Correction (FEC) algorithm to auto-correct packet errors inherent in wireless Internet connections. This ensures a stable video signal, even in environments with constantly changing bandwidth such as broadcasting live from a fast-moving vehicle.

Wireless Hotspot

TVUPack not only delivers a live HD signal back to your broadcast facility, it's also your gateway to the Internet. With the optional Hotspot feature, your laptop computer can access the Internet wirelessly. The Hotspot allows you to access your footage, enabling you to edit on a laptop and send the finished story back to the broadcast facility through the TVUPack.

Security

Traffic between the TVUPack and the TVUPack Receiving Terminal is transmitted securely and encrypted using a proprietary TVU protocol. Each TVUPack will only communicate with a specific TVUPack Receiving Terminal. There is no way to receive the video signal without authorization.



TVUPack Specifications

	TM2100	TM8100
Video/Audio Input	FireWire - 6-pin IEEE-1394	SD/HD-SDI w/ embedded audio (BNC), HDMI w/ embedded audio, Component (3x BNC), Composite (BNC) and Analog Audio (2x 1/4" jacks), IFB (1/4" Jack - Optional)
Input Format	DV25, NTSC & PAL	SDI/HDMI/Component (1080-50i/59.94i, 720-50p/59.94p, NTSC/PAL), Composite (NTSC/PAL)
Storage	160GB SSD (12 hours continuous full quality recording)	160GB SSD (12 hours continuous full quality recording)
Data I/O Interface	Up to 8 USB data card interfaces (2.5G/3G/4G/WiMax/ Plus dedicated port for Hotspot & WiFi.	Up to 8 USB data card interfaces (2.5G/3G/4G/WiMax/ Plus dedicated port for Hotspot & WiFi.
Ethernet	One Gigabit Ethernet - RJ45. Additional Ethernet can be added via USB-.Ethernet dongle	One Gigabit Ethernet - RJ45. Additional Ethernet can be added via USB-.Ethernet dongle
Max Continuous Power	120W	120W
AC Power Adapter	100-240V AC	100-240V AC
DC Power Input Range	14.8-19V DC	14.8-19V DC
Battery System	Hot swappable dual battery packs with industry standard Gold Mounts (optional V-Mount configuration)	Hot swappable dual battery packs with industry standard Gold Mounts (optional V-Mount configuration)
External Battery	14.8V, Minimum 100Wh, Gold Mount or optional V-Mount configuration	14.8V, Minimum 100Wh, Gold Mount or optional V-Mount configuration
Battery Run Time	2.4 hours dual battery packs., up to 4 hours on extended	2.4 hours dual battery packs., up to 4 hours on extended
Weight	5kg (11lbs) with aluminum housing	5kg (11lbs) with aluminum housing
Dimensions (Pack)	~ 35x20x48cm (14"x8"x19") - LxWxH	~ 35x20x48cm (14"x8"x19") - LxWxH
Operating Temp	0 - 30°C (32 - 86°F)	0 - 30°C (32 - 86°F)

TVUPack Receiving Terminal Specifications

	TR3100HD/3101HD	TR3100SD/3101HD
Electrical	Line Voltage: 100-240V AC, 50/60Hz 5.2 - 2.6A	Line Voltage: 100-240V AC, 50/60Hz 5.2 - 2.6A
Configuration	1RU, standard 19" rack mount (inc. slide rails, for round or square-hole mount)	1RU, standard 19" rack mount (inc. slide rails, for round or square-hole mount)
Audio / Video Output	BNC - SD/HD*-SDI (1080-50i/59.94i, 720-50p/59.94p, NTSC/PAL) w/ embedded audio (Optional analog output)	BNC - SD/HD*-SDI (1080-50i/59.94i, 720-50p/59.94p, NTSC/PAL) w/ embedded audio (Optional analog output)
Genlock	BNC - Tri-Level or BB	BNC - Tri-Level or BB
Display	DVI, VGA or HDMI	DVI, VGA or HDMI
IFB Input (optional)	External USB audio input with level control (mic/line), ¼" & XLR	External USB audio input with level control (mic/line), ¼" & XLR
Network I/O	2 independent 10/100/1000 BASE-T RJ45 Ethernet Interfaces, 2 x USB2.0,	2 independent 10/100/1000 BASE-T RJ45 Ethernet Interfaces, 2 x USB2.0,
Dimensions	~44x63x4.5cm (17.6"x25"x1.73") LxWxH	~44x63x4.5cm (17.6"x25"x1.73") LxWxH
Operating Environment	10 - 35°C (50 - 95°F), Humidity 20%	10 - 35°C (50 - 95°F), Humidity 20%

* HD output on TR3100HD and TR3101HD models only * Specifications are subject to change without notice

The TVUPack Receiving Terminal is a compact 1U rack-mount server that receives broadcast signals from up to ten TVUPacks. It can store this content in its on-board storage, and output it over SDI audio/video connections. The Receiving Terminal was built with the professional broadcaster in mind. Its intuitive user interface provides complete control over the TVUPack, freeing the cameraman in the field from worries about configuration. With multiple Receiving Terminals, each one can act as a hot standby for all the others. With the TVUPack Receiving Terminal, the newsroom will always have a reliable source for instant news coverage.



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TVU networks

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