



## Sharp, glitch-free picture quality from a compact video news gathering backpack



- Broadcast live in SD or HD over 3G/4G, Wi-Fi, and portable satellite
- Capture news from locations your ENG/SNG/OB van can't reach
- Store video and forward it for later broadcast
- Take advantage of fast system start up

*“ The TVUPack has provide us live broadcasts from isolated locations around the Country that we wouldn't normally be able to reach or afford with a live truck. Here at News 8 we are in a unique situation; we operate an exclusively designed vehicle that uses a switching router and multiple live cameras. 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 for on-air and to 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, light weight video and transmission backpack allows you to respond more quickly and capture 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 TVU network 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. 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 supports all data connections including 3G, 4G, Wi-Fi and BGAN to deliver broadcast quality signals up to 1080i HD. By 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 Light Weight

TVUPack uses wireless infrastructure, backed up by solid-state storage that captures high quality footage when no data connection is available. Light weight and constructed of rugged materials, TVUPack enables 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 cameraman to monitor the transmission, line quality, battery status etc. using an iPod Touch.

# 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 broadcast-quality live signal in a 3G/4G environment.

## 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 very powerful encoding engine, packaged in a compact size. It's 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 VBR 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 <

The TVUPack uses a patent-pending FEC algorithm to ensure that most of the packet errors in wireless Internet connections are corrected. This ensures a stable video signal, even when 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; you can edit on your laptop, and send the finished story back to your broadcast facility through TVUPack.

## Security <

Each TVUPack will only communicate with your specific TVUPack Receiving Terminal. There is no way to receive the video signal without authorization. Traffic between the TVUPack and the TVUPack Receiving Terminal is encrypted.



# TVUPack Specifications

	TM2010/TM2100	TM8100
Video/Audio Input	Firewire	SDI, HDMI, Analog
Format	NTSC, PAL, 720P, 1080i	NTSC, PAL, 720P, 1080i
Storage	up to 12 hours continuous full quality recording	up to 12 hours continuous full quality recording
I/O Connection	up to 10 USB-based wireless data cards	up to 10 USB-based wireless data cards
Network	1 Gigabit RJ-45 connector	1 Gigabit RJ-45 connector
Max Continuous Power	120W	120W
AC Power	100-240V	100-240V
Battery	hot-swappable dual battery packs with industry-standard Gold Mounts	hot-swappable dual battery packs with industry-standard Gold Mounts
Usage 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	5 kg with aluminum housing	5 kg with aluminum housing

# TVUPack Receiving Terminal Specifications

Electrical Requirement	Line voltage: universal input (100V to 240V AC) Frequency: 50Hz to 60Hz, single phase	Dimensions	17.6 x 30 x 1.73 inches
Rack Support	Mounting in standard 19-inch rack	Source Output	Video: SDI Audio: SDI- embedded Analog
Operating Environment	Operating temperature: 10° C to 35° C, Humidity 20% Storage temperature: -40° C to 65° C, Humidity 5%	I/O Connections	2 independent 10/100/1000 BASE-T RJ-45 Ethernet interfaces HDMI (outgoing)
Genlock	Other configurations available	Format	NTSC, PAL, 720p, 1080i

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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