

ENG Backhaul



C A M E R A - T O P

HD VIDEO ENCODER



Using the Internet for News Gathering Backhaul

Finding a cost effective solution for backhauling news feeds from the field has always been a challenge for news stations. News organizations traditionally had to rely on expensive satellite or microwave equipped ENG vans. More recently, broadcast backpacks that aggregate the video stream over multiple cellular data networks have become a popular alternative.

With the release of Teradek's Cube video encoder, news organizations finally have an elegant solution for streaming HD video back to the station over a single IP network connection. Cube is the world's first camera-top, H.264 HD video encoder. Cube mounts easily to any camera using a 1/4-20 screw or hotshoe mount and streams HD video up to 1080p over IP. The unit is tiny (about the size of a deck of cards) and uses only 3 watts of 9-24V DC, so it doesn't impede in the mobility of even the smallest camera rigs. The unit features both wired Ethernet outputs and WiFi, and buyers can choose between HD-SDI or HDMI inputs.

The encoder uses H.264 High Profile (Level 4.1) video compression, which is the most advanced compression

algorithm available today, and it features a built-in scaler to convert from 1080 to 720, 480, or 240 resolutions. Users can choose a resolution and target bit rate based on the availability of IP bandwidth. Typical bit rates for HD are between 2-4Mbps, and SD bit rates are typically sub-1Mbps.

Getting video onto and off-of the public Internet presents challenges, but with Cube the solution is simple. The unit features RTSP Announce to easily broadcast from behind firewalls. On the receiving end, the station has several choices. One option is to simply host a computer with a public IP address (which most stations likely already have installed) and direct the video stream to it. Another option is to use Cube's native Livestream integration. Users with a Livestream account can simply logon to the unit's web user interface and enter a user name and password to begin broadcasting via their Livestream channel. Livestream users can choose between public webcasting, or making the channel private, so that the in-the-field news can stream privately and discreetly back to the station for broadcast distribution.





livesream



Cube eliminates the need for an ENG van by using the Internet for ENG backhaul or broadcast. Users can engineer their own backhaul over IP solution or use Livestream.com's

Encoder

Decoder

to Station



Enjoy wireless freedom by streaming from the camera to the ENG van using an



The wide implementation of 4G cellular data networks in 2011 also means that journalists can bring along their own broadband connection (for example, Verizon's 4G LTE uplink). The ENG van was reduced to a backpack, now it's reduced again to the size of two decks of cards, and the data rates are high enough to provide Blu-ray quality video over a single IP data connection.

The increase in mobility as compared to a traditional ENG van means that, for the cost of a lift ticket, newscasters can report live from the summit of the local ski resort rather than the parking lot. Sportscasters have successfully tested a direct to Livestream connection from a large radio controlled helicopter, and Cube is being used for broadcasting aerial footage of professional surfing and automobile races during the 2011 season.

The low cost of the unit combined with the low cost of IP video over WiFi or 4G provides a significant cost savings over the ENG van using microwave or satellite. Compared to broadcasting backpacks, Cube is one fifteenth the cost to acquire and uses one fifth of the bandwidth. News organizations employing IP video solutions have a competitive advantage in the market, with greater mobility, lower cost, and the ability to put significantly more feet on the street on the same budget, or turn the right number of feet on the street into a profit. With pervasive WiFi coverage and 4G availability, IP is the future of backhaul.

Encoders:

Cube-100: HD-SDI In, Ethernet out
Cube-120: HD-SDI In, Ethernet + WiFi out
 Cube-130: HD-SDI In, Ethernet out + PoE
 Cube-200: HDMI In, Ethernet out
Cube-220: HDMI In, Ethernet + WiFi out
 Cube-230: HDMI In, Ethernet out + PoE

Decoders:

Cube-300: Ethernet in, HD-SDI out
Cube-320: Ethernet + WiFi in, HD-SDI out
 Cube-330: Ethernet in + PoE, HD-SDI out
 Cube-400: Ethernet in, HDMI out
Cube-420: Ethernet + WiFi in, HDMI out
 Cube-430: Ethernet in + PoE, HDMI out

Teradek.com/cube is updated regularly and features additional product information, screencast tutorials, technology primers, ordering instructions, and promotional videos.

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