Reprint

review

By Tim Siglin

The first review of Digital Rapids TouchStream, done for *Streaming Media* magazine late last year (www.streamingmedia.com/Articles/Editorial/Featured-Articles/Review-Digital-Rapids-TouchStream-65701.aspx), was based on an extended walk-through of a prototype during the National Association of Broadcasters show in Las Vegas in April 2009.

A year and a half later, I had a chance to sit down with the newer, beefier TouchStream at the Streaming Media Europe event in London, and what I saw was a natural progression of the streaming box in several different areas.

Before launching into the improvements of this touchscreen-enabled live encoding box, let's talk first about the unit itself.

WHAT'S IN (AND ON) THE BOX?

About the size of a shoe-box, the TouchStream's entire front surface is covered with a blue neon-ringed touchscreen that swivels up for easy viewing at either eye level or from a few feet above—ideal for use in both flypack and tabletop configurations.

The back of the unit has two USB connectors, which, on the newest 1.2 software version of the TouchStream application, allows a USB Wi-Fi access card to leverage the embedded Windows XP network stack.

The back of the unit also contains an Ethernet connection and a multipin connector attached to the internal video card. The card is capable of multiple configuration types, from composite to S-video to component, with balanced and unbalanced audio, plus an optional SDI connection.

A blue ring glows in the bottom-right corner of a solid black screen, and once you touch it, the whole unit springs to life.

WHAT'S NEW IN 1.2

Shiny, bright, object interest aside, the Digital Rapids TouchStream takes into account many of the production issues that a portable encoding solution has to contend with. As I mentioned in my initial review, TouchStream has been one of the few machines I've reviewed over the years that lived up to the hype of being a truly self-contained system.

"A portion of the TouchStream challenge was to make this an easy-to-use interface, so we showed it to potential customers in markets that we couldn't address with our initial products," says Mike Nann, Digital Rapids' Director of Marketing. "We didn't want to lose the comprehensive tweaking power that set our products apart, so the goal was flexibility and ease of use, simultaneously."

That tweaking has expanded in software version 1.2 for a variety of options.

As I mentioned, the USB connections are capable of providing Wi-Fi connectivity. Getting to a wireless network is a bit tricky, and a keyboard is required, which eliminates the benefit of not needing a keyboard with the TouchStream. Wireless networks with dynamic provisioning—such as the hotel we tested in—may cause potential issues; our system continued to show a "disconnected"

Digital Rapids TouchStream 1.2, front view, showing the neon-ringed touchscreen

Digital Rapids TouchStream 1.2, rear view with connectivity options

status even after it obtained an IP address and was successfully streaming.

Another benefit of the dual USB connectors is the ability to use a USB flash drive as external storage. On the test version, we used the external USB storage to caching segment for the optional streaming to iOS devices (iPhones and iPads). Company representatives say the

2–10 seconds each so that viewers on a variety of devices and network connections can view the video at the best possible bitrate for their unique connection.

For Smooth Streaming, a separate publishing point is required, which requires a separate laptop, desktop, or server. A publishing point is a service contained within Internet

consist of a single or multiple streams, including the codec, player, and transport options. It also defines which inputs are used for audio and video connections.

TouchStream supports Flash RTMP streaming, as well as RTSP and HTTP delivery, although the publishing point is required for the latter. Codecs supported include several standards, such as MPEG-2 Transport Stream, VC-1, H.264, and Flash Video 8 (On2's VP6). Digital Rapids says that WebM (On2's VP8) support is on the road map.

To trigger an encode from the touchscreen interface, a user chooses one of

the screen will display at the bottom "duration based stop at nnnn, current time is nnnn" until the duration is reached. Quite clever, really.

If an end time is chosen, the time is displayed at the bottom of the screen, which is handy for referring to when choosing the stop time. Remember that the TouchStream uses a 24-hour clock.

In addition, a scheduled start allows for the setting of a start time and an end time, which is helpful for starting up an event recording/stream without human intervention. At any time after it has begun, however,

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shipping option of iOS segmenting/streaming requires a second internal hard drive, but it's nice to see that a USB flash drive can be used in a pinch.

SMOOTH STREAMING

Speaking of segmenting, one strength of TouchStream 1.2 is the ability to do both Smooth Streaming and Microsoft's adaptive bitrate (ABR) streaming, as well as the iOS streaming.

ABR allows multiple bitrates to be encoded simultaneously and then breaks down each bitrate into chunks or segments of

Information Services (IIS) Media Services, which is currently in version 4.0 beta, but it should be available at the time of publication.

IIS Media Services 4 is a free set of services that sit atop Microsoft Windows Server 2008, but it can also be used on Windows 7 Professional, Windows Vista, and even Windows XP.

ENCODING FEATURES AND SETUP

When it comes to encoding, a few things need to be set up beforehand: A profile needs to specify whether the live encoding will

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three setting options: fully manual, duration (length of time from a manual start), and an end-time stop (ending at a particular time).

On a duration-based stop, once it's set up and the manual "start" button is pressed,

a manual stop can be used to override the encoding process.

Once an encode has started, a small green "wifi" bar in the lower right corner of the screen pulses to show a stream (or local encode, if an archive is being recorded) is occurring.

TouchStream also has the ability to pause during a live stream. Under the hood, this is designed to maintain the network connection so viewers on remote devices, laptops, or desktops aren't kicked off the stream. During a pause, no video or audio is being sent to the streaming server, and the archive pauses at the same time as the livestream.
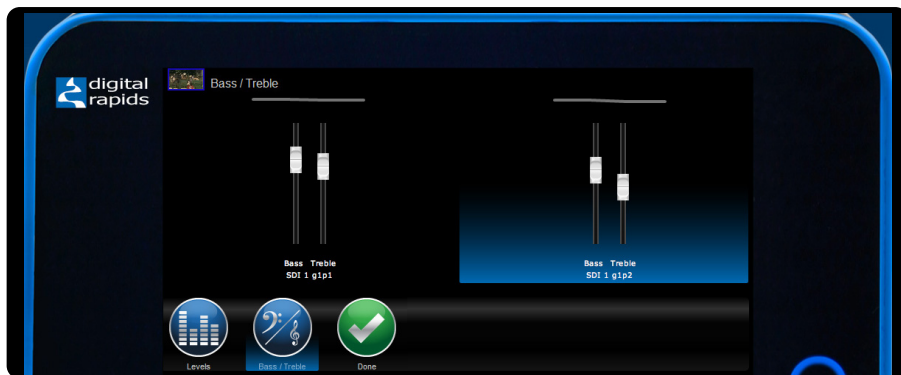
Once the unit is switched out of pause and back into record, video and audio begin transmitting to the server, and the archive

Choosing encoding options in the touchscreen interface

Triggering an encode

Setting bass and treble in the TouchStream touchscreen

file begins recording again. The end result is a seamless cut from the time at which the pause was engaged until the time the pause was disengaged.

On some of Digital Rapids' higher-end encoders VITC timecode is an option, as is

One final way to start or stop a video encoding session is through the use of GPI triggers. Like the manual start from the touchscreen, a GPI trigger can be set for a manual start with a manual stop or a duration or end time stop. Using a GPI trigger via the included

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discontiguous timecode recording. But TouchStream uses only time of day (think of it as poor man's free run). The use of an NTP server connection (used to synchronize clocks on multiple computers) can be used to create a coordinated time stamp on each encoder, which is key for ABR encoding such as Smooth Streaming.

RS-422 port can be as simple as a push button or as complex as a timing or master broadcast signal, and Digital Rapids is building in APIs to allow for network-based start and stop times to be sent via Ethernet to the TouchStream.

If you arm a trigger, there's no easy way to disarm it. For the record, short of a dummy start and then a quick stop, the

proper way is to follow multiple steps: Go into Setup, choose Trigger again, and then choose Disarm.

SETTING AUDIO LEVELS AND PASSWORD PROTECTION

There are two other areas to note: audio and password protection.

Audio levels can be set two ways. The first way is to go into the audio settings and change the overall levels. Levels are set individually. This works well for bass/treble roll-off or accentuation but creates a bit of a potential issue because there's no way to lock the left and right channels together (or invoke a master slider) on the overall levels. The other way to set audio levels is to use the master slider on the encoding page during an event, but that doesn't allow for fine-tuning of either the left or right channels. Digital Rapids should consider the ability to lock and unlock the left-right channels from each other on both the setup page and the encoding screen.

One other thought on audio: On the Input Settings page, there is a small confidence monitor that shows which video source is playing on which selected profile, but there is no audio levels monitor to show whether audio is also present. It would be helpful to have an audio monitor as well, to keep the user from having to switch back and forth between the Input Settings page and the main encoding screen just to verify the presence of an audio signal.

On the password protection front, Digital Rapids has added a way to lock out various functions, hiding them from being viewed

on the interface. In other words, the interface could be restricted to as little as the start-stop button, and the unit can also be automatically set to start on power-up, eliminating the need for any access to the interface. A password can be added to allow the full interface to then be exposed to administrators. In other words, TouchStream can be set to executive-proof mode.

ALL IN ALL

All in all, I'm pleased with the progress of TouchStream. Version 1.2 of the software continues to push the functionality forward. While there are a few things that require a keyboard, overall TouchStream is still head and shoulders above other portable encoding devices when it comes to "power-up and encode" in just a few simple steps.

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