DTS-HD Master Audio Suite

Not ones to fall behind the competition, DTS is now offering HD-capable audio encoding and editing tools. NEIL WILKES gets high on the definition with a suite that will be invaluable to anyone producing audio content for any of the new HD formats.

DTS HAS BEEN associated with high-quality multichannel audio since it burst onto the cinema scene in 1992 with Spielberg's Jurassic Park. Since then, the company has entered the world of music with DTS-CD and also that of DVD-Audio via its DTS Entertainments label. This, the latest in the line of software encoders from DTS, adds support for the new HD formats, as well as a Stream Player and some useful tools for editing and quality control.
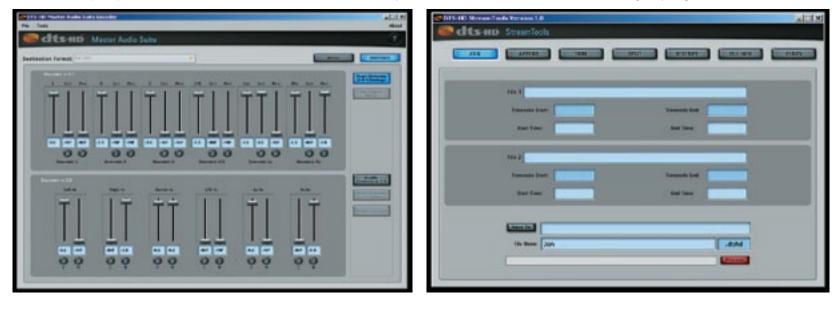
The £1031 (+VAT) DTS-HD Master Audio Suite is actually three tools in one. It consists of the main DTS-HD encoder, where you will spend most of your time, DTS-HD StreamTools utilities for editing the streams, and a DTS-HD StreamPlayer Pro Tools plug-in. The suite is designed to enable you to create DTS-HD, DTS Digital Surround and DTS-HD LBR-encoded files using the Encoder module for Blu Ray, HD-DVD and DVD media. There's currently no DTS-CD variant; it is to be added in a future update, along with the standalone StreamPlayer.

Installation is very straightforward under Windows XP, requiring the Java Runtime 1.5 environment to be set up before the main installation. After this the installer takes over, setting up the Pace iLok drivers as well. Following a quick reboot, you plug in the special iLok key, wait for the drivers to initialise it, and then you're good to go. The installer adds two icons to your desktop, one for the Encoder module and another for the stream tools.

On launching the main encoder module, you will immediately notice the layout is designed for a 'top to bottom, left to right' workflow, and is accompanied by plenty of visual aids, making it very straightforward to get up and running, whatever media type you are encoding for. I particularly welcomed the addition of the batch encode function in this revision; this was noticeably absent in the 1.0 release and is proof of DTS's commitment to updating the suite. The encoding process itself also seems to have been refined. With a DVD media setting and a 24-bit, 96kHz 5.1 encode, the resulting files are of audibly better quality when compared to those produced by DTS-PSE, the predecessor to this suite; the highs are much more detailed, and there is generally more of an 'open' feel to the sound.

It is in the creation of streams for the new high-definition formats that this encoder really steps up to the mark, especially given that DTS has managed to get 'mandatory' status for both Blu Ray and HD-DVD. The graphical elements of the module are of real assistance here, as every choice you make automatically presents not only the relevant options for the stream type, but also the highest possible quality by default. For example, selecting HD-DVD means that the stream type defaults to DTS-HD Master Audio (the fully lossless implementation), and the core stream that accompanies it will be set to the highest quality at the same time.

DTS has built its system on a 24-bit, 48kHz core stream, with extensions that contain additional channel information and/or the extended frequency response, depending on the stream type — so consumers will always get the highest-quality audio output their systems are capable of delivering without needing to set anything up! By way of example, imagine using HD-DVD media and a DTS-HD Master Audio stream with a channel count of 7.1 and a sampling rate of 96kHz. The encoder will place the 24-bit, 48kHz mono-to-5.1 core in a constant bit rate stream of 192 to 1509kbps (in a 5.1 configuration, the available bit rates are from 768 to 1509kbps), and add the additional frequency response, the additional channels

and the increased resolution in the extensions to the core stream. So no matter what the destination media or stream type, all current and legacy DTS decoders will be able to decode at least the core stream, and you only need to encode one stream for all the possible options. As long as sufficient care is taken during the encode process, this single stream will play back on all DTS-enabled players or amplifiers.

It is hard to explain the workflow benefits to this approach without actually creating a stream. In contrast, the Dolby Media Producer creates two separate streams to ensure legacy playback: a Dolby Digital and a Dolby True HD stream. With the DTS-HD system, you only have the single stream to sync up and cater for, which makes the authoring a lot simpler, and because the module automatically assigns the highest quality options by default every step of the way, it's easy to use. You also have the ability to create custom downmix coefficients. A 7.1 stream can contain metadata to downmix to 5.1, 2.0 or both at the same time, and yet again, only those options that actually make sense for the stream type are selectable.

The DTS-HD StreamTools module is one of those things you never knew you needed until you use it. It's a collection comprising join, append, trim, split, re-stripe, file info and verification tools, all wrapped up in a single module. The user guide erroneously states that they can be accessed from a non-existent stream tools menu item, but they may be independently launched from the icon on the desktop; they are then completely independent of the tools option in the main encoder module, which runs a peak bit rate analysis on the encoded stream only. All except the file info and verify tools may alter either the selected stream or create an entirely new stream based on the selections made.

The Join tool enables users to join DTS-HD encoded streams in situations where audio-to-timecode sync is mandatory, and using it is straightforward. Handily, join operations can have overlapping audio regions for bit-exact edits. Given the amount of re-encoding that is done in the business, it is almost impossible to overstate the usefulness of this tool; it also allows previously encoded files to be joined into a single new file with its own reference timecode.
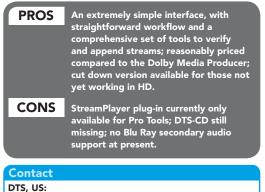
The Append tool is almost a lite version of the Join tool; it allows you to join together two streams with no regard for audio-to-timecode sync. However, using it results in the loss of all such sync, so handle with care. The Trim tool does exactly what it says, allowing you to adjust the start and end times of a stream by dropping frames outside the defined areas. The Split tool divides a single stream into two new ones, while the Re-stripe tool simply re-labels the start time and frame rate of the selected file, although as with the Append tool, all audio-to-timecode sync is lost in the process.

The File Info tool is wonderful for those occasions when you're working with files supplied or encoded by a third party and when the log files have been lost or are not included for whatever reason. It simply reads the header and extracts all information contained in the stream, thereby enabling lost information to be recovered. Finally, the Verify tool performs a full decode of the stream, stopping short of generating audio data. The process checks that all the components are in the proper place, and various parameters are displayed: header information, the core substream, extension substream, presentation data (channel count, bit depth, sample rate, and so on), stream size, navigation data, and any sync words that are relevant.

There are a few niggles. As yet, the StreamPlayer is a Pro Tools-only plug-in. This was no use to me on my Nuendo system, although a quick email to DTS resulted in a command-line decoder for verification to an actual set of audio files. There's also no Blu Ray Secondary Audio support, although these shortcomings are supposedly being addressed as you read this, and will apparently be made available in free-of-charge updates.

In summary, this suite will be an invaluable help to anyone producing audio content for any of the new HD formats given DTS mandatory status in both Blu Ray and HD-DVD. Thanks to its clever use of core and extension substreams, one stream should meet everybody's needs, and the Batch tool only makes life even easier. For those not working in HD formats there is the more affordable (£548.27 + VAT) SAS, or Surround Audio System, that uses a similar interface, but only enables DVD encoding. Naturally, there is an available upgrade path if your requirements should change later. ■

PROS An extremely simple interface, with straightforward workflow and a comprehensive set of tools to verify and append streams; reasonably priced compared to the Dolby Media Producer; cut down version available for those not yet working in HD.

CONS StreamPlayer plug-in currently only available for Pro Tools; DTS-CD still missing; no Blu Ray secondary audio support at present.

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