SPL

TRANSIENT DESIGNER 4

Shape unique sounds with this groundbreaking dynamics processor.

By Michael Cooper

The Transient Designer 4 is an analog dynamics processor like no other (except its 2-channel sibling, the Transient Designer 2). Unlike conventional dynamics processors that treat only signals that exceed or drop below a specified threshold, the Transient Designer 4 can shape sounds independent of their levels. Imagine increasing the attack transients of quiet instrumental passages, or abbreviating loud sounds that would normally bully a gate to stay open. Such tasks are child's play for the Transient Designer 4. While that might not seem earth-shattering at first blush, trust me, it is. The Transient Designer 4 (or the TD4, as I'll call it from here on) is one of the most revolutionary products I have ever worked with, and the sounds it creates are nothing short of astounding.

LET'S BE UP FRONT

The TD4's spartan front-panel layout points to the 1U rackmount unit's simple and intuitive operation but belies the power of this amazing processor. Four independent channels each feature single Attack and Sustain knobs, an On button, and a solitary signal-present LED (see **Fig. 1**).

To increase the level of an input signal's attack (transient) portion, simply turn the TD4's Attack knob clockwise from the noon position. To soften the attack, turn the Attack knob counterclockwise from the noon position. Similarly, turning the TD4's Sustain knob increases or decreases the sustained portion of the sound with, respectively, a clockwise or counterclockwise adjustment from its noon position.

When a channel's On button is depressed, a red status LED inset in the button lights to indicate that the channel's dynamics processing is active. When the On button is switched out, a hard-bypass relay circuit is engaged. (The bypass circuit also automatically engages when the unit loses power for any reason, preventing embarrassing silences in live-performance applications.) A channel's signal-present LED lights when its input signal's level exceeds –40 dBu. Unfortunately, neither input- and output-level controls nor clip indicators are provided. Those omissions would be more grievous if the unit were a digital device, which it isn't.

In addition to the aforementioned controls, a Link switch (also with an inset red status LED) is provided for each pair of channels. When the Link switch for channels 1 and 2, for example, is depressed, channel 1's controls (including active or bypassed status) govern settings for both channels. Depending on the status of its two link switches, the TD4 can process four mono, two stereo, or one stereo and two mono channels at the same time. The TD4 also provides a rocker-style power switch (with an inset lamp) on the unit's front panel.

BALANCING ACT

The TD4's rear panel provides a locking, balanced XLR connector for each channel's input and output (eight I/O connectors in total; see **Fig. 2**). Disconnecting my I/O cables (fitted with Switchcraft XLRs) from the review unit was difficult because the TD4's locking mechanisms would not readily release them. The TD4's nominal input levels are +6 dBu (a standard widely used in Europe, where SPL's headquarters are located). Pin 2 is hot for all I/O. If you plan to use the TD4 with unbalanced signals, you must shunt pin 1 to pin 3. The balanced, transformerless I/O stages include high-quality, laser-trimmed resistors with a tolerance of 0.01 percent, resulting in excellent common-mode (hum and noise) rejection.

I wish that the TD4 provided XLR/TRS combo jacks (which exist only for female connectors, anyway) and unbalanced ¼-inch jacks, but that undoubtedly would have increased its size and price considerably. SPL says that the unit handles a wide range of input levels, and it performed almost equally well when I fed it –10 dBV unbalanced signals and +4 dBu balanced audio. (You'll want to use balanced lines, however, for the quietest operation.) You can connect the TD4 to your mixer's inserts or in series with line-level (preferably +4 dBu nominal) outboard gear.

PUSHING THE ENVELOPE

As mentioned earlier, the TD4's dynamics processing works independent of signal levels. Consequently, you shouldn't expect to find any threshold or ratio functions, because there are none. The unit uses SPL's Differential Envelope Technology to process both low- and high-level signals without distinction.

The process produces two envelopes for each Attack and Sustain control (hence, four envelopes per channel). The first envelope, which is generated by an envelope follower, tracks the shape of the input signal's curve. The second envelope is a fixed curve that

FIG. 1: The Transient Designer 4 uses VCAs controlled by envelope generators to process dynamics independent of levels.

responds more slowly than the first envelope. The TD4 derives a difference signal from the two envelopes (subtracting the second envelope's amplitude values from those of the first) and uses it to vary the control voltage of a single THAT 2181-VCA (one VCA per channel). The VCA rides the channel's gain up or down during both the attack and sustain portions of the audio signal to the degree that you boost or attenuate their respective controls.

The TD4's attack and sustain circuits work in parallel, giving you independent control over the attack and sustain characteristics of each channel's processed audio. You can boost or attenuate a sound's attack portion as much as 15 dB, whereas you can adjust the sustain component over a range of 24 dB up or down. That's enough rope to hang yourself, so be sure to watch for overloaded mixer-insert returns or downstream gear and adjust your gain staging as needed. Drastic settings can sometimes cause unflattering pumping. Nonetheless, I'd much rather use a box that lets me get wild and crazy than one that constrains me to some engineering department's idea of safe sex.

The Transient Designer won't take the place of a compressor or limiter, as it cannot, for example, selectively reign in peaks; lowering the TD4's attack control lowers *all* peaks regardless of their level. Nor will the Transient Designer take the place of a gate for all applications, as it will not selectively weed out low-level signals below a certain threshold (as noted before, the TD4 has no Threshold control). Think of the TD4 as a 2-stage (attack and sustain) envelope generator for audio signals, with one caveat: because musical phrases have a finite duration, the Transient Designer can't *elongate* the sustain portion of a signal; it can only boost the level of the signal while it is still present. You can shorten the duration of audio signals, however, by dramatically lowering the TD4's sustain control.

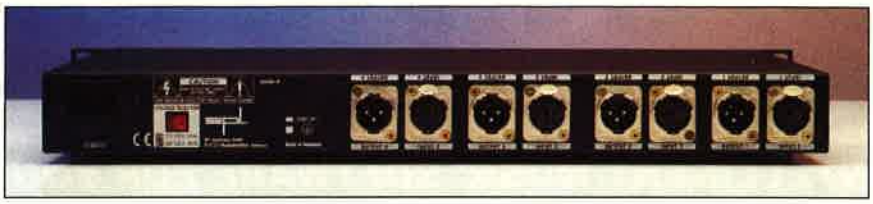

FIG. 2: With four XLR inputs, four XLR outputs, a ground-lift switch, and an IEC connector, the TD4's rear panel reflects its overall simplicity.

BEND ME, SHAPE ME

The TD4 is so easy to use, you'd have to be in a coma to get lost. Simply turn the Attack and Release knobs until you like what you hear—that's it! Throughout the course of several recording and mixdown sessions, the TD4 delivered unique and remarkable sounds that were impossible to achieve by any other means, and it did it in a fraction of the time I would have spent fruitlessly tweaking gates and compressors.

The TD4 consistently worked better than my high-end gates in reshaping drum sounds, with results that were more musical and predictable. Using the TD4 to shorten the decays of individual trap drums, I never heard any threshold-related chatter. I was also able to effectively mute downbeats to create driving rhythmic effects by shaping the envelopes of drum sounds.

What's more, I used less EQ on mixes in which I processed drum tracks with the TD4, as there was far less ringing of drums cluttering up the bass and low-mid spectrums. The beauty of the TD4 is that it corrects temporal problems in a way that often reduces and sometimes precludes the need to use static EQ and multiband compressors on individual tracks. That said, SPL does not recommend using the Transient Designer on entire mixes for mastering applications.

Feel free to use the TD4 in live performance, too. In Digital Performer, I compared the waveforms of processed tracks to their originals and found no latency beyond that caused by a round-trip through my MOTU PCI-324 card and converters.

DESIGNER DRUMS

I love this incredible box. The TD4 has saved my butt on more than one occasion. For example, a client brought me drum tracks he had recorded in his living-room studio, and the completely undamped kick drum rang like a timpani. With the TD4's Sustain control

Transient Designer 4 Specifications

Inputs	(4) balanced, cross-coupled XLR (2 per channel)
Outputs	(4) balanced, cross-coupled XLR (2 per channel)
Nominal Input Level	+6 dBu
Maximum Input Level	+24 dBu
Maximum Output Level	+22.4 dBu
Minimum Load	600Ω
Frequency Response	20 Hz–100 kHz (–3 dB down at 100 kHz)
CCMR	–87 dBu @ 100 Hz
(Common Mode Rejection)	–80 dBu @ 1 kHz
	–75 dBu @ 10 kHz
	–70 dBu @ 20 kHz
THD + Noise	0.004% @ 1 kHz
S/N CCIR 468-3	–89 dBu
S/N A-weighted	–105 dBu
Dimensions	1U × 9.33" (D)
Weight	7.5 lb.

turned down most of the way and the Attack control up slightly, the kick's sustain and boominess were greatly decreased and the track grooved *so* much better. That benefited the entire mix, creating more punch and clarity.

On another project, increasing the TD4's Attack and lowering its Sustain control on a snare-drum track yielded two simultaneous benefits: it lent a gunshotlike crack to the snare drum, and it lessened hi-hat bleed. I could further whittle the sound down to a short, sharp attack by cranking the TD4's Attack control to the max and turning the Sustain knob to its minimum setting; combining that explosive burst with the original snare-drum sound created a slammin' track that rocked harder than dynamite. Conversely, I got a trashy rock sound by *increasing* the snare-drum track's sustain. The result sounded like I had a room mic set up over the drums—awesome!

On tom tracks, increasing the TD4's attack nicely enhanced the stick hits. Decreasing the sustain tightened up ringing shells without having to muffle the toms' heads with toilet paper and duct tape (which I virtually never do, because it sucks the life out of a kit).

In the course of processing a drum kit with the TD4, I became convinced that the 4-channel version has a practical advantage over the Transient Designer 2. For example, adding attack to the kick and snare sounds resulted in a slight enhancement of the toms' attack, because the Transient Designer also processed the toms' bleed (into the kick and snare mics). Having four channels of processing at my immediate disposal allowed me to counteract the effect by slightly backing off the attack on the tom tracks using the TD4's two remaining channels. Adjusting the degree of processing for four drum tracks at the same time lent greater balance to the sound of the overall kit, and it saved me from having to guess how the drums would otherwise sound with two passes of 2-channel processing.

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Another consideration when comparing the TD4 and the TD2 is that the latter offers only unbalanced I/O that operates at 0 dBu nominal levels. In its favor, the 2-channel version costs approximately half as much as the TD4 and represents a highly cost-effective entry point for access to this groundbreaking technology.

GROOVING GUITARS

Turning to a mixdown session, the TD4 also rescued an electric bass guitar track playing on a samba tune. The bassist's performance was a bit too relaxed (legato). I turned the TD4's Sustain knob down to the point where bass notes sustained no longer than the duration of a quarter note, which was a tad less than on the untreated track. Now the bassist's performance had clear breaks on downbeats, producing a more staccato performance that really propelled the rhythm section forward. I was dumbfounded by the realization that the TD4 had changed not just the bass track's sound but also the player's performance. Without the TD4, I would have had to track the entire performance over again to get the syncopated feel and tight groove that SPL's box produced with the twist of one friggin' knob! On another song, decreasing the TD4's attack by 7 dB gave the bass a wonderfully pillowy sound.

Next up was an electric guitar solo, playing blazing eighth-note triplets for bars on end. It was a very challenging part, and the guitarist understandably sounded just a tad sticky-fingered (staccato). No problem—simply increasing the TD4's sustain roughly 3 to 6 dB made the solo sound smooth and fluid, and it took less than 30 seconds to dial in the sound.

Finally, I tried the TD4 on a stereo pair of acoustic guitar tracks, in which the guitar played arpeggios. The track was so well performed and recorded that the TD4 could not improve it, yet I was happy to note that the unit's Link function successfully kept the stereo image steady.

I'M SOLD!

The Transient Designer 4 is one of the most exciting products I've had the pleasure to review over the past 15 years. It is clean and quiet, incredibly fast to set up, and intuitive to use. Its unique processing produces sounds that no other signal processor can currently create. At just over $300 per channel, this box is an outright steal.

I only wish that SPL would offer a software plug-in version of the TD4 in multiple formats, but the company informed me that—aside from a plug-in already available for use with Creamware's Scope platform—they do not intend to do so.

Try it for just a few minutes, and you, too, will be hooked. The Transient Designer 4 will rock your world.

EM *contributing editor* **Michael Cooper** *is the owner of Michael Cooper Recording, located in beautiful Sisters, Oregon.*

PRODUCT SUMMARY

SPL
Transient Designer 4
dynamics processor
$1,299

FEATURES	4.0
EASE OF USE	4.5
AUDIO QUALITY	5.0
VALUE	5.0

RATING PRODUCTS FROM 1 TO 5

PROS: Awesome sounds that no other processor can duplicate. Ridiculously easy to learn and operate. Useful on a variety of sources. Saves time in the studio. High-quality signal path. Outstanding value.

CONS: No I/O level controls. Rudimentary metering. No unbalanced I/O connectors. Difficult to disconnect Switchcraft XLRs. No sensitivity switch.

Manufacturer
SPL USA
tel. (805) 241-5140
e-mail info@spl-usa.com
Web www.spl-usa.com