

SPL Transient Designer



Instruments can be mixed at lower levels, still maintaining their position in the mix, but occupying less space. Front/rear positioning of drums or other percussive instruments can effectively be 're-miked' during the mix."

That's the idea at least; let's whip it out and find out.

abundance of Texas Instruments TL074CN chips are in use, as are some conspicuous THAT 2181LB VCA's... aha, it at least it has *something* in common with a conventional dynamics processor! Most conspicuous is the futuristic toroidal power transformer; in the owner's manual SPL goes to great lengths to describe their power supply design and its audible benefits. Quality engineering and construction throughout. More thumbs up.

By now I suspect a voice in your head is practically screaming 'Screw the cosmetics—how does it work?!

Screw the cosmetics, how does it work?

The theory behind the Transient Designer's operation revolves around several envelope followers per channel. An envelope follower (often found in modular synthesizers and filterbanks, and mandatory in analog vocoders and auto-wah stompboxes—and discussed in Chris Meyer's mondo 'Groove Blender' article last month) creates a voltage that is proportional to the level-over-time profile of an audio signal.

In other words, it tracks the transient shape or envelope of an audio input and outputs a corresponding control voltage. One of the envelope followers in the Transient Designer does exactly that, tracking the attack portion of the input signal.

A second envelope follower has a similar assignment but is further modified by a front panel control, appropriately labeled Attack. So, for example, if you turned the Attack control counterclockwise towards the negative dB scale, the second envelope follower would output a control voltage with a lower attack level, hence a slower rise time.

Now, here's where it gets a bit convoluted: the Transient Designer looks at the *difference* between these two voltages (the outputs of envelope followers #1 and #2) and calculates a control

It processes dynamics, but it's not a dynamics processor. Huh?

Once over

First impression out of the box: solid. This is a substantial piece of heavy-duty construction whose hefty weight is belied by its single rackspace size.

All switches and knobs are satisfyingly resilient; the knobs feature discrete detents in 1 dB increments over their entire range for consistent and reliable settings. Pushbutton switches are internally lit with sexy bright red LEDs; the smaller yellow signal-present LEDs are a bit less visible if you're not directly in front of the unit, but they convey the necessary information matter-of-factly. The front panel is painted in flat black with a textured blue splatter effect worthy of Jackson Pollock—distinctive without being garish.

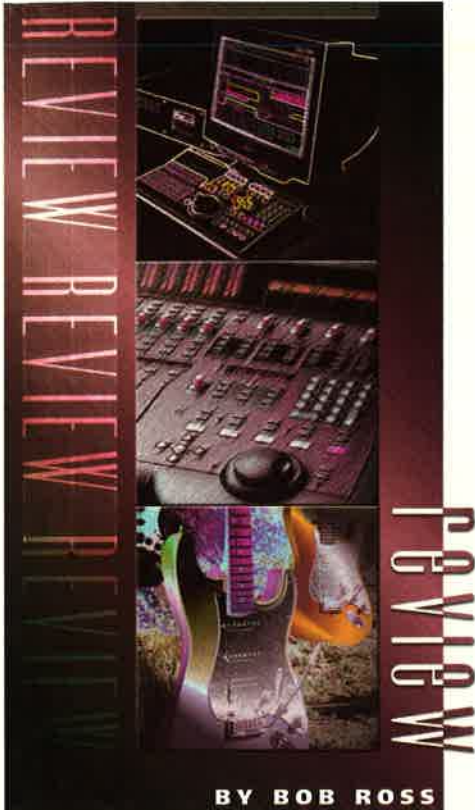
Around back, I/O is analog line level (only) via panel-mounted Switchcraft XLR jacks. (There are two Transient Designers available—the 2-channel Model 9946 "Transient Designer 2" and the 4-channel Model 9842 "Transient Designer 4.") We reviewed the latter.) Each jack is cleverly labeled top and bottom in mirror image text, so you can read them when you're bent over the top of your rack upside down. There's a standard IEC removable power cable, and a ground lift switch to isolate audio ground from chassis ground.

Popping the hood, one is confronted by a wall-to-wall printed circuit board, very cleanly and logically laid out. An

SPL deserves two thumbs up for innovation even before the Transient Designer is out of the shipping carton. Why? Because it's not another compressor or an expander or an equalizer or a filter or an "enhancer" or a reverb or a digital effects processor... It is unique amongst the plethora of hardware available for the contemporary recording studio.

And what does this unique innovative Transient Designer do? It designs your transients, of course! It is a dynamics processor of sorts, able to emphasize or de-emphasize the attack or sustain portion of an instrument's envelope. This effectively allows you to lengthen or shorten sustain, or speed up/slow down attacks.

According to SPL's literature, "[by] accelerating transients and/or shortening the sustain of an instrument, the mix can be made to sound more transparent.



BY BOB ROSS





voltage based on this difference. That differential control voltage is what gets sent to the VCA controlling the level of your audio signal.

So when you turn down the Attack knob, what's really happening is an automatic gain riding circuit is reducing the level of your audio for the duration of the attack portion of its normal envelope... giving the impression of a slower attack time.

Note that this is completely independent of level. There's no Threshold control as in conventional compressors/expanders; the Transient Designer is active regardless of the gain range of the input signal. Also note that two more envelope followers (#3 and #4) are required to create a differential control voltage for the sustain portion of the signal, though this gets fed to the same VCA that determines attack characteristics.

Adding it all up, the Transient Designer 4 I reviewed has a total of four VCAs and 16 envelope followers; the Transient Designer 2 would have two VCAs and eight envelope followers. Channel pairs can be linked for stereo operation, and each channel can be individually bypassed.

Screw how it works, how does it sound?

On the right sources, spectacular. Drum tracks and rhythm loops are especially good candidates for this type of dynamics manipulation. Imagine being able to adjust the direct versus ambient balance on a pre-mixed track, or isolate and highlight the shell versus skin sound on individual drums.

You can tweak the crack and punch of a snare drum without resorting to eq, or add definition to monstrosly boomy kick drums. (I found the latter capability especially useful in live situations, where large cone subwoofers often render kick drums and bass guitars undefined no matter how loud they are mixed.)

Subtle adjustments to the Transient Designer's controls can yield surprising changes to the feel of a groove, from noisy and diffuse to crisp, concise, and compact. As suggested in the literature, backing off on the Sustain control lets rhythm tracks "breathe" a bit, allowing more space for other elements in your mix. Judicious increases of the Attack control allow you to retain snap, definition, and In-Your-Face-ness while reducing the overall level of a drum track.

Bass guitar through the Transient Designer yielded mixed results. I was pleasantly surprised at how the Transient Designer allowed me to transform walking bass lines on an electric bass guitar into a reasonable facsimile of an acoustic upright. Bringing up the Sustain of percussive slap-&-pop bass lines allowed me to impart the body and note definition often absent from these parts.

But electric bass quickly got unappealingly "spanky" whenever I used positive values of the Attack control. If I tried turning it up by more than 1 or 2 dB I found myself (ironically) reaching for a compressor to tame those spikey peaks!

Imagine being able to adjust the direct vs. ambient balance on a pre-mix, or highlight the shell versus skin sound on individual drums.

Guitars can exploit the Transient Designer's capabilities nicely. On strummed acoustic guitar parts one can choose to emphasize the scratching rhythmic nature or the resonant harmonic fullness with equal ease. Clean chicken-pickin' electric parts could be made even spunkier and more percussive, and they could be pulled way back in the mix while maintaining their authoritative drive.

Though the Transient Designer did a commendable job imparting synthetic sustain to a guitar track, I still prefer a traditional compressor for that effect. Perhaps it's the sucking and pumping artifacts as much as the actual increased sustain that I associate with that sound?

The Transient Designer became strikingly, though indirectly, effective in a recent guitar editing session. I had a guitar solo recorded through so much over-the-top distortion that the waveform resembled a solid line from start to finish on my computer editor. No matter how closely I zoomed in, the start point of individual notes could not be accurately determined, due to the inherent compression and elongated sustain of the amp simulator used to record the original track.

Transient Designer to the rescue! I routed the track through one channel of the Transient Designer, cranked the

Attack up to +15dB (maximum), and printed that onto another track of the hard disc recorder. Viewing the processed waveform, I could easily see a distinct spike at the beginning of every note...allowing me to determine accurate edit points on the original unprocessed guitar track.

Other good uses: muddy, Beatle-esque pianos can be transformed into bright, jangly Yamaha D Series grands—and vice-versa. Lifeless overly-compressed samples can be revived with a modicum of dynamic range. Dense rhythm loops can effectively be re-orchestrated by calling attention to different elements of the loop.

Lousy uses? Vocals. Try as I might, I could not find a single useful application for the Transient Designer on voice tracks. Also, full program mixes. Don't bother trying to "punch up" your finished tune in the mastering stage—it'll just get ugly or weird.

Mercifully, SPL even states this unequivocally in their manual, recommending instead that the Transient Designer be used exclusively on individual tracks during mixing. I've noticed other manufacturers taking

this same stand recently, probably in response to the home mastering phenomenon/epidemic.

On any source, extremely incremental adjustments of the Attack and Sustain controls seemed to work best; turning either up past +6 dB can have disastrous effects on your headroom, so keep an eye on your meters and keep an ear open for unusual artifacts. Also, there is an audible glitch when switching the Bypass control in or out, so be forewarned. Other than that, though, it is clean, quiet, and utterly professional in operation.

So

Until I actually used the Transient Designer and played with it for a while, it never even occurred to me that I might want or need that effect. Having heard it, though, I'm impressed enough to suggest that if you decide it's the right addition to your onboard arsenal, you'll want to spring for the 4-channel version. Can't have too much of a good thing!

Prices: Transient Designer 2, \$559; Transient Designer 4, \$1099

More from: SPL Electronics (dist. by Music Trade Center, 718/963-2777, fax 718/302-4890), www.spl-electronics.com.

