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Solid-State-Logic Duende VocalStrip Processor   FIELD TEST
by Barry Rudolph

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Solid-State-Logic's Duende DSP unit comes in three variants: Duende Mini, a 1/3 rackspace Firewire-based unit capable of running up to 16 simultaneous plug-ins, Duende Classic, also FW, a single rackspace unit that handles up to 32 plug-in processors and Duende PCIe, a PCIe card that installs within either a Mac or a PC. Full details of processing power and expansion options offered by each hardware platform are available online at www.solid-state-logic.com

VocalStrip is the latest Duende plug-in processor. Like all Duende plug-ins, VocalStrip uses Duende's 40-bit floating-point processing and is compatible with any VST, Audio Units or RTAS host. VocalStrip is a mono-only plug-in with four processor sections that are purpose-built for vocals. The four processors are Equalizer, De-esser, De-Ploser and a Compander section comprised of a compressor and downward expander.

Along the Chain

What seems to be, at first glance, a limited EQ turns out to be a very effective three-band SSL EQ that's perfect for all vocal recordings--except those in dire need of surgery due to extremely poor recording quality. There's a 30 to 300Hz low-frequency shelving filter that has a slight boost right at its cut-off frequency. The second section is a high-Q, asymmetrical peaking/notch EQ with up to 12 dB of boost and 36 dB of attenuation. The last section is a high-band peaking equalizer that boosts/cuts up to 12 dB anywhere from 1 to 20 kHz. This very broad peak EQ brightens smoothly--much like an old program EQ.

The Equalizer section borrows its graphical display from the X-EQ Duende plug-in where a FFT spectrum analyzer display is superimposed over the applied EQ curve. But in VocalStrip you can view the FFT of either the input or output signal--i.e. before or after

equalization. This is a great feature for seeing the problem areas and the effectiveness of the applied EQ.

The FFT display will immediately show you large narrow peaks in the lower midrange when processing closed-miked vocals that generally have frequency resonance(s) due to poor mic placement or technique, room modes or wave interference from the singer's head. By placing the center of a high Q notch filter exactly on the center of these errant peaks will immediately clear up a vocal sound.

The Compander section starts with a downward expander set to a fixed ratio of 1.5 to 1. It has a single Threshold control that ranges from 0 to -96 dB (bypass). Mainly to reduce room tone and other background noise that will be brought up by subsequent compression, the downward expander acts mostly like a smooth noise gate with a fast attack time.

The compressor half of the Compander section has all the usual compressor suspects--with Attack, Release, Threshold, Make Up, Soft and Hard knee controls plus a Drive button that adds harmonic character to the sound. When the Compander is adjusted, the FFT EQ display changes to a transfer function graph plus an amplitude I/O difference histogram that shows the input signal and the compressed signal at the same time. Borrowed from SSL's X-Comp compressor, this is all good analytically but the Compander's gain reduction and expander meters and the plug's large Input and Output meters are all you really need.

SSL calls the De-Esser section "intelligent" and there are just two controls: Threshold and Amount. These controls interact and, as with any precision tool, proper de-essing calls for careful tweaking. Crank it all the way up, and you'll completely extract any "S" sound, leaving a hole in the vocal track. A blue indicator shows when removal is happening, and the Audition button lets you hear what is being removed. Brilliant!

Threshold, Amount and the indicator appear again on the De-Ploser processor. De-Ploser removes momentary low-frequency bursts of energy--like "P" pops, wind noises, mic-stand bumps, etc.

Processing Order And Using VocalStrip

One of the best features in VocalStrip is the ability to chain the four sections in any order. I established early on that if all four sections are to be used, the order should be: EQ, De-Ploser, Compander, De-Esser.

I opened an old Pro Tools session of a dance pop record I had already mixed and began rebuilding the lead vocal sound. VocalStrip loads instantly and has 2,075 samples of latency--easily covered by my HD3 Accel Pro Tools ADC system. Duende plug-ins have an A/B feature where you can build a preset and then load a stored preset and compare the two.

Starting with the Equalizer, the FFT display showed many huge, random subsonic bumps and narrow resonant vocal peaks at 230 Hz. The bumps were produced by recent seismic activity, and the singer's poor mic technique and recording room anomalies produced the resonant peaks. In addition, the vocal sound was very dark and boomy with occasional light sibilants. I started by rolling off bass to about 180 Hz with the low-frequency section--this helped immediately to "fit" the vocal track within the busy, bass-heavy dance production.

With the low frequencies somewhat reined in, I moved the notching filter to reduce the huge peaks centered around 230 Hz--you can type in parameter values if you wish. I could have used variable Q on this filter, because--depending on the arc of the melody--these peaks moved around in frequency, and broadening the notch would cover most of them. But maybe not! Actually the vocal already sounded a lot better and the effect of a 10dB notch was barely noticeable.

Next, to brighten up the whole vocal, I used the third section of the Equalizer to add 5 dB at 7 kHz with the intention of dealing with the increased sibilance later. This very broad peak EQ brightens smoothly--like an old program EQ, such as the classic Lang, Pultec or Langevin tube units.

With the De-Ploser next in the chain, I adjusted it by checking the output of VocalStrip on the FFT. Without this feature, I would be flying blind because some of these subsonic plosives were down at 20 Hz and below the usable bandwidth of my monitors. De-Ploser worked very well to reduce low-frequency plosives that were triggering the following Compander section with unwanted gain reductions. One minor complaint is that De-Ploser could use a faster release time to get out of the way quicker.

Compander works like any compressor plug-in. It was easy to get a solid and reliable setting. The singer was recorded well compressed, so I used a low 1.7 to 1 ratio and set the Threshold for about 3 to 6 dB of compression. The downward expander is optional--it operates fairly "rattle-free," and I used it very subtly to keep down off-mic noises. . Lastly the Drive effect is wonderful! I found no reason to ever NOT use the Drive effect. I don't what it is but I want it!

I put the De-Esser last in the chain because it took care of any sibilance exacerbated by treble boost from the Equalizer section and/or the average level boost acquired from the Compander section. I found putting the De-Esser before the Equalizer makes them work at cross-purposes.

De-Esser works very well, killing most of the energy of sibilants in a natural way. For lightly de-essing this singer, I ran the Amount to 100 percent and dialed the Threshold somewhere around -25 dB. For another singer, I found heavier de-essing required the Amount to be down to 50 percent and Threshold at the most sensitive. In general, the de-esser attack time is a little slow and it would be good if it were "ganged" to the Amount control: As you increased Amount, the attack time would speed up.

Pro Quality Processing

As I've found with all the Duende plug-in processors, VocalStrip has a thoughtful and careful design that's capable of immediate, professional results for getting a clear and focused sound. Like DrumStrip, VocalStrip enlists the best tool set to take the heavy lifting out of what is often an onerous task.

All Duende plug-ins are sold online at: www.solid-state-logic.com/music/duende/plug-ins.asp

PRODUCT SUMMARY

COMPANY: SOLID STATE LOGIC
WEB: www.solid-state-logic.com
PRODUCT: VocalStrip
PRICE: $399

PROS: Clean, clear vocal track processing with four effective processors that you can chain sequentially in any order.

CONS: Mono only and running all four processors in Vocal-Strip requires considerable DSP resources from the Duende unit.

Barry Rudolph is an L.A.-based recording engineer.
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