

# CEDAR DNS3000

With both Pro Tools integration and its own snapshot automation, the DNS3000 is a tool that SUSAN PENNINGTON can't live without.

The Cedar DNS3000 is the latest addition to Cedar's DNS (Dialogue Noise Suppression) family, other members of which have been in use in audio post production for nearly 10 years. The original DNS1000 (now discontinued) was awarded a Technical Achievement Award by the Academy of Motion Picture Arts and Sciences, and the DNS1500 and DNS2000 are often used in forensic restoration as well as film, music, live events, and computer game audio. The Cedar DNS3000 uses the same award winning technology inside the box, but combines the connectivity features of its predecessors, as well as adding new ones to enhance the de-noising workflow. For those of you not fortunate enough to be familiar with Cedar's DNS technology, it is broadband noise reduction like no other, centred around a series of sophisticated digital filters. These analyse the incoming signal and suppress noise in each filter in real time. The six gain control faders each control several of these filters, which is the key to Cedar's innovative design, allowing users to control the unit using relatively few front panel controls. The six faders can be focused to concentrate on the whole, or just parts of, the audio spectrum, by selecting from full, high, mid, low, mid-low, and mid-high ranges. Selecting a range concentrates all of the filters across just that part of the audio spectrum. This filter bank technology and fader controls are the same across the DNS1500, DNS2000, and DNS3000, but the differences between the three units are in their automation and interfacing capabilities.

To give some background on where the DNS3000 has grown from; the DNS1500 is a standalone unit, with physical hardware faders similar to the DNS3000, but without any automation programming capabilities or Pro Tools interfacing. The DNS2000, on the other hand, interfaces with Pro Tools using Cedar's RCS plug-in (Remote Control Software), which virtually replicates the faders on the DNS1500, but the rack mountable unit itself does not have any user controls.

The DNS3000 combines these traits, as well as several indispensable new features that will make de-noising a much more fuss-free process. All three units process the incoming audio in real time and can process two channels simultaneously with different settings, or be linked for stereo de-noising.

## Basic Operation

Getting your head around using the faders to de-noise audio is the same process for the DNS1500, DNS2000, and DNS3000, regardless of whether you're using hardware or RCS faders. You won't get very far without the manual, as the controls aren't particularly intuitive at first look, but it's very easy to get the hang of it. The manual takes you step by step through choosing the correct range setting, identifying the noise floor level with the level fader, then adjusting the band gain control faders to suppress as much noise as possible without introducing unwanted artefacts into the audio signal. This process soon becomes second nature once you get a feel for how the range bands divide up the audio spectrum, and de-noising a section of audio takes no time at all.

The manual also gives three helpful case studies on situations you might come across; suppressing traffic noise (low-mid noise), suppressing tape hiss (high range noise), and the third, which I've always found particularly interesting; suppressing excessive reverberation. I recently achieved surprisingly good results using the latter on some sync dialogue recorded in a very reverberant aquatic stage. The dialogue was quite shouty, and the scene was set on open water, so the untreated dialogue was unusable.

Using the DNS I managed to get rid of the worst of the reverb tail, enough that we didn't need to ADR the scene, once the dialogue was somewhat buried under layers of waves and boat engines. I was very proud of Cedar, having always believed that nothing can get rid of reverb. Needless to say the producers were happy too. ▶



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## THE REVIEWER

SUSAN PENNINGTON worked freelance for several years as a dialogue and sound editor before joining the team of in-house engineers at Spool Post Production in Nottingham. [www.spoolpost.com](http://www.spoolpost.com)

► This is a bit of a cliché, but once you start using Cedar's DNS technology, you'll wonder how you ever managed without it. I really mean that. I've been using the DNS2000 for several years, and it has rescued me from ADR so many times I can't count. Of course the DNS has its limitations, but they're high above any other noise reduction systems I've used before. Like any broadband noise reduction, it is most effective on signals that are well recorded, i.e., closely mic'd or on-axis, and with a constant (even if loud!) noise floor that isn't contaminated with footsteps or other transient background sounds. If you have got background transients, help out the Cedar a little by editing the 'fill' to contain only constant noise. Applying EQ before the Cedar, e.g., bass roll-off, or notch filtering out prominent tones can really aid the clean up process by allowing you to concentrate the Cedar in other areas of the audio spectrum.

### DNS3000

Having used the Cedar DNS2000 for many years, I was excited at the chance to get my hands on the DNS3000, with its tactile hardware motorised faders. I had no trouble in hooking it up in place of our DNS2000, and it was great to use real faders instead of clicking, dragging, and scrolling on the RCS plug-in.

The unit is much bigger than I expected so it can end up fighting for space on the table top, and the faders are quite chunky and widely spaced, so they don't quite fit comfortably under my hand, but then my hands are probably smaller than the average sound engineer. The equally chunky channel select, range control, and bypass buttons sit above the faders, and in contrast to these are the small soft keys below the screen that give access to the menus. The screen is a great feature, allowing users to see at a glance the fader and range settings for both channels, as well as indicating if the unit is in remote control mode or touch mode. A scroll wheel aids navigation through the menus and data entry.

Audio I/O connections to the unit are digital only, and can be made by either S/PDIF or AES/EBU (sample rates up to 96KHz are supported). Connection to the host computer is by Ethernet, rather than the USB connection of the DNS2000. Finally there's an LTC timecode input, to facilitate the automation of the snapshot feature.

The RCS software is compatible with Pro Tools (HD, LE, or M-Audio), and can control up to 126 DNS3000 units, which I'm sure is more than enough for any studio. Latency is minimal (the manual states less than 10 samples), and as the plug-in is only controlling the hardware, it doesn't need to reside on the track on which your hardware is inserted, so using a dummy track for the RCS plug-in reduces the latency to the minimum. The DNS3000 is compatible with the DNS2000 RCS, so I was able to simply load up existing dialogue edit sessions and select the DNS3000 instead of the DNS2000 in the RCS plug-in, and all my automation and presets were available to the DNS3000.

The feature that had really caught my eye in the promotional information about the DNS3000 was not the physical faders, but the fact that it connects to its host via Ethernet, rather than the USB connectivity of the 2000. This makes it ideal for

using in multiple studios (though obviously not at the same time). Our DNS2000 is constantly being un-plugged and re-racked each time we want to use it in a different studio. I was able to install the DNS3000 in our main dialogue editing room, where we would make most use of the physical faders, but with a quick scan of the network and a few patch cords, still be able to use it via the RCS plug-in in any of our other Pro Tools rooms. In our main studio the controls of the RCS can be spilled onto the faders of our ICON desk, so I didn't even miss the hardware faders when it was installed in another room. You can even unlink the hardware from the RCS by deselecting both channels on the unit, thus avoiding accidental setting changes by the engineer in the other room.

I found the 'touch' mode a really useful feature when using the RCS software with the hardware faders on the DNS3000. If you've already written automation in Pro Tools and you move any faders on the DNS3000 while playing back, those faders enter 'touch' mode, where the unit ignores any settings from the RCS for those parameters you've touched. This is really useful for auditioning changes to the automation you've already written in Pro Tools, without having to suspend automation in Pro Tools, since the DNS3000's touch mode does not affect Pro Tools' automation state.

### Snap Happy

Many of the DNS3000's new features are intended for non-Pro Tools users, since the automation capabilities of the RCS plug-in make for a much better workflow than using the snapshot features within the DNS3000. There are two ways of saving and recalling settings within the unit: Presets and Snapshots. Both can be backed up to any host computer via the Ethernet connection, so the settings can be archived with the rest of your project data, and be recalled to any DNS3000 at a later date.

Up to 100 user-definable presets can be saved, which contain settings for all faders and range settings for a single channel, and can be recalled to either channel.

The snapshot feature is where the DNS3000 comes into its own. Simply feed the unit with LTC,

and you can save snapshots of both channels to be recalled against the timecode. The DNS3000 gives you plenty of options to do this, of which I found the easiest was to capture the settings on the fly, then go in and tweak the timecode manually if needed. You can also move and copy snapshots, and copy new settings into an existing snapshot if you want to tweak settings already made, but you have to be constantly aware that the snapshot is always of both channels. This gets complicated if you're trying to set up automation for overlapping chequer-boarded dialogues, for example, but it's probably rare that you would need such complex automation.

### Conclusion

As a DNS2000 user, I found the DNS3000 to be a nice step up from its predecessor; the networking capabilities make it much easier for the DNS to be shared between studios, and the hardware faders are much nicer to use than the virtual RCS.

For non-Pro Tools users, however, the DNS3000 is really something to be excited about. It's a fantastic upgrade from the DNS1500, where users had no automation or preset capabilities. It allows all editors the same level of Cedar workflow that has until now been the domain of the privileged Pro Tools user.

The DNS3000 is a powerful noise reduction tool that really is in a league of its own. Flexibility is its main attraction, being useable by both Pro Tools and non-Pro Tools users. No post audio facility should be without at least one piece of Cedar DNS hardware, and the DNS3000 is really the most versatile unit there is. **RAM**

### INFORMATION

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