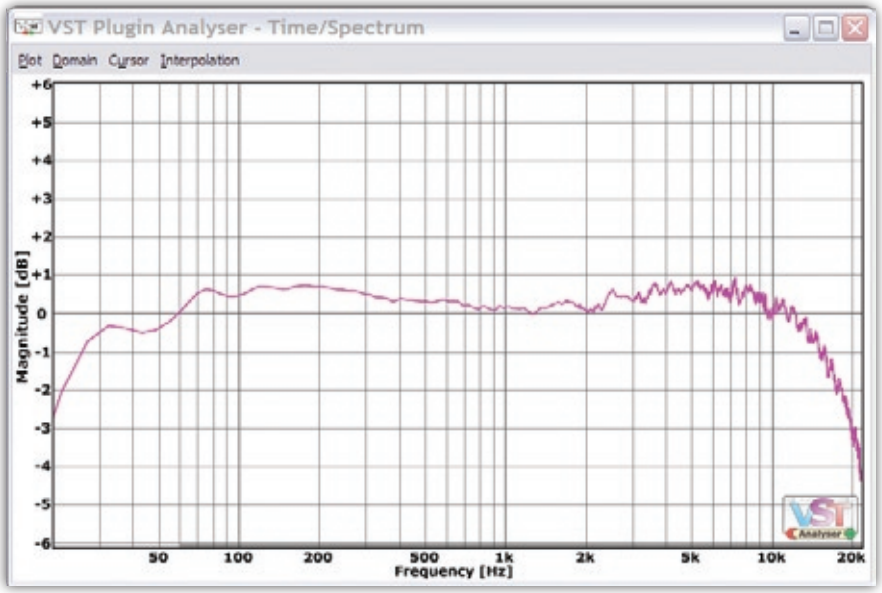
Acustica Nebula Pro 3.5

Dynamic Convolution Plug-in For Mac & PC

Dynamic convolution can be used to 'sample' any piece of audio gear. Have Acustica succeeded in giving this advanced technology a friendly face?

MARTIN WALKER



CDSoundMaster's Otari MTR10 running Ampex 499 tape at 15ips exemplifies the extra warmth and added high-end sheen you can gain from a well-calibrated tape machine.

When I last looked at Acustica Audio's Nebula 3 Pro, in *SOS* February 2008 (www.soundonsound.com/sos/feb08/articles/nebula3.htm), I found myself impressed by its potential. This 'hardware capture' plug-in was said to accurately reproduce the dynamics, saturation and signature sounds of real-world hardware ranging from EQs, preamps, mics, tape machines and reverbs, through to dynamic effects such as compression and tremolo, and even 'time-variant' treatments such as chorus, flanging and phasing.

Many of the sounds in its 6GB bundled library were of very high quality (particularly the preamps and reverbs), but I was less impressed by the confusing interface, the tape/compression effects, the high CPU overheads, and the very confusing web site. Fortunately, a lot has changed during the last three years (including a much easier-to-navigate web site!), so as Nebula Pro reaches version 3.5, it's time to bring ourselves up to date.

Acustica Audio have continued to concentrate on what they do best — enhancing their unique Volterra Kernel engine in a host of different ways and extending the options so that yet more diverse gear can be ever more accurately captured — but they now rely almost exclusively on talented third-party developers to release libraries of retro analogue gear, vintage tubes and equalisers, classic consoles, tape machines and other mouth-watering goodies. (In the boxes that accompany this review, I've looked at five of my favourites.)

New Features

Nebula 3 Pro features an entirely rewritten CORE II Engine, and it's now available in 64-bit and 32-bit versions for both PC and Mac. Written in assembly language, it now offers faster processing, greater efficiency, twice as many kernels (to capture yet finer nuances from the original hardware), side-chain input options for all its compressors, and nested selection menus with extensive sub-categories, for much easier navigation through the hundreds of programs on offer. Smaller but nevertheless welcome improvements include various new metering options to help you get your input signals to the most appropriate level, and a Trim control

CDSoundMaster: Reel Too Real & Tape Booster+

CDSoundMaster (http://cdsoundmaster.com) offer an extensive Nebula library, but I decided to highlight their $99 R2R (Reel Too Real) suite, described as 'The Essential Analog Tape Collection'. It offers a huge 170 'virtual tape machines' captured from eight different hardware models of various qualities and vintages, ranging from a 1950's Wollensak 1515 running at 3.75 inches per second through domestic models like Akai's 4000DS MKII, classic machines such as the Revox B77 Pro and Otari MTR10, right up to a 24-track Studer A800 MKIII sampled at both 15 and 30 inches per second. The variety of clean tape 'colours' on offer is wonderfully wide, from gentle mastering through the low-end warmth and top-end sheen of the Studer at 15ips, all the way to the telephone voice-like FX results of the early machines.

The $39 Tape Booster+ library can be used on its own to offer natural-sounding tape saturation effects, but its 44 programs were primarily designed to offer greater realism in a second instance of Nebula following R2R. It has none of the frequency-response quirks of tape machines, instead adding a range of perceived volume increases up to 8dB using 'drive' derived from extra harmonic content (from subtle up to nearly 10 percent according to my measurements). This proved great for adding thickness and richness to drums in particular, but the combination of the two was even better, to me sounding as good as various DSP alternatives.

option for libraries that allows input and output levels to be automatically changed in opposite directions, so you can more easily hear how Nebula effects change your audio as you drive them harder.

The engine is also expanding in other directions. A Server version lets the user spread its CPU/RAM load between multiple networked computers, while there's also a Local Server version: both extend the RAM ceiling beyond 1.2GB per Nebula 3 plug-in and offer a low RAM usage mode, so that all instances of the same preset use the same RAM. This is ideal if you want to run 50 instances of a console EQ across all the tracks of a complex mix, for instance.

For the casual user, there's also the Acqua interface, which allows third-party developers to to create stand-alone plug-ins running the Nebula 3 Pro engine hidden beneath their own GUI design. More radically, Acustica Audio now offer the entire Nebula 3 Pro engine running in CUDA format on most recent nVIDIA graphics cards, for those who want to offload some of the Engine's processing overheads. This only currently benefits reverbs and some EQs and, like DSP hardware, hikes up the total audio latency, but there's already plenty of potential here for the future.

AlexB: Preamp Color Suite

AlexB (www.alessandroboschi.eu) also offers a huge range of programs, some of which (his latest 4KD and MWD compressors, for instance) push the boundaries of what's currently capable with Nebula. For me, the sumptuous Preamp Color Suite quickly became a favourite, offering emulations of 39 different highly regarded solid-state and tube preamps. Of course, the names have been disguised, but most enthusiasts will quickly recognise what's being modelled from names such as 'A-Meck', 'Portsilk' and 'VocBocs'. Some are offered without their input transformers or with them for a little more saturation and low-end roll-off, while others offer several captures with different front-panel filter/EQ settings.

Nebula is exceedingly good at capturing the sound of preamps, and this is a beautifully recorded collection offering a surprising amount of tonal variation between the various devices, from the hardness of 'AN81' to the warm bottom end of 'MTP std'. As expected, the tube models offer more character, and with the Telefunken V72 you even get both solid-state and tube versions. While you can tweak the sound with Nebula's Drive control, some preamps are also supplied in clean and driven versions for more real-world accuracy. I was surprised by the amount of extra 'snap' between the 'Focus8 Cln' and 'Drv' versions. I've ended up using PCS a lot just recently, and at just €20 it's a steal!

AlexB's Preamp Color Suite samples a host of desirable preamps, including this classic Telefunken V72 tube model.

Getting Up To Speed

Until very recently, Nebula was shipped with very conservative default settings to suit those with older and slower computers, which meant very high latency and sluggish level meters — not a recipe to win over new users owning more typical machines! However, I'm pleased to report that during the course of this review I finally managed to persuade the developers to change the »

Acustica Nebula Pro 3.5 €139

PROS

- V3.5 offers lower latency and even better audio quality than previous versions.
- Many of the latest third-party libraries sound truly stunning.
- Installing and using Nebula is now considerably easier.

CONS

- Interface still a bit clumsy.
- Occasionally rather heavy on CPU.
- Bundled library could still do with a cull to raise the overall standard.

SUMMARY

Nebula now offers some beautiful high-end analogue sounds via its third-party libraries, and while some may not get on with its idiosyncratic interface and working methods, it's fabulous value for money for those prepared to put in a little effort.

Cupwise: Tube FM1

Cupwise (http://cupwise.com) specialise in extensively sampled collections of unusual gear, and I was particularly taken by their Tube FM1 library. Captured from six 1950s table-top valve radios and stereo tuners by both DI'ing the input signal and transmitting it directly to the radio aerials, the frequency responses are widely varied (as you might expect from such vintage items), so you get a rich variety of tonal variation. Distortion levels are also much higher than modern hi-fi equipment, typically offering at least several percent of second and third harmonics for softer highs, and plenty of added warmth at the bottom end. The Nebula Drive control is also very effective over a wide range if you desire more subtle or more extreme distortion levels that can be pushed well over 100 percent.

The radios are presented in different versions, some with carefully extended frequency responses for less radical tone-bending, and all are available in various options with kernel numbers from two (for lower CPU overheads) to 10 (for greater upper-harmonic realism). You'll have to look elsewhere for subtlety, but at just $16, Tube FM1 offers a huge range of radically different vintage timbres, highly suitable for adding loads of vintage character to both digital and analogue sounds, and is superb value for money.

With radical frequency responses and high harmonic levels from a collection of 1950s radios, the Cupwise Tube FM1 collection is great for special-effect treatments.

» few settings that mattered, so you no longer have to perform arcane tweaks to bring it up to speed.

Two versions of the plug-in are supplied: Nebula 3 and Nebula 3 Reverb. The standard version is optimised for low latency and, with the new default settings, offers a very snappy 5.9ms latency when used in 44.1kHz projects and just 2.7ms at 96kHz. The other version is intended for presets requiring longer kernels, such as reverbs, but should always be used if you can cope with its higher latency, since it offers potentially better audio quality with a smoother frequency response, and lower CPU overheads. Moreover, third-party developers always recommend its use to get the best out of their libraries. The 'Reverb' name is thus a bit of a misnomer, retained only for compatibility with existing projects. I'm also pleased to report that the days of its 374ms 'wading through treacle' latency are gone. On my PC, the new default settings produced very acceptable latency of 26ms at 44.1kHz, and 11.9ms at 96kHz.

The bundled Commercial Library is now cross-platform and up to version 4, although the below-par presets I commented on before are still there, just in case anyone still wants them. Personally, I think they should be relegated to a legacy library to increase the initial wow-factor of the others.

Skin Deep

Like many other users, I still find the default Nebula skin a waste of screen space: very few third-party libraries make full use of its eight programmable sliders, and controls 1, 2 and 8 nearly always default to engine settings for kernel attack, release and 'liquidity', all of which have already been optimised by the developer for best audio quality and can therefore be largely ignored. Fortunately, there are many smaller but very attractive freeware skins available from the Acustica Audio web site, featuring rotary knobs or even simple number fields beneath the main display window, to save screen space. Using Zabukowski's freeware Nebula Set-ups utility (www.zabukowski.com/software) it's also possible, if a little fiddly, to create separate Nebula plug-ins for your compressors, EQs, reverbs, »

Analog In The Box: Mammoth EQ

Analog In The Box (www.analoginthebox.com) have some lovely items in their range, but possibly the most impressive is their €15 Mammoth EQ, a clone of a very popular and expensive passive equaliser. Mammoth offers parametric peaking EQs and shelving EQs, plus low- and high-pass filters. Most Nebula EQs offer a single band per program to minimise loading times and processing overheads, but these can be awkward to use when you have to launch two or three instances to tweak multiple bands. For this reason, there's a very handy selection of 'combo' programs in the €10 Mammoth EQ Expander, each offering three different 'reduced feature' EQ bands without bandwidth adjustment, which is a great time-saving compromise.

Various tests have shown that once you ignore the attractiveness or ease of use of a EQ's GUI and concentrate solely on matching its frequency response with other EQs, many sound almost identical. The ones that genuinely offer extra character are those that add dynamic harmonic contributions, which Nebula, once again, does with panache. The differences may be subtle, but I was well impressed with the sound of Mammoth, which gave silky-smooth highs with lots of 'air' and a warm bottom end without mud.

» preamps and so on, each with a different skin and subset of Nebula programs. I found this made using Nebula far easier than wading through a huge number of programs in a single interface.

Drive Time

Hitting Nebula with the right input level is crucial if you want to hear the hardware as it was originally 'captured'. Generally, it's better to be guided by the individual library developer, as well as using your ears, but Nebula 3 meters are by default set to VU mode, typically with average levels of 0VU equating to -18dB, and peak levels of around -6dBFS. This leaves some headroom, just as you normally would when using hardware. Some libraries do recommend higher levels of 0dbFS for best results, in which case I found it more helpful to change Nebula's meters to Peak mode and aim for a full-scale reading. Control 7 is invariably Drive, which generally defaults to the input level at which the hardware was originally 'captured', leaving you the option of exaggerating or diluting reality with more extreme or subtle levels of harmonics at a particular input level. Otherwise, you simply use Nebula's input and output controls to adjust how hard you 'drive' the effect, just as you would with external hardware, always being careful to back off either of these controls if the 'overflow' LED indicates digital clipping. Some libraries also ring nastily at some frequencies if you push them too hard, so leaving at least a few dB of headroom is normally wise.

Most third-party libraries require Nebula 3 Pro rather than the Free version for best results, and generally offer a wide range of presets encompassing different drive levels and sample rates. Many have been captured at 24-bit/96kHz for 96kHz projects and even greater realism (albeit with higher CPU overheads), but will convert themselves on loading if your project uses lower sample rates. However, my listening tests suggested that if a developer offers both 44.1kHz and 96kHz library versions, choosing 44.1kHz presets for a 44.1kHz/48kHz project often sounded a tad better than automatic downward conversion of the 96kHz ones. Most libraries also offer similar presets with several different numbers of kernels: each additional one adds the contribution of an extra harmonic, at the expense of extra CPU overhead. Nebula currently offers a maximum of 10 kernels, which helps it excel when capturing preamps, EQs and reverbs, but prevents it from offering grungy distortion that requires a wider harmonic series. It also captures a single snapshot of a compressor very well, offering plenty of 'flavour' and depth, although because it works with blocks of samples typically around 2ms for compression, it can't currently offer fast enough attack times to kill the transients on kick drums and bass lines, as some hardware and software compressors can.

Final Thoughts

If you tried Nebula in the past and weren't convinced, try it again now with some demos of the new third-party libraries reviewed here and, like me, you could become a convert. Getting into its rather different 'mind set' can be tricky at first, but the huge number of high-quality libraries offering the sounds of esoteric audio hardware at pocket-money prices should make it well worth the effort. Due to space restraints, I've only been able to sample a few of the most interesting here, but you can find a full list of third-party developers at the Acustica Audio web site (www.acustica-audio.com/index.php?option=com_content&view=article&id=67&Itemid=160). Hopefully, a more informative manual will be completed by the time you read this, to ease newcomers more gently into Nebula's sometimes quirky world, but it's one that I feel is most definitely worth exploring. In essence, Nebula 3 Pro offers 'captured hardware' effects that in many ways rival those running on dedicated DSP cards, but at far lower cost. In these hard times, that's a very welcome combination! ■■■

Test Spec

- Acustica Audio Nebula Pro 3.5.
- PC with Intel Conroe E6600 2.4GHz dual-core processor, Intel DP965LT motherboard with Intel P965 chip set running 1066MHz system bus, and 2GB Corsair PC2-6400 DDR2 RAM, running Windows XP SP3.

Rhythm In Mind

Rhythm In Mind (http://rhythminmind.net) offer a veritable Aladdin's Cave of fascinating audio curiosities, with a huge range of single programs at pocket-money prices ranging from just $3. Their speciality is unusual front ends such as those provided by various classic hardware samplers (to add a little grit to your audio), rare filters and other effects that no-one else covers. I enjoyed the three vintage UTC transformer stages, each, at $6, offering a subtly tweaked frequency response and a few percent of mostly third-harmonic saturation down at the low end that proved ideal for adding flavour to drums and bass lines. However, the one that particularly appealed to me was the $10 vintage stereo RCA-Airon Line EQ for its unusual 10kHz program/tilt that reduces levels below this frequency and increases them above, allowing you to simultaneously add air and remove low-end mud, with the added bonus of an API transformer to add a little extra character.

This unusual RCA-Airon EQ from Rhythm In Mind is a one-knob wonder, letting you add 'air' and remove 'mud' simultaneously!

£ Nebula 3 Pro €139; Nebula 3 Server €189. Prices include VAT.
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