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welcome

On September 25/26, *Computer Music* and our sister magazine *Future Music* played host to Producer Sessions Live, a weekend of unadulterated, star-studded music technology indulgence held at SAE London. The event was a resounding success, with plenty for the attending throng to see and do.

Many of the music software industry's biggest players were there, showing off their latest wares, including Propellerhead, Steinberg, Avid, Cakewalk, Apple and Ableton; but the main attraction was, of course,

the Producer Sessions themselves. These exclusive masterclasses saw the likes of Danny Byrd, Tommy D, James Freemasons, Dave Spoon, Nu:Tone, Alex Blanco and Sharooz delivering their priceless production wisdom to an enthusiastic crowd.

We're currently working out how to make the mountain of video footage we captured at PSL available – keep an eye on our website for news as we have it. In the longer term, it's a safe bet that we'll be doing it again next year, so don't go making too many plans for September...

ENJOY THE ISSUE...

Ronan Macdonald **Editor**



The cm Mission Our goal is to help you create great music with your PC or Mac. With that objective always in mind, we bring you step-by-step tutorials on all aspects of software-based music production, unbiased reviews of the latest products, technical Q&As, and a Dual Layer DVD-ROM packed with exclusive software and samples.

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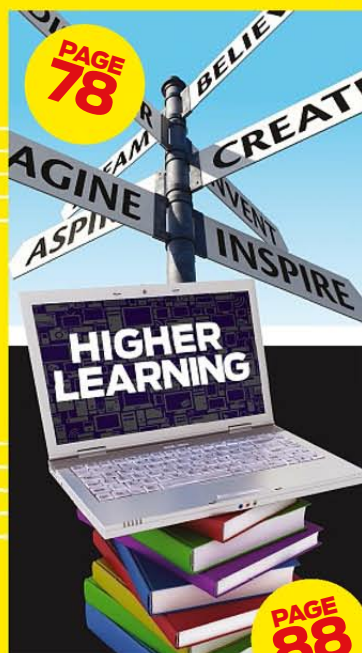
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PDF GUIDES FOR NEWCOMERS

If you're new to all this, check out the **CM Beginners** folder on the DVD - a library of material put together to help you get your head around many basic computer music concepts

cm/inbox



Bend our digital ear and have your say. Email cminbox@futurenet.co.uk

Message of the month

The message from Dean Taylor, titled /Rant, in **cm157's Inbox** got me thinking.

I personally don't see the problem in using loops and samples. We're all here and producing music because we love music. Even using samples and loops, you're producing a unique track that other people would not have made because they're not you – there's nothing wrong with this as long as you are making it your own track.

Samples and loops help creativity and workflow. You could spend hours or even days trying to create some sounds of your own and find they

just don't work, but a ready-made loop might yield sudden inspiration for a new track.

As a producer, you still need to bring people through the track, the rises and drop-offs, the breakdowns, etc. Samples and loops

don't do this for you – you, as a producer, have to have the skills to do this, writing a great track. Yes, it makes it easier to put a coherent track together, but six minutes of the same loop repeating itself won't interest anyone. So producers that use loops and samples in their productions have parts of themselves in them in the way they've arranged it, the effects they've used, style they write in, etc. And if they use a preset in a synth, they've still got to write a great synth line, which is no different to, say, someone picking up a guitar and writing a great riff.

Seeing as we are all producing music because we love it, we should be giving credit where credit is due when a great track is made, no matter where the building blocks have come from.

Luke Bredin, Benfleet

Too right! The argument that you're not making real music unless you're programming/recording/designing everything from scratch is one that, while not hard to see the thinking behind, just strikes me as rather elitist. Even if the track you make consists *entirely* of prefab loops, where's the harm? It's all music and it's all good. **RM**

The writer of our *Message of the Month* will receive u-he's superb Uhbik effects bundle for Mac and PC, worth \$149!

www.u-he.com



Zip it

I have been subscribing to *Computer Music* for two years now and am constantly learning and getting a great amount of inspiration from your tutorials.

I have, however, found one thing that I would like to comment on. I've just noticed that the samples on the **cm156** DVD are held in ZIP files, which makes quick auditioning of them from the DVD a nightmare. Instead of being able to audition and drag files off the DVD straight into my DAW, I have to now drag the ZIP file onto my desktop or external hard drive and then extract them from there. This triples the time that it used to take just to audition your samples!

Is there a reason for this change to ZIP files? If not then

please, please will you change it back again!

Sean Webb, Auckland, New Zealand

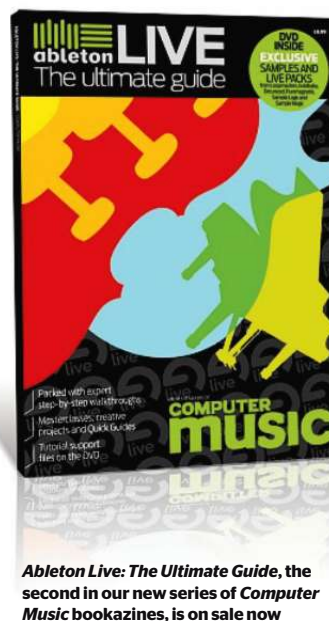
Don't worry – it's not a permanent change. We very occasionally have to zip our samples when a particularly large library won't fit on the DVD uncompressed. Being at 24-bit quality and so numerous, some of our bigger sample collections do demand a lot of storage space, and if we've got a particularly high volume of other content on the disc, zipping the files is our only option. Hopefully, though, you'll agree that the inconvenience of having to extract them to your hard drive for auditioning is a price worth paying. RM

We are the ultimate

Your *Ultimate Guide* to Ableton Live is awesome! Just like the Reason one before it did with Reason, it's rapidly becoming my Live bible (I use Reason ReWired into Live in my studio). A couple of questions, though: 1) Are there going to be any more *Ultimate Guides*? 2) Any news on Live 9?

Stephen Pasquale, Chippenham

Yes, I can confirm that our *Ultimate Guide* bookazines are an ongoing series. I'll be able to tell you what subject the next one's on soon. *Ableton Live: The Ultimate Guide* is on sale in good newsagents now, and at www.myfavouritemagazines.com. Oh, and no, we've not heard



Ableton Live: The Ultimate Guide, the second in our new series of *Computer Music* bookazines, is on sale now



Don't panic - your music-making machine really won't end up looking like this just because you've kept it connected to the internet

anything about the next version of Live yet. Soon, hopefully... RM

FUD

Your *Problem Solved* feature in **cm155** was very helpful, but it overlooks an important factor for DAW stability: not leaving a studio PC connected to the internet. The problems that could arise from that could at the very least ruin a studio session and at worst destroy your computer.

People who are honestly paying for software are being punished by VST/VSTi and DAW programs that are constantly looking for internet connections to verify the authenticity of the software due to piracy. There are many programs online - such as Little Snitch - that allow you to monitor the 'call home' functions of software. Not to mention, if you do have a virus on your computer, most viruses update via the web. Without that connection, the virus does not spread as fast and could in fact be removed via your antivirus software. An internet

"Out of curiosity I tried monitoring call-home functions one day, and the program I used lit up like a Christmas tree"

connection could allow that virus to update itself past the newest countermeasures.

Out of curiosity I tried monitoring call-home functions one day, and the program that I used lit up like a Christmas Tree. Particularly offensive was Native Instruments Service Center, which seemed to be calling home

every 30 seconds to make sure my paid-for copy of Massive was legit. Other programs, such as Ableton Live and FruityLoops were calling home so many times it would make ET jealous.

In short, this invasive action robs precious CPU cycles and RAM, and if the VST was in use, it could in fact crash your DAW or computer. When a producer is working on music, he isn't supposed to be chatting on MySpace, Facebook, Twitter or MSN. These types of actions could lead to further system instability. None of the pros leave their studio computers connected to the internet.

My suggestion is to check for VST and DAW updates once a month max and disconnect your PC or Mac immediately after.

**Christopher L Johnston,
Toronto, Canada**

The idea that you should keep your music computer offline is an outdated one, and most of the 'risks' you describe are simply non-issues. Exercise the usual computing common sense (back up, run a firewall, don't open dodgy email attachments, don't install cracked software, etc) and there's no reason not to keep your music computer online should you choose to.

Online authentication is annoying, certainly, but it generally uses very, very little in terms of resources; and we can safely assume that any sensible developer will test their call-home system with the relevant plug-ins running.

Finally, it's very much standard practise for many producers these days (pros included, I can assure you) to have all manner of IM and social networking applications running while they work. It just isn't an issue. RM

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Producer Sessions Live

Nine pro producers and tens of top music technology companies at the first ever **cm** event



From the opportunity to get your hands on the latest gear to hearing big-name producers (such as Dave Spoon, top right, and Steve Mac, bottom right) reveal their top tricks first hand, PSL was a roaring success



> On September 25/26, SAE London hosted the first ever *Computer Music* event, **Producer Sessions Live**, held in partnership with our sister magazine *Future Music*. We had high hopes for the occasion, but even we were surprised at just how terrific it all turned out to be.

Spread across six floors, PSL featured hour-long presentations and Q&As from nine star producers, free sessions on today's top DAWs, masses of gear to buy from show sponsors Absolute Music, and demo rooms where you could try the latest products from Ableton, PreSonus, Universal Audio, M-Audio, Toontrack, SSL and many more.

Saturday kicked off with a sub-quaking session from Steve Mac followed by an even more thunderous lesson from Dave Spoon. Alex Blanco created a tune on the fly,

revealing the methods he and Jon Carter use to accelerate track-building. Tommy D's session was absolutely packed, and we watched from the sidelines as he dispensed the kind of deep-seated knowledge that's made him the producer of choice for so many huge names. James Wiltshire from Freemasons was Saturday's 'headliner', with much scribbling of notes as he detailed the parallel processing techniques that he reckons are essential to huge mixes.

Chicane producer James Hockley kicked off Sunday's sessions, followed by another from Dave Spoon. Danny Byrd built a breakdown/build-up/drop structure, demonstrating the tricks of the trade in creating effective DnB arrangements. Nu:Tone, meanwhile, revealed to us how he recreated a section of a Chic tune, primarily

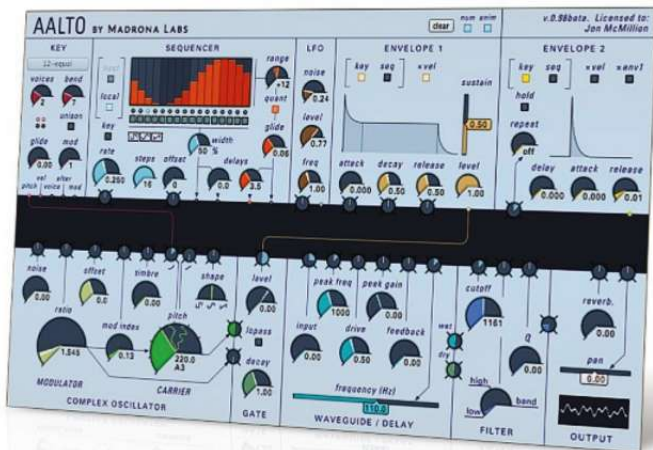
to avoid mechanical copyright issues but gaining absolute flexibility into the bargain. Amazing to watch! Finally, Sharooz's session made it clear that a great track can be way more than the sum of its parts, as long as you know how to put them together.

It seemed that everyone left PSL laden with insights, inspiration and that itch to get into the studio - and that includes ourselves and the producers! We filmed all the sessions and hope to make the material available at some point. Nothing can beat being there in person, though, especially if you have specific questions that you'd like answered. We think it's safe to say that **Producer Sessions Live** won't be a one-off event, though, so see you next time!

www.producersessionslive.com

Madrona Labs Aalto

A soft synth that truly innovates? Could be...



The interface gives animated visual feedback - it makes perfect sense when you see it in action!

> Madrona Labs have released Aalto, a semi-modular synth with an "innovative, patchable UI, distinctive sounds and a charming personality". It aims to give musicians the ability to create sounds previously tricky to make with soft synths. At its heart is a complex oscillator with FM, timbre and waveshape controls capable of producing sounds that are "unique, malleable and alive". The oscillator is said to be inspired by the creations of synth design legend Don Buchla.

"Aalto's sounds are not hyped or confined; they are wide-range, open and natural"

Madrona Labs

Each of Aalto's voices has a built-in sequencer with patchable, independently controllable rate and offset "that make it easy to achieve evolving, chaotic textures". There's a low-pass gate module too, also per-voice, featuring customisable vactrol emulation (opto-coupled voltage control, as used by Buchla) in its control path, which "slows down the response to incoming signals through a nonlinear filter". After the gate module, the signal for each voice passes through a patchable waveguide/delay module that features a waveshaper and a peaking EQ for yet further sonic manipulation possibilities.

Madrona say that Aalto is capable of producing a range of sounds "from lush to edgy". The plug-in is available as an AU for Mac and costs €99. A Windows version is pencilled in for release later this Autumn.

www.madronalabs.com

Mixdown



Our Deputy Editor presents a large column of fail - that's how he likes it, strangely

> As you'll have gathered from Ronan's introduction and our lead news story, Producer Sessions Live was a fantastic success. While the main draw was perhaps the chance to learn first-hand the 'secret techniques of the pros', there was a lot more to be gleaned than just fancy processing

"As in many walks of life, you have to be prepared to fail in order to succeed"

tricks, and for the benefit of those who couldn't be there, I think it's worth relating some of this.

I think a lot of attendees will have been relieved to discover that professional producers are human and thus fallible, just like the rest of us. By their own admission, not every idea they come up with in the studio necessarily turns into musical gold. The 'trick' is that they have the intuition to know when a particular track idea could be something special (and when to give it up as a bad job), and how to make the most of it, both in musical and production terms.

The overriding lesson here is that, as in many walks of life, you have to be prepared to fail in order to succeed - you might have to go through a hundred bad ideas just to get to one good one. As a case in point, I recently spent an evening going through the 300-odd guitar riff ideas I've amassed over the past few years. These were already the ones that I thought were pretty good, but I still whittled it down to around a hundred of the best and colour-coded all the audio clips according to riff type. No doubt only a few of these will end up actually making it into songs, but that's OK with me - I'd rather have one good tune than ten mediocre ones. It's all about quality control.

Going back to PSL, I think many will have found it reassuring that, quite often, there really wasn't anything unusual or obscure going on in the producers' mixes - just common sense techniques applied in the right places. When asked about what EQ and compression settings they use on particular sounds, the answer from the pros was almost invariably thus: It depends. It's easy to fall into the trap of throwing every production trick you know at each sound in the mix, but the reality is that applying a smaller amount of appropriate processing will invariably give better results.

EP-34 Tape Echo

Universal Audio go straight to tape with this new delay

> If you've ever lusted after the sound of Echoplex's vintage tape delay units for your axes, you're in luck: Universal Audio have released a "warts and all" amalgam-emulation of the EP-3 and EP-4 units. These models have been a particular favourite of some of the biggest guitarists of the last few decades, including Brian May, Jimmy Page and Eddie van Halen.

Cunningly named EP-34 Tape Echo, the new plug-in claims to target specific behaviours of the classic models in order to produce the rich and warm tape delay effects unique to the "distinct, chaotic" sound of the Echoplex units. Universal Audio big up EP-34 Tape Echo as "virtually indistinguishable" from the classic sound. It can produce a range of tones from slap effects to "self-oscillation chaos".



It's not an official emulation, but coming from Universal Audio, it'll no doubt sound like one

EP-34 Tape Echo is available as a UAD-2 plug-in for Mac and PC and costs \$199.

www.uaudio.com



Clockwise from top-left: Arturia The Player, ESI Keycontrol 25 XT, Akai SynthStation25, Korg microKey and the Alesis Q25

Less keys is more

The world's gone compact keyboard kerrrazy!

> A bunch of compact USB keyboard controllers have made it to market of late, so we thought it appropriate to put them under the spotlight.

First up is the Korg microKey. This USB-powered keyboard features 37 velocity-sensitive mini keys that Korg claim "accurately convey the dynamics of your performance to any software package". Its most novel feature is the fact that it can function as a USB hub – the microKey's two USB ports mean that musicians can muck around with two more USB gadgets than usual. The keyboard also features some octave shift keys and pitchbend and modulation wheels. It will set you back £82 and works with PC or Mac.

www.korg.com

ESI's Keycontrol 25 XT is USB-powered, cased in aluminium, and is a plug-and-play MIDI device requiring no drivers. The Keycontrol has 25 full-size keys as well as octave switch keys, a pitchbend wheel, modulation fader and four endless rotary encoders. It also comes with Cubase 4 LE. The 25 XT is for PC and Mac, priced at £79. Keep an eye out for its big brother, the ESI 49 XT, too: this will cost £99 and has a mammoth 49 keys. Yowzer!

www.esi-audio.com

Arturia expand their Analog Experience range of 'keyboards 'n' software' with The Player. It has 25 velocity-sensitive keys and manages to cram one clickable encoder, four regular encoders, one modulation joystick and seven switches onto its case. The Player comes with Arturia's Analog Player software, which features 1000 synth

sounds and many presets that bring you the sounds of esteemed Arturia synths like the minimoo V, Moog Modular V and CS-80V. The Player is the most expensive keyboard in our roundup, coming in at £129.

www.arturia.com

The Alesis Q25 is another freshly released 25-keyer. It's velocity-sensitive, and features pitch and modulation wheels, octave switches and a Volume/Data Entry slider, all in an effort to enable musicians to "add expression, range and dynamics to performances quickly and effortlessly". The Q25 is USB-powered, doesn't require any drivers and is class-compliant, making it another keyboard that's ready to get going whenever you are. It comes with Ableton Live Lite and will cost you £60.

www.alesis.com

One for the iMusicians among you, Akai's new SynthStation25 aims to "transform your iPhone into a music production studio" – though you can also connect it to your computer as normal via USB or MIDI cable. The keyboard contains a built-in dock for iPhone or iPod Touch, and features two octaves of velocity-sensitive synth-action keys, plus pitch and modulation wheels, octave up/down buttons and sound-bank buttons. It also has stereo RCA line outputs and a headphone jack. The SynthStation is retailing for £75 and will work with Akai's SynthStation Studio app (£5.99 from the iTunes App Store) on your iDevice as well as "virtually any" MIDI software on your desktop.

www.akaipro.com

Damaged



Are MIDI controllers real instruments? A firm 'no', reckons Chris Randall

> Yesterday, as I was taking my daily stroll through the interwebs, I came across a demonstrational video a company had just released, for an instrument they had invented (and which, in the interests of keeping the peace, shall remain nameless.) This instrument has been around for a couple of years now, and while it is a certain shade of unique, it is essentially a variation on the 'push a button, out comes a sound' devices that so regularly entrance the don't-want-to-learn-keyboards crowd.

'Alternative' controllers often manage to make me giggle, if not LOL outright. They're almost always invented as an easier-to-learn alternative to keyboard instruments, which is a tough row to hoe, considering that we've been using variants of the ubiquitous keyboard since the 14th century, to the point where the piano is essentially a fundamental

"Alternative controllers often manage to make me giggle, if not LOL outright"

part of Western cultural identity. Yet every few months someone comes along and says, 'I've got this thing here that will free you from the oppressive overlords of 12-Tone Equal Temperament, and also looks sort of like a guitar, which ought to help your sex life a bit!'

Instruments like these never take into account one fundamental truth: a MIDI controller doesn't really count. Instruments have traditionally had a form that closely followed function. With the advent of MIDI, we were ostensibly freed from that, but ultimately, 'push a button, out comes a sound' is all the same instrument. And that's the problem with this video I just saw: the guy demonstrating the instrument played some bass samples, and this electric guitar sample, and some drum samples, but the instrument itself – well, by itself it doesn't sound like anything at all. It's just a big pile of buttons and a MIDI Out port. I'll stick with a keyboard controller, thanks. I already know how to play that.

Chris Randall is the co-owner of Audio Damage Inc, and proprietor of the Analog Industries blog, on which he regularly pulls no punches.

www.audiodamage.com
www.analogindustries.com
Twitter@Chris_Randall



Ableton Amp it up

Get dirty with this virtual guitar amp and cabinet for Live

Softube provided the DSP muscle for Amp, which bodes very well



> Ableton are dirtying up their ubiquitous Live DAW with a new guitar amp sim, creatively called Amp. Codeveloped with analogue modelling wizards Softube, Amp aims to “deliver warmth and drive without hassle” and is bundled with a separate effect called Cabinet, which provides – you guessed it – a selection of modelled speaker cabinets, all of which have “optimised mics and mic positioning”. Ableton are keen to point out that Amp can be used to process anything you like – us it, for example, to add grit or even all-out distortion to synths.

There are seven amps on offer, all of which are based on classic gear – specific amps aren’t named, but gear-savvy axemen should be able to suss it out. The Clean and Boost effects are based on the ‘Brilliant’ channel of a 60s amp that was “widely used by guitarists of the British Invasion”, while the Bass amp is “modelled after a rare PA from the 70s, popular with bass players due to its strong low end and ‘fuzz’ at high

volumes”. Also available are Blues, Rock, Lead and Heavy amps. Cabinet includes several speaker models, each of which can be used by themselves as well as in conjunction with Amp. Also included to show off Amp’s capabilities are a bunch of instrument and effect racks, clips and more than 400 presets.

Amp will set you back €99 but is also part of Ableton Suite 8 (€549), so if you’re already a user, just download the update to get your hands on it.

www.ableton.com

“Focus on making music instead of searching for the right knob – get good dirt, fast”

Ableton

Trackers & Demoscene



Scene.org Awards news and some mind-bending stuff from Hitori Tori

> After threatening to cancel in 2010, Scene.org have just announced that their prestigious awards ceremony will indeed take place in 2011. Having been held for eight years at Germany’s now defunct Breakpoint party, the operation will move to Norway’s The Gathering, the second largest annual computer party in the world (after Dreamhack).

Elsewhere, there’s an impressive new video doing the rounds. Using Renoise in tandem with Livid Instruments’ Ohm64 controller – and working at lightning

“Canadian tracker veteran Hitori Tori seems to be doing for Renoise what only Derren Brown can do for a deck of cards”

speed – Canadian tracker veteran Hitori Tori seems to be doing for Renoise what only Derren Brown can do for a deck of cards. Head to fwd4.me/fwX to check out this jiggery-pokery for yourself.

DEMO OF THE MONTH

cdak by Quite & Orange

It’s not hard to see why *cdak* stole first place in the combined 64K/4K compo at the recent Chaos Constructions 2010 party in St Petersburg. Visually stunning, it’s worth pinching yourself while watching to keep in mind that the whole production fits into a measly four kilobytes of disk space. Looks-wise, it’s like *The Matrix* meets *Tron*. Sonically, it’s something that Vangelis might well have wanted in *Bladerunner* and, on reading the credits, it becomes apparent why: the man behind the audio is Brothomstates, who was a big name in the days of DOS demos under his Dune pseudonym. This excellent soundtrack is but the latest splendid feather in a very well-plumed hat. Links are on your *cm* DVD, as usual.



All this in just 4K, with Brothomstates/Dune sonics!

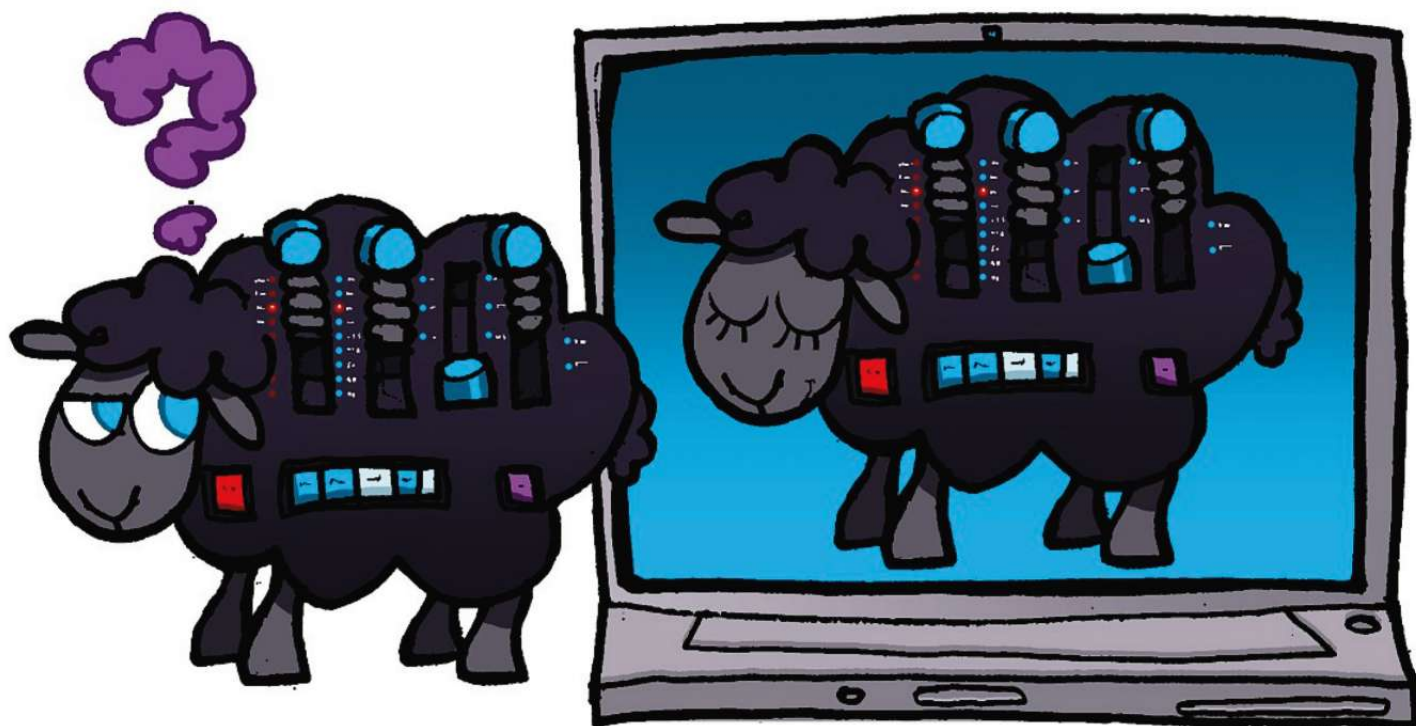
cm Freeware Special

> Want to get your hands on a superb, *cm*-recommended collection of the best free music software around? Then pick up the all-new *cm* Special 44. It features a massive collection of 99 plug-ins, plus a host of other indispensable software tools. Every single one is on the included DVD and has been hand-picked and tested by us, so you can rest assured that it’s all killer and no filler! Synths, drums, unusual instruments, a huge collection of processing tools and much more – it’s everything you need to make great music (and a lot of fun to boot!).

Turn to p60 for stockist details and on sale dates, or order at the site below.

www.myfavouritemagazines.co.uk





Can emulations take authenticity too far?

> Authenticity is a big word in the world of computer music, and we're not just saying that because it's got a dozen letters in it. For many developers, creating plug-ins that accurately emulate classic hardware compressors, EQs and other studio staples has become something of an obsession, with each new virtual processor promising to be closer to the original than those that came before it.

However, while we're all for having the sound of vintage equipment in our DAWs, should we really be expected to put up with all of its idiosyncrasies as well? We're talking about products that were built decades ago, so is it really too much to suggest that some concessions to modern interface design and programming should be made?

"The quick answer is that people want that famous 'look' on their screen"

Let's start with the GUI issue: why is it that we get interfaces that, although 'classic' in appearance, waste screen space and are often illogical and confusing?

Universal Audio have produced countless hardware emulations for their massively popular UAD DSP-powered plug-in systems, and their

Plug-in Product Manager Will Shanks feels that totally authentic interfaces are valid. "With almost every piece of well-loved vintage audio gear, there are controls or behaviours that fly in the face of modern expectations on how equipment should work or sound," he says. "However, this odd behaviour or unusual control arrangement is often precisely the access point that makes the vintage unit desirable."

"Our aim is to preserve as closely as possible the sound and experience of using the original hardware, because this is what our demographic - ie, the 'core' UAD customer - expects. They love the exacting details, primarily with the sonics, but also via the GUIs."

Looking good

When asked the same question, Softube's Niklas Odelholm takes a similar line, stressing that companies like his are simply responding to their customers. "The quick answer is that people want that famous 'look' on their screen, and they don't feel comfortable if it looks like something else, or very computer-ish," he says.

"Another factor that is important for us is that users often have an intuitive feel for the workflow when it comes to hardware, and when you create an interface that looks more like a modern piece of software, you lose that."

"If an interface looks like hardware, no one will expect a knob to suddenly disappear or change function, as they often do in modern

GUI design, so they feel more comfortable about it. It's all about expectations, I guess."

This is surely true for some customers, but possibly not for all, and in particular, the growing number of younger computer musicians who have no experience of using any hardware whatsoever. Wouldn't it be possible to offer alternative GUIs - ones that take advantage of modern design ideas and are optimised for the computer screen - for such users?

Will Shanks admits that Universal Audio have considered this idea, but have no plans to follow through with it at the moment. He also reminds us that "if the GUI is distracting, in most DAWs the user can access a 'control view' that allows the most straightforward interface possible - just a set of sliders."

Hot stepper

Aesthetics are one thing, but what about when a developer's decision to be totally authentic actually affects the way that a plug-in performs? We've heard quite a few users ask why controls on vintage software effects often move in steps rather than smoothly, for example. Are developers just slavishly copying the original for the sake of total authenticity or are there technical reasons why it has to be this way?

"A bit of both," says Niklas Odelholm. "In many cases, it's the limited choices that makes a piece of gear classic. A Trident A-Range wouldn't sound like an A-Range if it was fully parametric."

"And then it really depends on the hardware. Some pieces, like the filter boxes we emulated in the Abbey Road Brilliance Pack, are so extremely step-wise in their design that the process involved in 'smoothing' the controls would be the same as re-designing the circuits from the ground up. And then it wouldn't really be a classic piece of gear, would it?"

You have to take his point, and Mike Fradis, Product Manager at Waves, makes a similar one:

"If you are talking about [Waves'] API/V-Series, where frequency and sometimes gain have steps and not continuous controls, the reason for that is that when we are modelling we are emulating the electrical circuit - the circuit is designed in steps and is not continuous."

Fradis also returns to the authenticity argument: "We want engineers who expect a certain sound from a piece of hardware (when they dial in, say, Gain 5 and Peak Reduction 5 on an LA-2A) to get exactly the same sound. This adds to the user experience and helps them feel as if they are messing with the actual unit."

If you're looking for an even more extreme example of a developer striving for absolute authenticity, take MOTU and their MasterWorks Leveler. This emulates the Teletronix LA-2A optical leveling amplifier and, in MOTU's words "is so accurate, you need to give the plug-in a minute to warm up and 'settle in' to its fully operational state, just like the real hardware!"

It sounds like a gimmick, but MOTU's Director of Marketing, Jim Cooper, insists that it isn't. "With a real LA-2A, and by design in our Leveler plug-in, you can get different 'warm state' behaviours depending on the audio material you run through the unit during its 'waking' stage, a process referred to as 'priming the cell'."

"In the Leveler, a menu lets you save the warm state and recall it without retraining the cell. To get to that unique warm state, however, you must let the plug-in go through the waking process the first time, just like the real hardware."

"Our novel computational model reproduces the LA-2A's observed physical behaviour astonishingly well while consuming minimal host CPU resources. The Leveler's ability to save and recall the T4 opto-coupler cell's 'warm state' represents a unique advancement in the field of modelling plug-ins."

Beyond emulation

While some developers seek only to emulate the original hardware, it is worth pointing out that others have gone beyond their source material. Cytomic's The Glue, for example, mimics SSL's hardware buss compressor but adds additional Range and Mix controls, a PeakClip option and a side-chain feature with external and low-cut options. So, it's arguably a more practical proposition than its forebear.

Then there's ArtsAcoustic's Big Rock (see p104), which not only gives you an accurate representation of Electro-Harmonix's Small Stone phaser pedal, but also features extra options and features.

One might postulate that as a new generation of software-savvy producers comes through, the demand for plug-ins that slavishly emulate hardware that's older than they are will decrease. However, Waves' Mike Fradis can't see this happening: "I think that as time passes, the demand for good emulations of classic gear will increase because the young generation will still be raised on stories of how they recorded Led Zeppelin, The Rolling Stones, Pink Floyd, etc, and they will like the option of knowing how classic hardware sounded," he says. "After all, that's what makes it classic hardware."

Softube's Niklas Odelholm draws parallels with guitarists' love of vintage instruments. As he rightly points out: "The Strat survived the 80s, didn't it?" **cm**

Ins & outs

NOVATION ULTRANOVA

Novation made their name with hardware synths, and they recently returned to the fold with the UltraNova.

We do hope a software version is forthcoming, à la V-Station....



EX-MARKS

Popular bookmark-syncing service Xmarks is to shut down. With many browsers now offering bookmark syncing (albeit in an app-specific manner) and Xmarks' attempts at diversifying having failed to catch on, they've decided to quit while they still can.

THE CM FACTOR

Get your tunes on the **cm** DVD with The **cm** Factor! It kicks off every Tuesday on our Facebook page (bit.ly/9HpW67). Enter your tune and vote for others' tracks with the 'Like' button. Each issue, our favourite winner appears on the **cm** DVD.

DUKE NUKEM 4 EVA

Last year's news that *Duke Nukem Forever* had been shelved left us fumbling aimlessly through life, bumping into objects, muttering 'Where is it?' every few minutes.

Imagine our joy, then, upon hearing that Gearbox Software plan to release *DNF* in 2011!

THEY JUST DON'T GET IT

Microsoft's Windows Phone 7 advert doesn't quite have its intended effect on us - we actually *like* being that guy who nearly gets flattened by a bus because he's too busy fiddling with NanoStudio. bit.ly/9FNBYD



VERY VOCAL

We've seen some unintentionally comical promo videos over the years, and now we've another to add to the list: that for Sonivox's forthcoming Vocalizer plug-in. To see two grown men getting far, far too excited over said product, browse to bit.ly/aZkd3G.

Busting jargon



Computer music terminology explained. This month: **Compression**

Along with EQ, compression is the 'bread and butter' of mix engineering. Whereas EQ adjusts frequency balance (bass, treble, etc), compression manipulates the way in which the level of a signal varies over time, which is what we call the audio's 'dynamics'. The basic controls on a compressor are attack and release time, threshold and ratio. These can be hard to grasp at first, but there's a classic analogy that should help...

Imagine listening to music with your hand on the volume knob, ready to turn it down if it gets too loud. When this happens, you could turn the knob quickly (fast attack) or slowly (slow attack). Once the loud passage in the music is over, you'll turn the volume back up - again, you could do it quickly (fast release) or slowly (slow release). This reduces the

'dynamic range' of the audio - that is, the level difference between loud and quiet parts.

A real compressor works much like our example, using a detector circuit that tracks the incoming

level and adjusts the outgoing level as necessary. Because a real compressor can react more quickly and accurately than any human, it can respond to individual drum hits, for example.

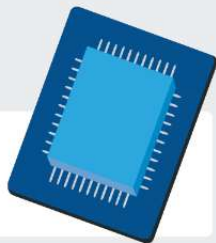
But how do we decide what is 'too loud'? That's what the threshold is for: once the signal passes the threshold level, the compression starts to act.

Ratio is a little less obvious. With a ratio of 2:1 and an input signal that exceeds the threshold by 10dB, you'll get an output signal that's only 5dB above the threshold. With a ratio of 10:1, that same signal would leave the compressor at just 1dB above the threshold. Lower ratios will therefore retain more of the original signal's dynamics, which may or may not be desirable.



Softube's Tube-Tech CL 1B sports the classic compressor control set and not much else. It sounds fab, though

System check



Weird and wonderful goings-on in the wider world of computing

GALAXY HIGH

Apple's iPad could have some serious competition in the form of the imminent Samsung Galaxy Tab. This enticing machine is smaller and lighter than the iPad, but has the same speed processor (and in fact uses the same Cortex-A8 CPU core) and twice the amount of RAM. It also supports up to 32GB removable storage, unlike Apple's device, which relies on its fixed internal space. The device will run version 2.2 of the Android operating system (Froyo), and offers Wi-Fi and 3G wireless connectivity.

In a recent demonstration in Japan, the device was shown wirelessly integrating with all manner of household objects, including an oven, a tumble dryer and a fridge. A gadget that potentially enables us to start cooking dinner whilst simultaneously adjusting EQ settings is our idea of heaven.

www.samsung.com



Could Samsung's Galaxy Tab give the iPad a run for its money?

SOFT OPTION

Here's something that's bound to get techies' tongues wagging: Intel have begun offering software-based 'upgrades' for their hardware. Customers in selected test markets in the US are being offered a \$50 card/voucher that allows them to download software to unlock unused threads and cache on their Pentium G6951 processors. Though the idea of having to fork out extra to fully enable the hardware that's already in your machine might seem repellent, the plus side should be more affordable kit for those who don't need the extra power, and maybe lower prices all round, as it should be cheaper for Intel to produce one do-it-all chip and simply lock out features to create the low-end versions.

www.intel.com

LIGHT FANTASTIC

Boffins at the University of California Santa Cruz have developed a tiny optical device built into a silicon chip that's capable of reducing the speed of light by a factor of 1200. Although increasing the speed of light would impress us even more, the breakthrough is important because the ability to control light pulses is a big step towards the creation of all-optical quantum communication networks. In other quantum computing news, a team from the Centre for Quantum Photonics at the University of Bristol have made a chip that uses light instead of electricity and could "pull important information out of the biggest databases almost instantaneously". We're not sure if this will be enough to help Windows index our samples any faster, but we're willing to try anything.

www.ucsc.edu

www.phy.bris.ac.uk/groups/cqp

Get with the programmers

Garritan's eponymous founder speaks to **cm** about sampling and the company's future



Garritan

Gary
Garritan

cm Can you give us a brief overview of your achievements?

GG "The biggest accomplishment has been to democratise sampling. Garritan Personal Orchestra made it possible to bring orchestral sampling to almost all musicians. Our Orchestral Strings library was the first 'super library' and it revolutionised the industry in 2001 - it introduced the first MIDI performance tools (legato, auto-bow-strokes and repetition) and dynamic multilayer crossfades. We also pioneered the integration of sampling with notation programs such as Finale & Sibelius."

cm Do you think physical modelling can ever replace sampling?

GG "Until recently, sample-based methods have been the most realistic but

advances in physical modelling and other simulation methods are getting very close. This is an area we're actively focusing on and we are doing research and development with new and innovative processes."

cm Why did you develop your own Aria sample playback engine?

GG "With other samplers, we were developing to a predetermined architecture. We needed the freedom and flexibility to develop things that were not possible with other samplers. For example, our first Aria-based product - the Authorized Steinway Piano, done in partnership with Steinway & Sons - required features we had to develop ourselves. It was not possible with other samplers to do the type of sustain and sympathetic resonance techniques we wanted to incorporate. We partnered with Plogue Art et Technologie, Inc to program a sample engine that was flexible and powerful and that could fulfil our needs."

cm Do you have any interest in synth technology, drum machines, etc? Did you experiment with these with your MIDI harp?

GG "My MIDI harp is what got me interested in sampling over 20 years ago. I made some wild sounds for it. Traditional instruments represent most of mankind's history and experience with music. But new sounds have always created new genres of music. We are working on some interesting projects that are very unique and exciting."

"New sounds have
always created new
genres of music"

cm Last year, you acquired the technology behind the discontinued Giga line from Tascam. Where's that going?

GG "We are still working on it and it has been more difficult than we imagined. There is not much I can say as to which - if any - Giga products may eventually make it to market. There will definitely be Giga technology, IP and rights that are making their way to Aria."

cm What's coming next from Garritan? And what happened to the Stradivari Violin and Gofriller Cello libraries?

GG "A World Instrument library containing some 350 different ethnic instruments will be released this year. A Stradivari violin and Gofriller cello, along with other solo strings, will be included in a new advanced string library that we are working on. We have a few other libraries in the works too."

Avid roll out Mbox 3



The Mbox Pro

➤ Avid have announced the Mbox 3 series of Pro Tools production packages. The revised Mbox, Mbox Pro and Mbox Mini offer plenty of new features, with Avid citing better analogue circuitry and "high-performance" converters.

"Artists at all levels can more easily create, mix and record with professional results"

Avid

The Mbox and Mbox Pro have a soft-clip input limiter, built-in DSP reverb, guitar tuner and an assignable Pro Tools multifunction button. The FireWire Mbox Pro's extra features include more monitor control dials and word clock. Connectivity-wise, the USB Mini has two ins (one with mic pre) and two outs; the standard USB Mbox has four ins (two mic pres), four outs and MIDI I/O; while the Pro model features 8 ins (four mic pres) and two headphone outs.

The Mbox Mini is £245, the Mbox is £425, and the Mbox Pro is £550. All work with PC or Mac and come with Pro Tools LE software.

www.avid.com

Soundware news

➤ Banish the winter blues with Afro Brazil Parade (£25) from Latin fusion act Da Lata. It contains 400MB of "sun-drenched samples" including "infectious" bass grooves, beats, guitar and percussion loops, keyboard parts and FX.

Groove Tech (£35) is a 900MB pack embodying "the new sound of Ibiza and the freshest house sound of the year". It contains 500 bass, drum, chord and filter loops and 400 FX, synth, bass and drum sounds.

If you'd like to wage war on the dance floor, Industrial Strength's Drop (£14) will back you up, with 135 24-bit "sub-slamming" FX including sweeps, decays, kick booms, and "unfathomably deep sub-bass bombs".

www.loopmasters.com

Get dirty with Bunker 8's Symphonic Dubstep (£20), which combines "the incessant energy of dubstep and the epic scope of symphonic arrangements" to create 12 construction kits crammed with 4.1GB of content. From "lyrical woodwind" and "resonant horn" passages to "razor



beats and wobbly basslines", Bunker 8 say these sounds will sit well in both dancefloor destroyers and Hollywood scores.

Very much the opposite is Sony's Twine: Build (£20), which offers "an alchemical fusion of electronic and acoustic elements". The 341 loops include "atmospheric guitars, haunting pianos, mangled melodies and twisted vocals" as well as basses, FX, rhythms, drones and one-shots for your best experimental tracks.

www.soundstosample.com

Drill (£20) is a military SFX library with over 4000 samples of battlefield radio comms, "bone-crushing" drill instructor commands, morse code and more. This ain't for the easily offended!

www.sonokinetic.com

An oddity here: Puremagnetik have sampled the cult Suzuki Omnidirect and presented it in Live, Logic and Kontakt formats. It's currently free for Puremagnetik subscribers; the rest of us will be able to pick it up for \$12 once it's on general sale.

www.puremagnetik.com



News in brief

MOTU GET MICRO

MOTU have released the tiny MicroBook audio interface, which turns a Mac or PC into "a 4x2 recording studio with all the audio I/O and mixing needed for pro-quality recordings". Small enough "to fit in your pocket", the MicroBook has 4x8 physical I/O channels, a preamp-equipped mic input with phantom power, a 10-bus mixer, 7-band EQ, compression and more. It costs £259.

www.motu.com



LORN CREDIT

You may remember last issue's interview with troubled doomstep producer Lorn. Accompanying the article were a selection of appropriately dark and mysterious photos, but unfortunately we forgot to credit Lorn's photographer, Nathan Osterhaus, for these pictures. So apologies for that, Nathan - and, indeed, any readers who might have been wondering who the talented lensman responsible was.



COMPOSE TO WIN

If you fancy yourself as a songwriter, check out Point Blank's competition, which celebrates its new partnership with SoundCloud. Top writer/producer Jony Rockstar - who's helped Alicia Keys, Lily Allen and Sugababes into the Top 10 - has provided a backing track. Upload your song by December 31 for a chance to win a place on Point Blank's Songwriting course, a studio day with Jony and more.

www.pointblankonline.net

COMPETITION WINNERS

In cm156, we had two incredible prize bundles up for grabs, each containing every single u-he product: Zebra, Uhbik, ACE, MFM2 and FilterScape. The two lucky winners of this enviable prize are Keith Halford and Steven Separovich. Congrats, chaps!

The generosity doesn't end there, though - turn to p94 to find out how you could win superb Slate Digital software!



touchAble brings deeply comprehensive wireless control of Ableton Live to your iPad, whether your DJing, composing or producing

App watch

New music-making apps for iPhone/iPod Touch

> If you're after an iPad controller app for Ableton Live 8, try AppBC's touchAble. More than just a clip launcher, it works over Wi-Fi to give access to Live's instruments, mixer and FX, as well as unlimited tracks and parameters, and full automapping.

Clip-wise, you can do the basics (launch, loop, stop, etc) as well as mess with their parameters. For live mixing, the Mixer screen features an XY pad for controlling volume, panning, master settings and more. Output meters provide feedback on track levels to help avoid clipping. If you're not alone on stage, Dual-User mode will be handy - it lets you tweak one set through two iPads.

touchAble also enables you to compose live via its keyboard and drum pads. The 17-note keyboard has a touch-and-scroll octave selector and two velocity modes, Range and Global. Range mode is pretty nifty: it provides "five velocity steps within the same key". Touch the key at its top for low velocity and hit it at the bottom for maximum noise. The drum pads - which can be displayed in grids of either eight or 16 - also have the two velocity modes.

touchAble is available for iPad in the App Store now and costs £9.99.

www.touch-able.com



NLog MIDI Synth turns your iOS device into a powerful virtual synth, complete with MIDI input

Tempo Rubato's NLog MIDI Synth app makes a "real synthesiser out of your iOS device". An extended version of the Nlog Synthesizer, it adds MIDI support via the Line 6 MIDI Mobilizer interface, enabling you to connect your iPad, iPhone or iPod Touch to an external hardware keyboard.

The on-screen virtual keyboard provides "polyphonic real-time response", while Double Manual mode offers two 'boards on-screen at once. Editing options include two oscillators, three envelopes, two LFOs, filters, effects, and pitchbend and mod wheels.

NLog MIDI Synth is available for iPad, iPhone and iPod Touch in the App Store now and will set you back £5.49.

www.temporubato.com



Game overture

The latest happenings in the world of video game music production

> It seems like it's impossible to get away from *Halo: Reach* news at the moment, and this column is no exception! The prolific and high-profile game soundtrack label Sumthing Else have announced the release of Martin O'Donnell and Michael Salvatori's score as an epic two-CD set.

Here's O'Donnell: "We've been composing and producing music for Bungie's *Halo* universe since 1999 and this soundtrack represents the culmination of our efforts. Once again we were able to work with other composers C Paul Johnson and Stan LePard, along with recording much of this music at Studio X in Seattle with the Northwest Sinfonia and Choir. This is about two hours' worth of music culled from more than five hours of music actually produced for the game itself. We hope everyone enjoys it."

Although it's drawn criticism from some quarters for its lack of memorable motifs,

"A quick recommendation: check out the game soundtracks and other music available at Attract Mode"

we reckon you'll find this evocative score just as enthralling as the music from previous titles in the *Halo* franchise. Have a look at www.sumthing.com for more.

Before we shoot off for this issue, here's a quick recommendation: check out the game soundtracks and other music available at Attract Mode. It's a website billed as a "video game culture shop", which means lots of brilliant limited-edition content by indie creators - in this modern age of faceless consumerism, it brings a personal touch! We'd love to see more soundtracks on there, though, so what are you waiting for, indie game composers? Check it out at www.attractmo.de.



Can't get enough of *Halo: Reach*? Then make it the soundtrack to your life with the splendid set of (high) scores available via Sumthing Else



Drive time

Trafik

John Elliot of the famed UK house duo clues us in on their top five bits of software

STEINBERG CUBASE 5

"We've used Cubase as our DAW of choice for writing music since, well, a long time ago - let's put it that way. Realistically, I'm sure we could use any environment and achieve similar results, but for us, Cubase feels like home. The new version is rock solid and that's all we ask for."

UNIVERSAL AUDIO FATSO

"To be honest, I could have listed any number of Universal Audio plug-ins but this one particularly stands out. We've used the Empirical Labs FATSO in hardware form ever since it came out and this emulation is stunningly accurate. Whether you want to warm up a synth sound or slam a drum group, it's perfect."

KORG LEGACY COLLECTION

"There was a time when Korg undoubtedly made the best synthesisers around, and the MS-20, WaveStation and Polysix would probably be up there as the best of what they've achieved. The plug-in versions are very accurate and sound pretty fat when compared to the originals. The MS-20 is a particularly strong synth."

Trafik's new album, *None But The Brave*, is out now
www.trafikmusic.co.uk

ACCESS VIRUS TI

"Not software through and through, I know, but the level of control for synth programming you can achieve by having software control like this is next level stuff. A lot of purists would argue 'hands on control is key', but for me, the ability to control hardware via computer like this is fine."

"I'm sure we could use any environment and achieve similar results but for us, Cubase feels like home"

SOUNDTOYS DECAPITATOR

"There is no plug-in distortion that even comes close to this, in my humble opinion. There's a massive range of achievable effects - anything from adding slight dirt to a vocal to totally destroying a sound out of all recognition. Again, I could have picked any of SoundToys' plugs, but this is the king for me."

COMPUTER music 10 years back

We think back to the chilly winter of 2000 to revisit a **cm** from days gone by

> In a striking coincidence, the vintage edition of **cm** we're scrutinising this time around proudly presents exactly the same cover feature topic as last issue: Remix! While the music industry has changed completely since those days, the main incentive to remix - to get your sound out there and catch the ear of record labels and ravers alike - has not.

Back in **cm28**, we pushed the following approach to getting a break: "Try calling into a recording studio and speaking with the producers - if you're a smooth talker

"Dusty old DAT is now a distant memory, and not one that we like to revisit often"

and very lucky, you could end up walking out with a DAT to remix". In fact, we splurged a whole box's worth of text going on about how DAT was the only format to use "if you're serious about taking on remixes". Dusty old DAT is now a reassuringly distant memory and not one that we like to revisit often.

Our round-up of MIDI interfaces saw us correctly predicting that USB was the future for peripherals, but not without stating that USB 1's speed of 12Mbps was "fast enough for most uses". Not sure how far we'd get on that nowadays.

And finally, **cm28** had us salivating over the soon-to-be-released Reason: "Apparently, the patch leads 'swing' when you flip the racks round". It didn't take much to impress us back then.



Remix? Don't mind if I do! And if you were feeling very brave, you could use n-Track studio 1.2 to do it

Komplete 7 Players

If you like the look of Native Instruments' wares but don't want to splash any cash, this bundle has your name on it



Developer Native Instruments
Format PC RTAS/VST/standalone, Mac AU/RTAS/VST/standalone.
Web www.native-instruments.com

Audio software giants Native Instruments already offer free versions of some of their products, and now their Kore 2 Player and Kontakt 4 Player have been joined by Reaktor Player and Guitar Rig 4 Player. Reaktor Player comes with three instruments and Guitar Rig 4 Player includes 20 effects. All are available as a single downloadable pack, Komplete 7 Players. We talked to Sascha Kubiak, Director of Native Instruments' Producer Division, to find out more.

What was the thinking behind the new players?
 "Reaktor and Guitar Rig have become versatile synthesis and sound-processing platforms, so we wanted to open their tech up to more people. The players allow us to develop affordable individual instruments and effects that draw on all the sonic power of Reaktor and Guitar Rig without requiring people to own full products. Guitar Rig is opening up into a universal effects platform, as you can see from additions like the Reflektor studio convolution reverb."

So the players will become platforms for commercial content?

"Yes. With products like Reflektor we're majorly moving forward into the studio effects market, so expect more of this sort of thing from us."

Do you have any tips for Komplete 7 Player?

"I don't have any specific tips apart from really exploring the included presets and all of the sound-shaping options, which might take quite a while! The next step up from Komplete Player is the new Komplete 7 Elements package, which adds 2000 additional sounds that were selected from the arsenal of the full Komplete 7 bundle."

Will NI be issuing more freeware in the future, or releasing updates for Komplete 7 Players?

"With Kontakt, Kore, Reaktor and Guitar Rig, our line-up of free player versions is now complete. Together they cover all the bases of synthesis, sampling and effects processing. But we will definitely come up with more free material in the future. Christmas is a good opportunity!"

You can download the Komplete 7 Players Bundle or its individual elements from www.native-instruments.com. **cm**

Freq Like Me

After last month's handy MUtility plug-in, MeldaProduction have unleashed yet another cool freebie effect: MFreqShifter. Unlike a pitchshifter, this frequency-shifting effect doesn't maintain harmonic relationships and so can be used to create everything from subtle stereo expansion to total sonic carnage. Try it if you dare! MFreqShifter is available as a Mac AU/VST and PC VST plug-in. www.meldaproduction.com

Zen Party

It's been looming on the horizon for more than a little while now, but Big Tick's handy-looking universal preset manager Zen has finally been launched. Arriving just too late for full inclusion in this issue, Zen is available as a Windows VST. Be sure to check out the next issue of cm, where we'll take an in-depth look at this unusual utility and let you know whether or not it was really worth the wait. www.bigtickaudio.com

Bongo Crazy

If you're a Windows user who just can't get enough bongo action, you're going to want to check out Otobongo from Mildon Studios. This peculiar percussion instrument automatically varies the location and intensity of the tap each time you trigger it. So if you want to take your tracks to the jungle and then out into space, Otobongo could well be the one for you. The instrument is available in PC VST format. www.mildonstudios.com



Freeware Classic Oatmeal

Developer Fuzzpilz
Format PC VST
Web www.bicycle-for-slugs.org

This classic virtual analogue synth is a bit of an underappreciated gem, probably due to its hard-to-decipher, oatmeal-coloured interface. Inviting it ain't, but Oatmeal's impenetrable front-end hides a synth with some unusual and interesting features.

A two-oscillator polysynth, Oatmeal gives you a choice between various standard virtual analogue waveforms, including a user wave that can be drawn in using a simple display. As well as a standard pulse width modulation mode, there's also a 'user

"Oatmeal's impenetrable front-end hides a synth with unusual features"

PWM' mode, where the user waveform is inverted and shifted according to the PWM settings.

Oatmeal includes two multimode filters, each of which can be set to one of 15 modes and linked so that the second filter clones the first.

Another cool feature is the ability to modulate the pitch of the synth via aftertouch, which makes it an extremely expressive instrument for keyboard players. It's also possible to assign a random pan position to each voice, which can make for some interesting stereo effects.

Oatmeal is a great plug-in that remains something of a cult favourite, and is definitely worthy of serious investigation. If you fancy giving Oatmeal a try, then we recommend checking out the alternative skins. Whereas with most instruments optional skins aren't particularly useful, with Oatmeal they help to make the interface clearer and easier to operate. You can find link to a great number of Oatmeal resources at www.kvraudio.com/forum/viewtopic.php?t=133930.

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Zoom H1 Bundle

Mobile digital audio recorder

24bit/96kHz linear PCM, real X-Y mic arrangement, built-in monitor speaker, auto recording level, lo-cut filter, time-stamp, track mark function, A/D and D/A conversion, 128 times oversampling, recording media: micro SD memory card and micro SDHC memory card (up to 16GB), USB 2.0, incl. 2 GB micro SD card, windshield and USB cable, bundle incl. the t.bone EP 2 dynamic earphone.

€ 88.- **€ 83.-**

order code 253718

M-Audio MicroTrack II

Mobile 24bit/96kHz recorder

Records WAV, BWF and MP3 to Compact Flash cards or Micro Drives, optimized gain adjustment, 48V phantom power, analog limiter, USB 2.0 connection, balanced line ins, built-in high-fidelity microphone preamps, S/PDIF input, lithium-ion battery (recharge via USB).

€ 133.- **€ 113.-**

order code 184184

Tascam DR-07

Mobile digital audio recorder

Record and play mp3 (up to 320kbps) and WAV files (up to 24bit), 44.1/48kHz, built-in stereo mic, analogue automatic level input control, analog limiter, stereo in for external mic, stereo line input, headphone/line out (stereo mini-jack), USB 2.0, powered via AA alkaline or NiMH batteries, includes 2GB SD Card and windshield.

€ 139.- **€ 118.-**

order code 223287

Zoom H2 Bundle

Mobile mp3/WAV recorder

1-point stereo mic design, MS stereo technique, record 360° sound as 2ch or 4ch data, built-in USB interface with audio interface function, WAV 96/48/44.1kHz and MP3 up to 320kbps VBR, headphone out, uses SD cards (up to 4GB), perfect for interviews, podcasts, meetings and live recordings. Includes USB cable, stand, mic-stand adapter, power supply and 512MB SD card. Bundle includes the t.bone HD660 headphones.

€ 173.- **€ 147.-**

order code 137629

Olympus LS-5

Portable digital recorder

24bit/96kHz, WAV, WMA, MP3 and PCM recording, built-in microphone, large back-lit display, 2GB internal memory, SD/SDHC card extension slot, internal stereo speaker, USB 2.0 connection, optional remote control, dimensions WHD: 4.8 x 13.15 x 2.24cm, weight: 165g (incl. battery).

€ 179.- **€ 152.-**

order code 250006

Eidiol R-09 HR 4GB SD Card Bundle

24bit/96kHz mp3/WAV recorder

Up to 320kbps mp3 playback and recording, recording on SD or SDHC card (up to 8GB), integrated stereo condenser mic, OLED display, built-in preview speaker, incl. wireless remote control with split function, USB 2.0, stereo mic in, stereo line in, incl. power supply, 512MB SD card, USB cable, Cakewalk Pyro AudioCreator LE, wireless remote controller and small table mounting plate. Bundle incl. 4GB SD card.

€ 279.- **€ 237.-**

o. code 207377

Sony PCM-M10

Portable 24bit/96kHz audio recorder

Built-in stereo microphone, internal speaker, cross-memory recording, internal 4GB flash memory + MicroSD/memory stick memory slot, limiter and low-cut filter, 5s. pre-record buffer, manual or automatic recording level control, USB-2.0 connection, includes power supply, Soundforge Audio Studio LE, cable remote, 2 AA batteries and cable, finish: grey.

€ 325.- **€ 276.-**

o. code 238886

Zoom H4 N WIZOO Bundle

24bit/96kHz digital recorder

Perfect for interviews, podcasts, meetings and live recordings. 2 built-in stereo microphones, requires 24V or 48V phantom power, USB port. Includes windshield, USB cable, cover and Cubase LE4. Bundle includes 4GB SD card, Superlux HD681 stereo headphone and WIZOO Publishing, 'Mobile Recording' Thomann Special Edition by Kai Schwirzke.

€ 339.- **€ 288.-**

o. code 232016

Zoom R16 Bundle

USB audio interface and DAW controller

16-track playback and 8-tracks recording, 24bit/48kHz PCM recording, internal stereo condenser mic, 8 mic ins, 2 outs, 8 balanced XLR / 1/4" TRS connections, internal effects, Mackie Control emulation via USB, works as USB storage, support for Win XP/Vista and Mac OS, incl. Steinberg Cubase LE4 and 1GB SD card. Bundle incl. the t.bone MLS66 stereo headphones and 4GB SD card.

€ 369.- **€ 314.-**

order code 245233

Zoom R24 Bundle

Digital recorder

24-track playback and 8-track recording simultaneous, 24bit/96kHz, 8 ins and 2 outs, built-in stereo mic, compressor/EQ, tuner and metronome, support SDHC cards up to 32GB, USB 2.0, 6x XLR-/TRS-Input Mic/Line/Hi-Z, headphone out, incl. Steinberg Cubase LE, 1GB SD card, USB Stick (2GB with Drum Loop Library), power supply and cable. Bundle incl. the t.bone SC400 studio microphone, the t.bone HD-800 stereo headphones and cable.

€ 515.- **€ 438.-**

o. code 253669

the t.mix Mix 502

5-channel mixer

1x mic in with 2-band EQ, 2x stereo ins, 2-track I/O, 1/4" balanced jack out. Dimensions: 13.8 x 22 x 2.8-4.5cm. Weight: 0.8kg

€ 31.- **€ 26.-**

order code 207200

the t.mix Mix 802

2x mic ins with 3-band EQ, 2x stereo ins, 2-track I/O. Dimensions: 19.3 x 26.8 x 2.8-4.5cm. Weight: 1.2kg

€ 46.- **€ 39.-**

order code 207202

Alesis Multimix 4 USB

4-channel mixer with digital output

16bit, 44.1kHz signal on USB, 4 line level ins, 2 XLR ins with gains and switchable 48V phantom power, high impedance guitar input, 2 channel EQ on mic ins, multicolor LED metering, main and headphone outs with independent level controls, incl. power supply, dimensions WHD: 15.2 x 19.6 x 5cm, weight: 0.6kg.

€ 88.- **€ 83.-**

order code 235244

Behringer RX1 602 Eurorack Pro

16-channel line mixer in rack format

16x balanced line inputs, extremely noise-free ULN design, transparent sound, balance and volume control per channel, monitor/FX send, mute and clip LED, stereo jack output, headphone out with separate volume control, ALPS pots, shielded transformer, very solid construction.

€ 115.- **€ 98.-**

order code 163892

Behringer Xenyx X1204 USB

12-channel mixer

4 mic ins, 48V phantom power, lowcut, internal 24bit FX with 16 presets, built-in USB sound card, 2 stereo ins, 3-band EQ, 2 aux, peak LED and mute each channel, XLR main out, internal power supply, incl. 19" rack kit, dimensions WHD: 9.7 x 27 x 32.8cm, weight: 2.8kg, incl. energyXT2.5 compact music production software for Win XP, Vista (32bit), Mac OS X and Linux.

€ 169.- **€ 144.-**

order code 243148

Allen & Heath ZED-10FX

Mixer

4 mic/line ins, 2 dual stereo ins, DuoPre™ preamp, 2 aux sends, USB send/return, internal 24bit FX processor, HP-filter, stereo return, 2-track return, main insert, internal power supply, weight: 3.3kg, incl. Cakewalk Sonar LE.

€ 275.- **€ 234.-**

o. code 246916

Allen & Heath ZED-10

without FX processor.

€ 219.- **€ 186.-**

order code 246915

the t.mix 1832 FX

Rack mixer

18 channels, 6 microphone inputs, 4 stereo inputs, built-in USB/MP3 player, 24bit DSP effects unit with 256 programs, 9-band EQ, 3-band EQ with parametric mids (channels 1-4), 4-band EQ (channels 5-12), 2-track I/O, 4 aux outputs, dimensions: 41.5 x 40 x 11.5cm, weight: 6.7kg.

€ 275.- **€ 234.-**

order code 242617

Soundcraft EFX 8

8-channel mixing desk

8x mono inputs, 2x stereo inputs, inserts on all channels, 1x FX send, 1x aux send (pre/post), 48V phantom power, solo/mute switch, integrated Lexicon FX with 32 presets, peak LEDs on all channels, integrated power supply. Dimensions: 33 x 9.1 x 36.2cm. Weight: 4.6kg. Optional rackmount available.

€ 285.- **€ 242.-**

order code 118879

Behringer Xenyx X2442 USB

24-channel mixer with 60mm faders

10 mic ins with 48V phantom power, 75Hz low cut, compressor, 24bit multi FX with 16 presets, internal USB sound card, 4 stereo ins, 3-band EQ with parametric mids, 4 aux (pre/post), insert, Peak LED and mute each channel, 2-track I/O, XLR main out, 4 sub groups, internal power supply, includes 19" rack kit and energyXT2.5 compact music production software.

€ 309.- **€ 263.-**

o. code 242913

Yamaha MG 166cx

16 channel mixer

8x mono mic/line ins (XLR/jack), 2x mic/line ins (XLR/stereo jack), 2x stereo line ins (jack), 3x aux sends, 8x inserts, 3-band EQ with parametric mids, internal compressors per mic channel, SPX FX processor with 16 programs, 18dB high pass filter, high-end mic preamps, 48V phantom power. Dimensions: 47.8 x 10.2 x 48.9cm. Weight: 5.5kg

€ 358.- **€ 304.-**

order code 115511

Alesis MultiMix 16 FireWire

16ch. mixer with FireWire interface

8x mic/line ins, 4x balanced stereo line ins, 3-band EQ per channel, 2x aux send/returns, 100x 28bit FX programs, headphone out, FireWire interface: 18 ins, 2 outs, 24bit/48kHz, ASIO/WMIO drivers for Win XP SP2, Core Audio drivers for Mac OS X, includes Cubase LE.

€ 389.- **€ 331.-**

order code 186079

Yamaha MG 32/14FX

32-channel live mixer

24x mic ins, 4x stereo ins, 2x SPX-quality FX processors, 7-band master EQ, 2x aux sends, 2x stereo returns, 24x inserts, 3-band EQ with parametric mids, 18dB low cut filter, 48V phantom power, internal power supply. Dimensions: 102.7 x 14 x 55.1cm. Weight: 20kg

€ 1066.- **€ 906.-**

order code 161994

Mackie Onyx 32.4

Live mixer

28x mono ins, 4x subgroups, 3x outs, 4-band EQ with fully parametric mids and fixed lo/hi, 30dB pad, low cut, 6x aux sends, LED and insert per channel, 6x2 matrix, internal compressor/limiter, D-Sub 25 direct out, talkback, phones out, main insert, internal power supply. Weight: 21.8kg

€ 1150.- **€ 978.-**

order code 194635

Phonic Summit

Digital mixer

16 channels, 24bit/96kHz, phantom power, 17x 100mm motor fader, touch screen, 26 semi-parametric 4-band-EQ for all inputs, AES/EBU I/O, 8 multi-function outs, 2 effect processors, 26 dynamic processors, SD card, optional Expansion Rack compatible with Win XP/Vista/7 and Mac OS X (incl. Snow Leopard), ext. power supply, weight: 10.5kg, incl. 19" rackmounts.

€ 1639.- **€ 1393.-**

order code 246336

Presonus Studioline 16.4.2

16-channel digital mixer

Built-in 32x18 FireWire audio interface, 'Fat-Channel' processing with 4-band EQ, compressors, limiters and gates. 16x inputs, 6x auxiliary mixes, 4x subgroups, 16x Class A XMAX mic preamps, 44.1kHz & 48kHz sample rate, 2x master DSP FX, talkback. Dimensions: 43.7 x 17.5 x 56.8cm (WxHxD).

€ 2169.- **€ 1844.-**

order code 225534

Mackie DXB200 Refurbished Bundle

Digital open architecture mixing desk

72ch/96kHz (36ch/192kHz), 8 busses, 2 touch screens, 25 motorised faders, 4-band EQ, compressors and gates, VST plug-in compatible, 2 PCI slots, flexible I/O, 9 slots for optional I/O cards (not included in basic config), Mackie Control Universal mode for DAW control. Bundle incl. Xbus AES card, Xbus digital card and 2x Xbus line card. 8-Stock with full warranty!

€ 3869.- **€ 3289.-**

order code 251867

www.thomann.de

Telephone Hotline: +49 9546 9223-55

Fax: +49 9546 9223-24

Miditech Midistart 3 USB

MIDI keyboard
49 full-size touch sensitive keys, pitch bend and modulation wheels, USB port for direct connection to Mac/PC, MIDI out, includes USB cable and Magix Sampletime SE PC software. Finish: Silver



order code 116317

€ 65.-
£ 55.-

M-Audio Axiom 25

Master keyboard
25 velocity sensitive semi-weighted keys with assignable aftertouch, 8 MIDI assignable trigger pads, 8 MIDI assignable rotary encoder knobs, 6 transport buttons reassignable to other MIDI parameters, preset / program change / MIDI channel +/- buttons, sustain and expression pedal jacks, built-in USB MIDI interface, powered via USB bus or optional power supply. Compatible with Win XP and OS X.



order code 190173

€ 175.-
£ 149.-

Thomann SP-5100

Stage Piano
88 hammer action keys, 20 sounds, 20 styles, 60 songs, dual mode, split mode, metronome, DSP, transpose function, headphone output, stereo aux output, stereo aux input, MIDI in/out, USB port.



order code 154090

Thomann SPWS-5100

Wooden stand for SP-5100

order code 154141

€ 315.-
£ 268.-

€ 46.-
£ 39.-

Thomann SP-5500

Stage piano
88 hammer action keys, 559 sounds, 203 styles, 3 user styles, 100 songs, 64-note polyphony, accompaniment control (start/stop, sync start/stop, fill-in A/B, fade), dual mode, split mode, DSP transpose function, lesson function, pitch bend, headphone out, stereo aux I/O, MIDI I/O, USB port. Finish: Silver Grey



order code 154087

Thomann SPWS-5500

Wooden stand for SP-5500

order code 204071

€ 377.-
£ 320.-

€ 46.-
£ 39.-

Korg SP-170

Stage piano
88 natural weighted hammer action keys, 2x9W built-in speakers, 10 sounds, effects: reverb and chorus, key transpose and pitch control, 2 line/headphone outs, MIDI out, dimensions: 131 x 32.5 x 13.3cm, weight: 12.1kg.



Black

order code 242228

White

order code 242231

€ 529.-
£ 450.-

€ 529.-
£ 450.-

Yamaha PI 55

Stage Piano
88 graded hammer action keys, pure CFIII piano voice, 17 voices, polyphony 128 voices, dual and split mode, metronome, 2 headphone outs, 2x 12W, includes note stand, FC-4 pedal and PA301 power supply, weight: 18.6kg.



Black & ebony

order code 223258

Black & mahogany

order code 223244

€ 1135.-
£ 965.-

Kawai ES 6

Stage piano
88 keys, 32 sounds, 192-voice polyphony, 100 rhythms, transpose, intonation, string response, brilliance, dual/split mode, 2-track recorder, metronome, 2 headphone outputs, MIDI I/O, line I/O, USB-host. Includes F10H sustain pedal, power supply and music rest.



Finish: Black

order code 218136

Finish: Silver

order code 218137

€ 1150.-
£ 978.-

Roland FP-4

Compact digital piano
Speaker system, 88 PHA Alpha II keys, 128 voices, 333 sounds and 9 drum sets, GM2 system, 3-track recorder, 1/4" jack I/O, 2x 1/4" TRS stereo headphone outs, USB, MIDI I/O, foot pedal inputs (damper, soft, sostenuto), DC in (9V AC power supply). Dimensions: 134.2 x 30.5 x 13.5cm (WxDxH). Weight: 15.3kg. Finish: Black



order code 112451

€ 1199.-
£ 1019.-

Clavia Nord Electro III

Stage keyboard
Based on authentic emulations of Hammond B3 and electric pianos, Nord sample library support, flash memory for 256MB samples and 126 programs, new effects and amp emulations, compressor and EQ.



61 waterfall keys

order code 220551

73 waterfall keys

order code 220582

€ 1577.-
£ 1340.-

€ 1725.-
£ 1466.-

Clavia Nord Stage 88 EX

Stage piano
88 weighted keys with aftertouch, 3 split zones, organ section with Hammond B3, Vox Continental and Farfisa organs, piano section with Grand Piano, Rhodes, Wuritzer, Höpner Clavinet and many more, large effect FX, 256 MB memory for piano samples.



order code 219785

€ 2959.-
£ 2515.-

Doepfer Dark Energy DVD Bundle

Expander
Monophonic stand-alone analog synthesizer with USB and MIDI interface, USB, MIDI input, 4 CV outputs, 1 gate output, external power supply, dimensions: WDH: 18.5 x 14.5 x 6.5cm, weight: 1.2kg. Bundle including german video tutorial DVD "Hands on Synth Sound".

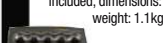


order code 245106

€ 375.-
£ 319.-

Neo Instruments Ventilator

Rotary Cabinet Simulation
Reproduction of a Leslie 122 Roto effect, rotor speed adjustable, drive section for real tube feeling, variable mic position of the virtual mics, true bypass, speaker simulation disconnectable for guitar amp, connection for remote footswitch/halfmoon switch, stop function with remote switch, power supply included, dimensions: 19.2 x 15.3 x 5.5cm, weight: 1.1kg.



o. code 237621

€ 377.-
£ 320.-

Korg M50-61

Synthesizer
61 velocity sensitive keys with natural touch, max 80 voices in single mode and 40 voices in double mode, EDS from Korg M3, large PCM-RAM (256MB), 640 programs and 512 combinations, 16 tracks and programs per combination, large TouchView display, 5x inserts, 2x master FX & 1x total FX with 170 effects, virtual drummer with 1671 patterns, sequencer, SD Card slot, USB.



order code 217612

€ 966.-
£ 821.-

Yamaha Motif XS 7

88-key workstation
355MB Wave ROM, 128 voices, presets: 1024 normal voices + 64 drum kits, colour display, 4-part arpeggiator, 4 layers or splits in performance mode, sequencer, internal sampler, USB, Ethernet



order code 111124

€ 2099.-
£ 1784.-

Hammond XK-3C

Organ with 73 keys
11 presets x 12 banks + cancel, 2 sets, digital Leslie and Vibrato scanner, real dual tube amp for pre amplification and Leslie overdrive, Vase III sound generator, 10 reverb modes, MIDI in/out, line out, foot switch/Leslie switch, expression pedal, dimensions: LWH: 119 x 40 x 12cm. Weight: 18.5kg, finish: walnut.



order code 138158

€ 2444.-
£ 2077.-

Novation Launchpad B-Stock

Ableton Live/MIDI controller
Bi-directional communication, 64-button grid with colour-synced status feedback, scene control switchable to control volume, sends, muting and more, up to 6 units may be operated simultaneously, USB bus-powered, large rubber grips, autotap-enabled, includes Ableton Live 8 Launchpad version. B-Stock with full warranty (LEDs have slightly different brightness).



order code 253157

€ 115.-
£ 98.-

Behringer BCF 2000

DAW controller
8 motorised faders, 16 + 4 illuminated switches, footswitch connection, 32 user presets, MIDI I/O (useable as MIDI interface), LED display, generic USB MIDI supported (Windows® XP and Mac OS X™).



order code 168766

€ 155.-
£ 132.-

Native Instruments Traktor Kontrol X1

USB DJ controller bag bundle
Instant recognition by Traktor, software controlled backlit buttons, fits perfectly alongside a standard club mixer, super-intuitive loop and cue control section, 8 knobs and 8 buttons, push encoders, expandable (connect two X1s to control four decks), incl. Traktor LE, Kore2 Player (incl. selection library) and MIDI templates for controlling other DJ and performance software. Bundle incl. X1 Bag



o. code 243915

€ 199.-
£ 169.-

Native Instruments Maschine

Groove production studio
Pad controller, 16 dynamic pads with aftertouch, 2 backlit displays, 11 rotary knobs, 41 buttons, USB-powered, MIDI I/O, pattern-based sequencer with 64 patterns per group, step sequence programming and realtime recording, drum grid and piano roll editors, sampler, > 20 built-in effects, > 5GB sounds, PC/Mac.



order code 223060

€ 535.-
£ 455.-

Euphonix MC Control V2

DAW controller
Touch-sensitive knobs, motorised faders, touchscreen display and OLED, supports HUI and Mackie Control compatible DAW software for Mac OS X. Dimensions: 50 x 23.5 x 3cm. Weight: 2.5kg.



order code 248964

€ 1399.-
£ 1189.-

ESI DuaFire

24bit/96kHz FireWire audio interface
2x ins with level controls (1/4" jack), mic preamps with phantom power (XLR), 2x hi-Z ins, 4x analogue outs, direct input monitoring with level control, headphone out, bus powered or via separate power supply. Supports DirectWIRE 3.0, MME, ASIO 2.0, GSIF 2.0. DirectSound and Core Audio. Includes power supply and Steinberg Cubase LE 4.



order code 206255

€ 95.-
£ 81.-

M-Audio Fast Track MKII

USB audio interface
24bit/48kHz, XLR microphone input with 48V phantom power, 1/4" instrument input with gain control, 1/4" stereo headphone output, RCA stereo speaker outputs, plug-and-play USB connection (USB 2.0 compatible), including Pro Tools M-Powered Essential.



order code 237376

€ 118.-
£ 100.-

M-Audio Fast Track Pro

USB audio interface
4x4 24bit/44.1kHz, stereo in up to 24bit/96kHz, USB powered, 2x mic/instrument preamps with switchable phantom power, 2x inserts, 2x balanced line outs, 4x additional RCA outs, S/PDIF coaxial I/O, S/PDIF out (AC-3/DTS surround sound compatible), MIDI I/O, compatible with both Mac and PC.



order code 184360

€ 155.-
£ 132.-

ESI ESPI 1010e

24bit/96kHz PCIe express audio interface
PCIe card with external 19" audio interface, 8 analog ins (2 with mic preamp and 2 Hi-Z instrument), +48V phantom power, up to 8 analog ins and outs, coaxial S/PDIF I/O, 2 headphone outs, 2 MIDI I/Os, support for DirectWIRE 3.0, EMDM driver: MME, DirectSound, ASIO 2.0 support. Windows 7/Vista/XP/2000/2003 compatible, power supply optional, incl. Steinberg Cubase LE 4.



order code 230632

€ 155.-
£ 132.-

Digidesign MBox 2 Micro

Mobile Pro Tools LE system
About the size of a typical USB flash drive, high-quality sound, stereo out for headphone or speaker monitoring (no audio ins). Includes Pro Tools LE, Bomb Factory® and DigiRack™ plug-ins and Digidesign's Xpand™ sample-playback/synthesis workstation, for Win XP and Mac OS X, USB bus powered. Work with Pro Tools and compose wherever inspiration takes you.



order code 139283

€ 225.-
£ 191.-

Tascam US-1641

USB 2.0 audio interface
24bit/96kHz, 8x mic/line ins with phantom power and front level meters, 2x balanced line/instrument ins (front), 4x balanced line ins (rear), 4x line outs, monitor out, S/PDIF I/O (switchable to AES/EBU), MIDI I/O. Compatible with Win XP, Vista 32 and Mac OS X (10.4 or higher), includes Steinberg Cubase LE 4. Dimensions: 19"/1U

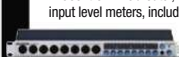


order code 138750

€ 269.-
£ 229.-

Presonus Firestudio Project

FireWire audio interface
24bit/96kHz, 8 XMAX Class A mic preamps, 8 analog mic/line ins, 2 instrument ins, 8 analog line outs, S/PDIF digital I/O, MIDI I/O, balanced send/return, zero latency monitoring with FireControl mixer/router, headphone output, 8 input level meters, includes recording software Presonus Studio One Artist, 19"/1U.



order code 199899

€ 389.-
£ 331.-

Apogee Duet Bundle

FireWire audio interface
24bit/96kHz, 2 channels, Firewire 400 I/O, breakout cable with 2 XLR mic ins, 2 1/4" jack instrument ins, 2 1/4" jack monitor outs, multi-segment LED display input and output levels, multi-function controller knob, headphone out, Maestro software for advanced control and low latency mixing, compatible with any Core Audio compliant audio application, compatible with Mac OS X Core Audio. Bundle incl. original Apogee carry case and 2GB USB stick.

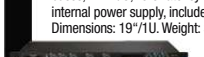


o. code 209773

€ 415.-
£ 353.-

Focusrite Saffire PRO 40

24bit/96k FireWire audio interface
20x I/O, 8x mic preamps, 6x analog I/O (2x mic/line/instr. combo XLR, 6x mic/line combo XLR), ADAT I/O, 2x S/PDIF I/O, 2x monitor outs, monitor switch, 2 separate headphone buses, MIDI I/O, zero-latency DSP mixer/router, internal power supply, includes plug-in suite. Dimensions: 19"/1U. Weight: 3kg

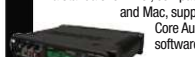


order code 219725

€ 429.-
£ 365.-

MOTU Ultralite MKIII Hybrid

FireWire and USB audio interface
24bit/192kHz, 2 mic/instrument ins, 6 bal. ins and 10 outs (1/4" TRS), 48V phantom power, S/PDIF I/O, headphone out, CueMix FX, internal DSP, LCD display, suitable for use as a standalone mixer, compatible with Windows and Mac, supports WDM, ASIO and Core Audio, incl. AudioDesk software for Mac.

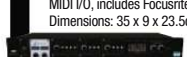


order code 239141

€ 479.-
£ 407.-

Focusrite Liquid Saffire 56

FireWire audio interface
24bit/192kHz with Liquid preamps, 28x I/O, 8x XLR mic ins, 2x ADAT I/O, coax S/PDIF I/O, 8x analog ins (1/4" balanced jack), 10x analog outs (1/4" balanced jack), Word Clock, MIDI I/O, includes Focusrite VST/AU plug-ins. Dimensions: 35 x 9 x 23.5cm (19"/2U). Weight: 5kg



order code 228525

€ 679.-
£ 577.-

RME Fireface 400

FireWire audio interface
24bit/192 kHz high performance FireWire audio interface, analog technology from ADI-8 converter, mic preamp technology from Quad and OctaMic (2 mic preamps), TotalMix technology from Hammerfall DSP series, very reliable drivers.



order code 193883

€ 799.-
£ 679.-

RME HDSPE Madiface

PCI express interface
MADI ExpressCard (34mm standard) for notebooks, 64 input/64 output channels, 1x MADI I/O (optical and coaxial), 44.1kHz/192kHz, clock-mode slave and master, sync sources: MADI coaxial, MADI optical and internal, connections: breakout box: input and output MADI optical, MADI coaxial (BNC), MIDI I/O, incl. DigiCheck software, ExpressCard MADI, 1m cable (IEEE 1394), driver-CD.



order code 213735

€ 1299.-
£ 1104.-

Digidesign Digi 003 Factory Complete

Complete Production Toolkit
18 simultaneous channels of audio I/O, 8 analogue ins and outs, 4 mic preamps, 48V phantom power, 8 motorized faders, 8 rotary encoders for pan/send/meter/plugin-in control, 8-channel ADAT optical I/O or 2-channel S/PDIF optical I/O, 1x MIDI in, 2x MIDI out, BNC word clock I/O, Digidesign Pro Tools LE 8, Factory plug-in bundle and Complete Production Toolkit.



order code 232218

€ 3055.-
£ 2597.-

Native Instruments Komplete 7

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Fax: +49 9546 9223-24

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- free shipping to the UK and Ireland on orders above £159

Sennheiser MKE 400

Microphone for video cameras
Hyper-cardioid polar pattern, frequency range: 40Hz - 20kHz, 3.5mm stereo jack plug connection, includes windshield, connection cable and 1x 1.5V battery (AAA). Size of base plate is 180 x 180mm.



order code 204069

€ 139.-
£ 118.-

Rode NTG-2

Directional condenser microphone
Broadcast quality, condenser transducer, low-noise circuitry, low handling noise, phantom powered (44 - 52V) or battery powered (1.5V), 20Hz-20kHz, 131dB SPL max., ideal for film/TV/video. Includes stand mount, windshield and zip pouch. Weight: 161g



order code 179393

€ 185.-
£ 157.-

Rode NT5-MP

Condenser microphone stereo bundle
2 matched small diaphragm condenser microphones, 0.5" gold sputtered capsule, cardioid, 20Hz-20kHz, excellent for drum overheads, acoustic guitar and stereo live recordings. Including plastic case, microphone clips and wind screens.



order code 154595

€ 269.-
£ 229.-

Oktava MK012-01 MSP2 Matched Pair

Matched stereo set
2x small diaphragm condenser microphones, cardioid, 20Hz-20kHz, delivered in a wooden box. Finish: Silver. Made in Russia!



order code 165104

MK012-01 MSP2

Single mic, cardioid

order code 165103

€ 279.-
£ 237.-

€ 149.-
£ 127.-

Neumann KM 184 Stereo-Set

Small diaphragm condenser mic bundle
2x KM184 condenser microphones with sequential serial numbers, cardioid, 20Hz-20kHz. Includes 2x WNS100 windshield, 2x SG 21/17 stand adapters and wooden box.



Finish: Silver
o. code 153692
Finish: Black
o. code 158648

€ 1077.-
£ 915.-

the t.bone SC440 USB

USB condenser studio microphone
USB connection for direct access to Mac and PC (not compatible with Windows Vista!), cardioid polar pattern, 20Hz-18kHz, includes plastic case.



order code 197603

€ 55.-
£ 47.-

the t.bone SC450 Set

Large diaphragm studio microphone
Cardioid, external low cut and -10dB pad switch, 2000 impedance, requires 48V phantom power, 30Hz-20kHz, includes shockmount and PVC case. Dimensions: 50.5 x 190mm. Bundle includes the t.bone MS180 pop shield.



order code 203194

SC450 Stereo-Set - matched stereo pair in case (pop shield not incl.)

order code 174363

€ 93.-
£ 79.-

€ 169.-
£ 144.-

StudioProjects B1

Large diaphragm condenser microphone
1" Capsule, transformerless circuit, requires +48V phantom power, cardioid, 20Hz-20kHz, -34dB sensitivity (0dB= 1V/Pa), 2000, 132dB maximum, 120dB-A noise (IEC651). Includes foam wind screen, zippered bag and shockmount.



order code 180703

€ 105.-
£ 89.-

Rode NT1-A Complete Vocal Recording Solution

Large diaphragm microphone
20Hz-20kHz, 1000 impedance, 132dB dynamic range, 137dB max SPL. Includes SM6 deluxe shockmount, 6m cable and Peter Freeman 'Studio Secrets' tutorial DVD.



order code 235937

€ 179.-
£ 152.-

AKG C3000

Studio large diaphragm condenser mic
Cardioid, 20Hz-20kHz, 2000, switchable -10dB pad, includes shockmount. Diameter: 53mm. Length: 162mm



order code 141408

€ 185.-
£ 157.-

Rode T-1000 Thomann Edition

Large diaphragm condenser microphone
Identical as Rode NT-1000, transformerless SMT circuitry, 1" HF2 capsule with gold-plated diaphragm, incorporating internal shock mounting, 134dB dynamic range, 1400BA SPL capabilities, frequency response 20Hz - 20kHz. Cardioid polar pattern, Thomann Edition in durable satin black finish including shockmount SM6, cable and bag.



order code 247421

€ 218.-
£ 186.-

the t.bone SCT2000 Set

Valve studio microphone
Truly warm sound, 20Hz-20kHz, omni/cardioid/-8 plus 6 intermediate stages, up to 130dB SPL. Includes case, shockmount and power supply. Bundle includes the t.bone MS180 pop shield.



order code 203196

€ 279.-
£ 237.-

Rode NT2-A MS-180 Bundle

Large diaphragm microphone
Switchable polar pattern (omni, fig-8, cardioid), 1" diaphragm, 20Hz-20kHz, 147dB max SPL, includes SM2 shockmount. Bundle includes the t.bone MS180 pop killer.



order code 223002

€ 285.-
£ 242.-

SE Electronics SE 2200T

Large diaphragm condenser mic
Gold plated 1" diaphragm, 100Hz switchable high-pass filter, -10dB switchable pad, frequency response: 20Hz - 20kHz, sensitivity: -33dB ± 1dB (0dB=1V/Pa 1000kHz), impedance: <= 2000, equivalent noise level: 16dB (A weighted), max SPL: 130dB (0.5% THD @ 1000Hz), connector: 7-pin, power supply and shockmount included.



order code 244907

€ 339.-
£ 288.-

Shure SM 7 B

Studio microphone
Dynamic studio microphone with cardioid polar pattern, 50Hz-20kHz, bass rolloff switch, mid-boost switch, 1507, shielded against broadband interference, fixed stand adapter, XLR connector, includes windscreens.



order code 129929

€ 385.-
£ 327.-

EV RE20

Dynamic large diaphragm microphone
RE series, cardioid, switchable HP filter, variable D design, 1507, 45Hz-18kHz, includes clip and box, ideal for vocals, brass and bass drum. Length: 217mm. Diameter: 54mm. Weight: 737g



order code 128926

€ 449.-
£ 382.-

Neumann TLM 102

Large diaphragm condenser microphone
Cardioid pattern, 20Hz-20kHz, 500 impedance, 12dB-A equivalent noise level, 144dB max SPL for THD 0.5%, includes SG2 stand mount swivel. Weight: 260g.



Finish: Nickel
o. code 237768
Finish: Black
o. code 237769

€ 539.-
£ 458.-

AKG C414 XLII

Large diaphragm condenser mic
9 polar response patterns (cardioid, wide cardioid, eight, hypercardioid, omni and 4 mix pattern), 20Hz - 20kHz, 6/12/18dB pad, 40/80/160Hz HP filter, 140dB SPL max., CK12 capsule, high boost above 4kHz, peak hold LED, lock mode to save preferences, transformerless FET XLR out, incl. CK12 mic head, H85 shockmount, popfilter PF 80, windscreens W414X and alu case.



o. code 240602

€ 855.-
£ 752.-

Brauner Phantom Classic

Solid state microphone
Cardioid polar pattern, pressure gradient transducer, equivalent noise <11dBa, signal to noise: 83dB, 20Hz-22kHz, 142dB max SPL @ 0.3% THD, requires 48V phantom power. Includes flexible suspension mount, aluminium case and Vovox cable.



order code 139461

€ 945.-
£ 803.-

Neumann U87 Ai Set

The studio microphone classic
Variable large diaphragm microphone, pressure-gradient transducer with double membrane capsule, 3 directional characteristics (omni, cardioid, figure-8), switchable low frequency roll-off, switchable 10 dB pre-attenuation, 20Hz-20kHz, 2000. Finish: Nickel. Bundle includes EA87 shockmount.



order code 169705

€ 2333.-
£ 1983.-

ART Tube MP

Tube microphone preamp
Hand selected 12AX7A valve, limiter, 48V phantom power, phase reverse, XLR and jack I/O, perfect for hard disc recording or as a valve DI.

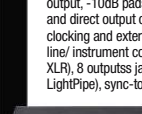


order code 191529

€ 37.-
£ 31.-

Focusrite OctoPre MkII

8-channel mic preamp with A/D
Integrated 8-channel 24bit/96kHz digital output, -10dB pads, 5-LED input metering and direct output on each channel, internal clocking and external via BNC, 8 inputs (2 mic/line/instrument combo XLR, 6 mic/line combo XLR), 8 outputs jack, 2 ADAT outputs (dual LightPipe), sync-to-wordclock input, JetPLL. Jitter-elimination, 19", 1U, weight: 3.6 kg.



order code 236376

€ 389.-
£ 331.-

SPL GoldMike 9844

2-channel valve preamp
Discrete Class A solid state, 48V phantom power, phase reverse, pad function, flair presence enhancement, very clear and warm sound. Dimensions: 19"/2U



order code 123370

€ 425.-
£ 361.-

Universal Audio 710 Twin-Fifty Bundle

1-channel mic/line/DI preamp
Dual path 310V class A valve & transimpedance solid state preamp, +70dB gain, 48V phantom power, -15dB pad, phase invert, 75Hz low cut filter. Bundle includes UAD-2 Solo PCIe DSP card, VST and AU support, LiveTrack™ low-latency live monitoring/recording mode, Mix Essentials II (176SE Limiting Amplifier Emulation, RealVerb Pro, CS-1 Channel Strip, Pultec EQP-1A EQ Emulation).

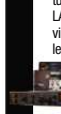


order code 244200

€ 679.-
£ 577.-

Universal Audio LA-610 MkII UAD-2 Duo Bundle

Classic tube recording channel
Based on the legendary Bill Putnam 610 tube mic pre and EQ, Authentic Teletronix LA-2A style T4 opto-compressor, complete vintage channel strip, mic pre with gain and level controls, true bypass, large metering and improved signal output. Bundle incl. Universal Audio UAD-2 Duo PCIe DSP Card.



o. code 252465

€ 1499.-
£ 1274.-

Behringer FBQ1502 Ultragraph Pro

2x15-band graphic equalizer
FBQ feedback detection system, servo balanced ins & outs (jack & XLR).



order code 167770

€ 77.-
£ 65.-

Behringer FBQ6200 Ultragraph Pro

2x 31-band graphic EQ, FBQ detection system, jack & XLR I/O.

order code 172364

€ 166.-
£ 141.-

FMR Audio RNC 1773

Really nice compressor
Stereo compressor with two modes: 'Normal' for effective compression and 'Super Nice' for transparent compression. Controls: threshold, ratio, attack, release and gain. Switches: bypass & Super Nice.



order code 179895

€ 169.-
£ 144.-

RNLA 7239 Really nice levelling amplifier

10Hz-100kHz 0.5dB @ 0dBu clip point: +22.5dBu @ 3% THD.

order code 190166

€ 205.-
£ 174.-

dbx 266 XL

Stereo compressor/limiter/gate
Patented OverEasy technology (attack & release times), XLR I/O, -10/+4dB switch, stereo link, dbx sound.



order code 131808

€ 175.-
£ 149.-

dbx 166 XL

2-channel compressor/limiter/gate, stereo or dual mono. OverEasy or hard knee mode, PeakStop limiting.

order code 131035

€ 266.-
£ 226.-

tc electronic M350

Dual engine rack processor
15 true and stunning stereo reverbs, 256 multi-FX/reverb presets + 99 user preset locations, a total of 355 presets, full DAW integration through VST/AU compatible editor, auto-sensing 24 bit S/PDIF digital I/O (coax), 44.1-48kHz, 1/4" jack in/out, MIDI in/out.



order code 192915

€ 175.-
£ 149.-

Behringer ADA8000

8-channel AD/DA converter
8x mic preamps with phantom power, 24bit AD/DA, 44.1 & 48kHz, Wordclock or ADAT sync, ADAT I/O, ADAT in can be routed to line outs, mic and line in/outs are routed to ADAT out, excellent expansion for DD3216 or any interface/mixer with ADAT I/O.



order code 164573

€ 185.-
£ 157.-

tc Helicon VoiceTone Create

Vocal FX unit
99 music style based FX combinations, 5 'favourite' user presets, XLR mic level I/O in stereo or mono, clean studio quality mic preamp with phantom power, 2x XLR outs (for mono or stereo operation), tap tempo function.



order code 117131

€ 149.-
£ 127.-

tc Helicon Harmony-G

Compact vocal processor
Harmony arrangement algorithm listens to guitar and voice to follow your music, 6 reverb/delay combinations for vocal and guitar in, 10 presets each with A/B location, selectable harmony voicing, XLR mic in with 48V phantom power, stereo line out (balanced XLR), guitar in and pass-through for separate amp/tuner, includes external power supply.



order code 205731

€ 149.-
£ 127.-

Boss VE-20

Vocal Performer
Vocal effects dynamic compressor / de-esser, enhancer, delay, reverb, 2 harmonist and pitch correction, LCD display, looper mono, 38 sec., sounds: 30 preset + 50 user, requires optional power supply Boss PSA-230 (order code 102842, not included).



order code 235812

€ 189.-
£ 161.-

Digitech Vocalist Live 3G

Vocal harmonizer
Automatic intelligent 3-part harmony, your voice plus 2 more, gender controls, 5 harmony patches, real-time chromatic pitch correction, warmth, compressor, 2-band EQ, low cut, noise gate, reverb, 5 delay settings, chorus and reverb effects, built-in tuner, XLR mic/line in, 48V phantom power, headphone output, incl. power supply.



order code 243163

€ 269.-
£ 229.-

tc electronic Voice Live 2

Vocal multi FX pedal
Up to 8 voices or 4 doubled harmonies, reverb, tap delay, megaphone and distortion, compressor, de-esser and EQ, MIDI or mp3, LCD display, XLR, line in, aux in, headphone output, coax S/PDIF I/O, backup and audio streaming. Dimensions: 35 x 7.6 x 21.6cm. Weight: 2.3kg.



order code 225557

€ 699.-
£ 594.-

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AKG K 240
Studio stereo headphones
Half open, 55Ω, 88dB/mW, 15Hz-20kHz, ear-enclosing, cable connection, distortion-free playback (new XXL cap), involving sound from new Varimotion system, ideal for Walkman and sound cards. Weight: 240g

order code 153257
€ 89.- **£ 76.-**

AKG K 141 MKII
Dynamic, semi-open, 55Ω, 18Hz-24kHz, plug-in cable. Weight: 225g

order code 206955
€ 95.- **£ 81.-**

Sennheiser HD25 BE
Dynamic DJ headphones
Impedance 70Ω, SPL max. 120dB, frequency response: 16Hz - 22kHz (-3dB), closed system. Includes 150cm cable with 3.5mm mini jack and adaptor for 6.3mm jack. Weight: 140g.

order code 249403
€ 139.- **£ 118.-**

Sennheiser HD 212 pro
32Ω, 12Hz-19kHz

order code 161045
€ 37.- **£ 31.-**

AKG K271 MKII
Closed dynamic studio headphones
Circumaural design, 55Ω, 200mW max input, 16Hz-28kHz, 104dBV sensitivity, self-adjusting headband and auto-shut-off feature, 3m cable. Includes 5m coiled cable, 1 pair velvet pads and gold plated mini-jack to 1/4" screw-on adapter. Weight: 240g

order code 206951
€ 145.- **£ 123.-**

5m extension cable
1/4" stereo jack.

order code 153216
€ 6.50 **£ 5.50**

AKG K 701
High-end reference headphones
Revolutionary flat wire voice coil technology, dynamic, open back, 62Ω impedance, 105dB efficiency, 10Hz-39.8kHz, 200mW max input power, hard gold plated 1/4" jack plug, 3m cable. Weight: 235g (not including cable).

order code 185476
€ 199.- **£ 169.-**

Sennheiser HD-650
Hifi headphones
Open back, dynamic, impedance 300Ω, frequency response 10Hz to 39.5kHz, 103dB SPL, 3m cable, 3.5mm stereo mini jack with 1/4" adapter. Weight: 260g (excluding cable).

order code 165585
€ 255.- **£ 217.-**

ESI nEar04 Classic
Active 4" studio monitors
Magnetically shielded, bi-amped, 20W bass + 20W treble, balanced/unbalanced 1/4" jack inputs. Dimensions: 20.6 x 13.6 x 14.9cm. Pair price!

order code 232799
€ 91.- **£ 77.-**

KRK RP5 Rokit G2
Active studio monitor
45W, 5" + 1" speakers, 53Hz-20kHz, magnetically shielded. Dimensions: 27.6 x 18.5 x 25cm. Weight: 8kg. Unit price!

order code 213024
€ 149.- **£ 127.-**

KRK RP8 Rokit G2
8" + 1", 140W.

order code 213090
€ 264.- **£ 224.-**

ESI nEar05
Active 5" studio monitors
Magnetically shielded, 33Hz-22kHz, bi-amped, 42W bass + 33W treble, balanced XLR & 1/4" jack inputs. Dimensions: 25 x 16.6 x 20cm. Pair price!

order code 160180
€ 169.- **£ 144.-**

M-Audio Studiophile BX5a Deluxe
Active nearfield monitors
70W, 5" woofer, 1" tweeter with waveguide, bi-amping, magnetically shielded, balanced XLR and balanced/unbalanced TRS inputs, volume control, dimensions HWD: 25 x 17.6 x 20cm. Pair price!

order code 207871
€ 195.- **£ 166.-**

Mackie MR8
Active nearfield monitor
8" woofer (100W), 1" tweeter (50W), frequency response: 40Hz - 20kHz, max. SPL per pair: 116 dB SPL @ 1m, XLR, jack (6.3mm) unbalanced and RCA, magnetically shielded, dimensions HWD: 40.6 x 34.6 x 27.6 cm. Unit price!

order code 207242
€ 215.- **£ 183.-**

Genelec 8020BPM
Active 2-way studio monitor
Power switch, 66Hz-20kHz (±2.5dB), 105dB SPL peak @ 1m, 95dB SPL @ 1m, 105mm (4") high efficiency bass driver, 19mm (3/4") metal dome tweeter with Directivity Control Waveguide, 3kHz crossover, magnetically shielded, aluminium cabinet, includes wall bracket. Power per channel: 20W (bass), 20W (treble). Dimensions: 22.6 x 15.1 x 14.2mm. Weight: 3.7kg. Unit price!

o. code 235038
€ 279.- **£ 237.-**

Yamaha HS50M Stativ-Set
Active 2-way studio monitor
70W bi-amped bass reflex system, 5" woofer, 3/4" tweeter, 55Hz-20kHz, XLR & TRS ins, adjustable input level, mid EQ, room control, high trim, switchable low cut, fully magnetically shielded. Bundle with 2x HS50M and 1 pair Millennium BS-500 adjustable nearfield monitor stands.

order code 244787
€ 311.- **£ 264.-**

Adam A7 Special Edition
Active nearfield studio monitor
Finish: black piano lacquer, 6.5" Rohacell / kevlar sandwich woofer, A.R.T. tweeter, frequency range 46Hz to 35kHz, 100W (sin), 150W (rms), XLR and RCA input, dimensions: 18 x 33 x 28cm, weight: 8kg. Unit price.

order code 241073
€ 377.- **£ 320.-**

Adam A7 Special Edition
Active nearfield studio monitor
Finish: white piano lacquer, 6.5" Rohacell / kevlar sandwich woofer, A.R.T. tweeter, frequency range 46Hz to 35kHz, 100W (sin), 150W (rms), XLR and RCA input, dimensions: 18 x 33 x 28cm, weight: 8kg. Unit price.

order code 244797
€ 377.- **£ 320.-**

Adam A7X
2-way active bassreflex nearfield monitor
7" carbon/rohacell/glass woofer with 100W, X-A.R.T. tweeter with 35W, shelving filter tweeter: >5kHz ~ ±6dB, shelving filter woofer: <300Hz ~ ±6dB, frequency range: 42Hz - 50kHz, crossover frequency: 2.5kHz, SPL max. / pair 1m: 114dB, gain: +14dB / -8dB, gain tweeter: ±4dB, THD 90dB/1m > 100Hz: <0.5%, inputs XLR and RCA, input impedance: 30kΩ, dimensions: 20.1 x 33.7 x 28cm, weight: 9.3kg. Unit price.

o. code 245513
€ 429.- **£ 365.-**

Genelec 8030APM
Active 2-way studio monitor
58Hz-20kHz free field frequency response, 108dB SPL peak @ 1m, 130mm (5") bass driver, 19mm (3/4") metal dome tweeter with DCW (Directivity Control Waveguide), 3kHz crossover frequency. Amplifier power: 40W bass + 40W treble, magnetically shielded, aluminium cabinet, balanced XLR input. Dimensions: 28.5 x 18.9 x 17.8cm. Weight: 5.6kg

order code 171718
€ 469.- **£ 399.-**

Yamaha HS80M stand bundle
Active 2-way studio monitor package
120W bi-amped bass reflex speaker, 8" woofer, 1" tweeter, 42Hz-20kHz, XLR & jack input, mid EQ, room control, high trim, switchable low cut, magnetically shielded. Bundle includes 2x HS80M and 1 pair of Millennium BS-500 nearfield stands.

o. code 227555
€ 469.- **£ 399.-**

Mackie HR24 MK2
Active 2-way studio nearfield monitor
8.75" low-distortion LF woofer, 1" titanium dome ferrofluid cooled tweeter, twin FR series amps (150W LF & 100W HF), passive radiator provides tight, articulate bass extension down to 35Hz, balanced XLR/TRS and unbalanced RCA inputs. Unit price!

order code 138446
€ 529.- **£ 450.-**

Adam A8X
2-way active bassreflex nearfield monitor
9" carbon/rohacell/glass woofer with 150W, X-A.R.T. tweeter with 50W, shelving filter tweeter: >5kHz ~ ±6dB, shelving filter woofer: <300Hz ~ ±6dB, frequency range: 38Hz - 50kHz, crossover frequency: 2.3kHz, SPL max. / pair 1m: 120dB, gain: +14dB / -infinite dB, gain tweeter: ±4dB, THD 90dB/1m > 100Hz: <0.5%, inputs XLR and RCA, input impedance: 30kΩ, dimensions: 25.5 x 40 x 32cm, weight: 12.8kg. Unit price.

o. code 245573
€ 569.- **£ 484.-**

JBL LSR 4328PAK
Active studio monitor bundle
Includes LSR 4328P and LSR 4300 ACC, 8" 150W woofer, 1" 70W tweeter, room mode correction technology (analyses room frequencies and trims the speakers), 50Hz-20kHz, 112dB max SPL, XLR & balanced jack ins, AES/EBU (XLR) and S/PDIF (COAX) ins, USB data connection, HiQnet network. Includes accessory kit (microphone, remote control, software and USB cable).

order code 195301
€ 1259.- **£ 1070.-**

Behringer DJX 750
5-channel DJ mixer
24bit digital effects, BPM counter with time and sync display, ultralight faders, XPO stereo surround effects, 3-band kill EQ, 3-way kill switch, monitor function with master/cue balance control and split option, auto talkover.

order code 223751
€ 159.- **£ 135.-**

Behringer DDM 4000
32bit digital DJ mixer
Beat-synchronized sampler, 4 multi-FX sections, 2 patented BPM counters, digital crossfader and MIDI, 4x phono/line stereo channels. 2x mic inputs with gain, EQ, talk function and FX. 4x stereo channels with gain, programmable parametric 3-band EQ with kill function, fader curve control and flexible crossfader.

order code 206918
€ 299.- **£ 254.-**

Pioneer DJM 400
Professional DJ mixer
2 channels, mic/aux switch (to select 2x mic inputs or 1x stereo line input), fader start, crossfader curve adjustment, talkover (-20dB), peak level meter.

order code 191081
€ 433.- **£ 368.-**

Allen & Heath XONE42
4-channel DJ mixer
2 turntable ins (RCA phono RIAA), 2 line ins, X-FEED, 3-band EQ, 6dB total-kill EQ on all channels, internal switch-mode PSU, 2 headphone outs (1/4" & 3.5mm), VCA crossfader with curve control, VCF filter with independent I/O, resonance & frequency controls, USB 1.1 port (stereo I/O), XLR mic in with 2-band EQ and level control, finish: black.

o. code 231622
€ 777.- **£ 660.-**

Pioneer DJM-700
Professional 4-channel DJ club mixer
Crossfader assignment, fader start, 3-band EQ (-26dB to +6dB), talk over (-20dB), peak level meter, rotary pots for master output. Dimensions: 32 x 38.1 x 10.8cm (WxHxD). Weight: 7.5kg

Finish: Black
order code 118996
Finish: Silver
order code 119965
€ 811.- **£ 689.-**
€ 833.- **£ 708.-**

Numark NDX 800
Single CD/MP3/USB player
With USB and MIDI interface, beat-synched DSP effects with wet-dry fader, fast, reliable, slot-loading drive, 7" scratch wheel, adjustable start and stop time for vinyl-like deck performance, automatic BPM analyzer and tap tempo for manual BPM entry, pitch ±6, 12.25 and 100%, bending over pitch buttons, fader start, outputs: RCA and digital S/PDIF.

order code 247251
€ 339.- **£ 288.-**

Denon DN-S 1200
Single CD player
Touch sensitive jog disc, MIDI interface controller (PC/Mac), USB audio, hot starts & seamless looping, 3 platter effects, 4-way BPM counter, memo function, pitch range & deep pitch resolution, vibrant blue display with 2-line character text support, loop A/B trim, power-on-play, slot-in CD player, D-Link, 4 built-in DSP effects, next track function with cross fader, dimensions: 21.5 x 8.7 x 23.2cm.

order code 205617
€ 425.- **£ 361.-**

Pioneer CDJ-350
Single CD player
Plays MP3, AAC, WAV, AIFF, USB (flash recorder, disc drives), USB A/B connection, includes Rekordbox music management software, beat display function for better scratch and looping performance, auto beat loop function, dimensions: 21.8 x 29.6 x 10.8cm, weight: 2.7kg, system requirements: Windows VISTA/XP, Mac OS X 10.4 or higher.

order code 249908
€ 569.- **£ 501.-**

Pioneer CDJ-850
Single DJ CD player
MP3, AAC, WAV, AIFF, 24bit/48kHz, HID and MIDI control by USB, new audio output system with Wolfson DAC processor, quantized beat loop, advanced auto beat loop, plays Audio CD, CD-R, CD-RW, USB, frequency response: 4Hz - 20kHz, dimensions: 30.5 x 36.4 x 10.5cm, weight: 3.3kg, incl. Rekordbox music database management software, Mac OS X (10.4.6 and higher), Win 7 & XP.

order code 251872
€ 885.- **£ 752.-**

Pioneer CDJ-2000
Professional multifunction single CD player
Plays Audio CD, CD-R, CD-RW, USB, SD, DVD-R, DVD-RW, USB sources and SD cards, includes Rekordbox software, quantized beat loop, compatible with MP3, AAC, WAV, AIFF and Tascam Packer data, 24bit/48kHz soundcard, HID and MIDI controllability by USB, frequency range: 4Hz - 20kHz, dim.: 32 x 40.6 x 10.7cm, weight 3.9kg.

order code 238585
€ 1775.- **£ 1509.-**

Behringer B-Control DeeJay BCD-3000
4-channel USB audio interface
24bit converter, dual player, mixer, FX, 2 phono preamps plus monitor section, 2 jog wheels, pitch bending and cue searching, 3-band kill EQ, loop buttons, pitch and level faders per channel plus cross-fader, 2 phono preamps, mic preamp, includes Native Instruments Traktor 3 LE DJ software.

order code 116476
€ 133.- **£ 113.-**

Hercules DJ Console RMX
DJ controller
Integrated USB audio interface, 2 jog wheels, 6 faders, DJ buttons for DJing control, FX and loop buttons, mic in, headphone out, 4x line outs (1/4" mono balanced jack), 4x RCA outs, 2x stereo ins, includes VirtualDJ DJC edition software (PC/Mac).

order code 208113
€ 269.- **£ 229.-**

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Control digital music files using turntables or CD decks, up to 2 decks simultaneously, controllable by CD player and MIDI controller, USB 2.0 audio interface, bus powered, 4x high-gain outputs, 4x inputs with phono preamps, 8x LEDs, 2x vinyls and 2x CDs.

order code 227391
€ 299.- **£ 254.-**

Rane SL3 Serato Scratch Live
DJ complete system
Compact hardware design, 3 Vrms 24bit, 44.1/48kHz converter, 104dB DAC dynamic range, aux in for live recording or live feed, aux out for SP-6 sample player, USB 2.0, phono preamp in studio quality, direct thru, due to Serato's proprietary control scheme, the result is a feel and sound indistinguishable from playing vinyl.

order code 228530
€ 699.- **£ 594.-**

Numark Mixdeck
DJ workstation
With CD/MP3/USB decks, mixer, computer, MIDI interface, dock for iPod, mixer with EQ/rotary kills, effects with beat sync (echo, filter, flanger, pan, phaser), fader start, looping, sampling, tempo: 6, 12, 25 and 100%, controllable over MIDI software without timecode over USB, 2 displays, Mac OS X or Windows XP/Vista, incl. power supply and USB cable.

order code 245624
€ 859.- **£ 730.-**

ORCHES EXTREMES

Orchestrify your electronic, dance and pop productions with our guide to mangling and modernising symphonic sounds, complete with audio examples on the DVD

> Ever fancied using orchestral instruments in your contemporary productions? You'll be relieved to hear that you can disregard images of ruddy-cheeked flag wavers at the Proms. Orchestral sample packages aren't just for writing classical music, and here we're going to show you how to work with those under-used symphonic sounds included with your DAW. Have you ever properly explored those timpani or harp patches? No? Well, the possibilities they open up will surprise you.

It doesn't matter if you don't know your Elgar from your elbow. No classical music knowledge

"So watch out, Beethoven - you're about to hear your favourite tools abused like never before"

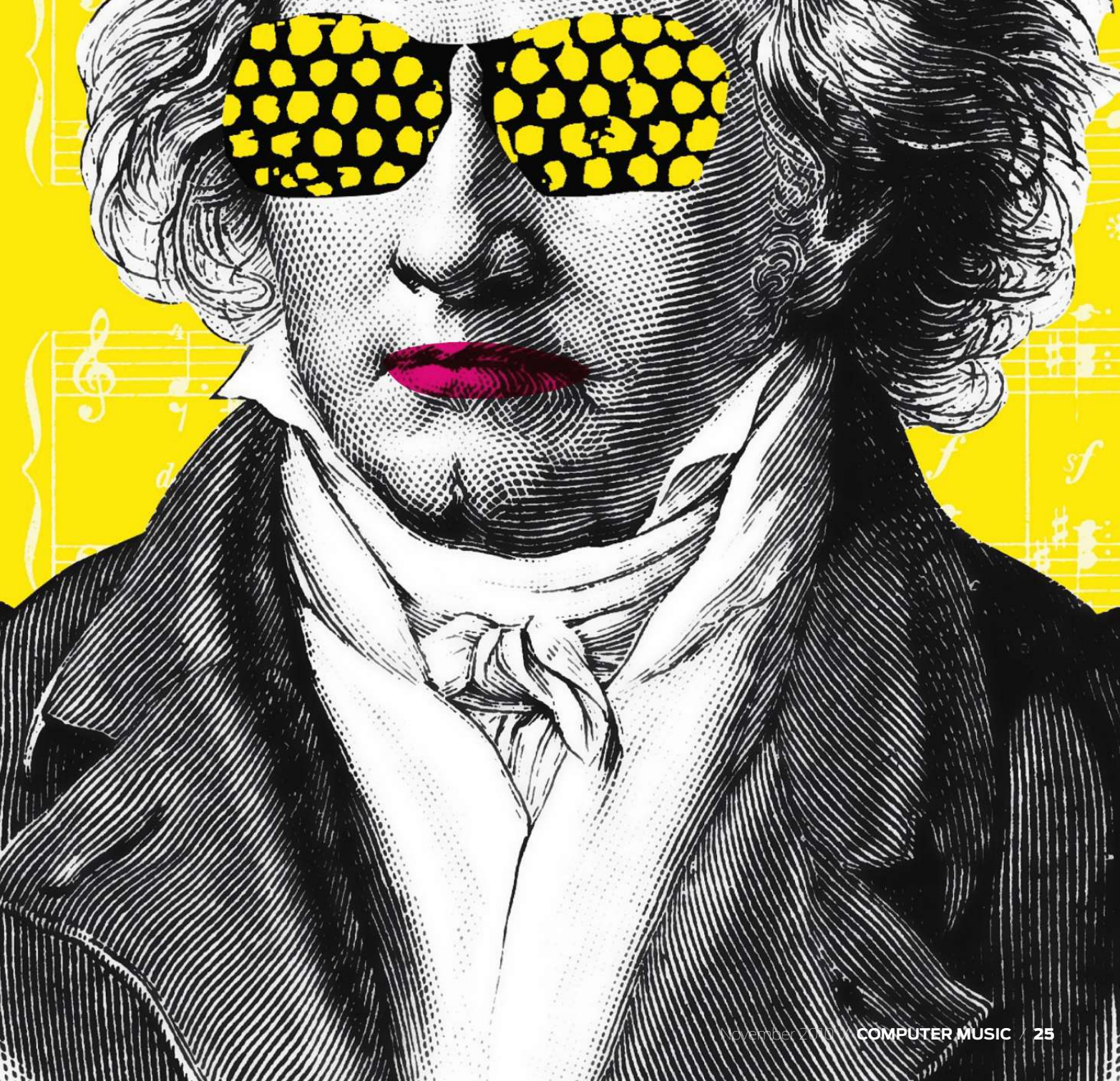
is required for the following tutorials: we'll be putting orchestral loops and plug-ins through the wringer to show that you don't have to be Mozart to successfully mangle, distort and slice those unloved symphonic sounds. You don't need to buy any expensive software, either: the types of instruments and effects we're working with should come as standard with any normal DAW or can be downloaded from the net for free. We've even included a couple of great plug-ins on the **cm** DVD.

Skill is nothing without knowledge, so we'll acknowledge the innovators of orchestral scoring in dance music. We'll also take a look at how to make the most of orchestral instruments and percussion plug-ins to bring symphonic power to your dance tracks. Orchestral TV and movie soundtracks can benefit from some synthetic sparkle, too, so we'll show you how to make your scores stand out from the pack.

Hopefully this tutorial will inspire you to look beyond your usual synth plug-ins, head for the orchestral toolbox and mash the classics up into dance floor destroyers. So watch out, Beethoven - you're about to hear your favourite tools abused like never before...



TRAL



Discover the orchestra



The Fairlight CMI featured an orchestral sample that proved very popular indeed

If you think you've never listened to a track featuring a sample of "classical" music in your life, you're almost certainly wrong. Here's just one example. In the early 80s a staggeringly expensive synthesiser/sampler was released: the Fairlight Computer Music Instrument. At £20,000 it was top tier stuff, available to only the richest, most successful musicians, but one particular sound made it on to many a pop and hip-hop track - the ubiquitous ORCH5 preset. Originally a short section from Igor Stravinsky's *Firebird Suite*, this immediately recognisable stab squirmed its way onto tracks by Trevor Horn, Kraftwerk and

countless Detroit techno artists of the time, before gradually making its way into the pop mainstream, where it can still be heard today, thanks to the current wave of 80s synth pop nostalgia.

Fair' enough

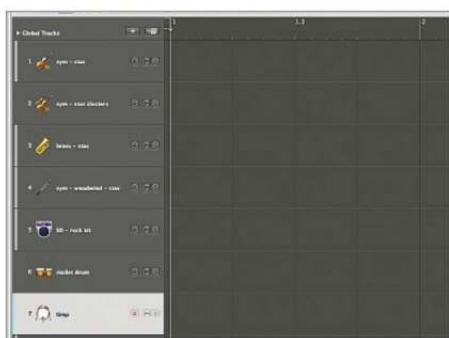
The clip was originally sampled in 1979 by computer programmer David Vorhaus and appeared alongside other orchestral snatches on a 25-floppy-disk set packaged with the Fairlight CMI. The synth was designed primarily as an analogue/digital sound modeller, and the creators considered its ability to play back digital sound samples a cheat to get around the

limits of its processing power. However, musicians soon realised that the machine's 8-bit sampling capabilities could be used to more creative effect.

Below, we go back to the future to show you how you can use sample libraries to create orchestra stabs and then bring them fresh up to date using effects. The walkthrough reveals how to write a short stab, then process it to make it sound right at home in a banging dance track. You don't have to stick to one chord, either: if you have a library featuring woodwind runs, string glissandos or brass rips, try experimenting with those too.

> Step by step

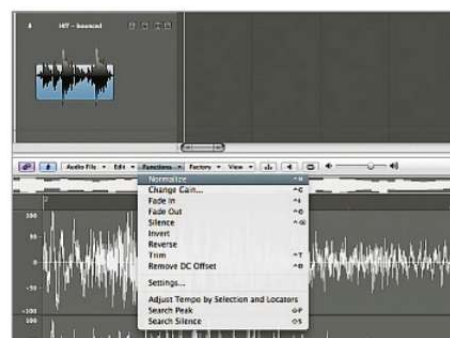
Make an orchestral stab



1 > Let's start by loading up a whole orchestra of patches using the sounds bundled with our DAW. You're going to need every section - strings, woodwinds, brass and percussion. We're going to hit 'em hard and fast, so you'll just need staccato patches with a little reverb on each track. There's no need to overdo it, as we'll insert effects later on.



2 > Next, start to compose your stab. We're using a C major chord for the strings and brass, spacing out the notes across the instruments' range to add fullness. The woodwinds pick out a couple of notes from the scale. A timpani and mallet drum are the percussive elements. (Audio on the DVD: **Stab raw.wav**.)



3 > Bounce this chord down to a single new track and boost the level of the sample with normalisation or gain adjustment so that it's nearly distorted. Now chop off the reverb tail just as the level reaches about an eighth of its full volume. (Audio: **Stab normalised.wav**.)



4 > Copy and paste the sample after itself and reverse the second one. Now if you play the clip quickly you'll get a short staccato hit, but if you hold it for longer, you'll hear a slapback effect as the reversed sample kicks in. We then use Logic's EXS24 sampler to map the sample across the keyboard. (Audio: **Stab reversed.wav**.)



5 > Effects can really make this sample sing. To prepare the track for them, insert an EQ, then cut the top end starting at **10kHz** and reduce the bottom end below **200Hz**. This prevents the lower parts of the hit from interfering with any drum tracks. (Audio: **Stab reversed eq.wav**.)



6 > Next we add phaser and exciter effects to bring out the sparkle in the sample. Finally, we go for a little bit of reverb set to **30% Wet** and a **2.95 second Reverb Time** to add some space to the sound. And there you have it - pure 80s stab nostalgia at your fingertips. (Audio: **Stab final.wav**.)

Playing with tone

Let's talk about tone. Traditional orchestral composers use tone to give their pieces shades of light and dark, and to reflect the emptiness or busyness of certain feelings. Certain instruments evoke a particular tone. As a general rule, instruments usually increase in harshness from woodwinds through strings to brass. Think about the difference between a score written to accompany a battle scene versus one written for sneaking through the woods.

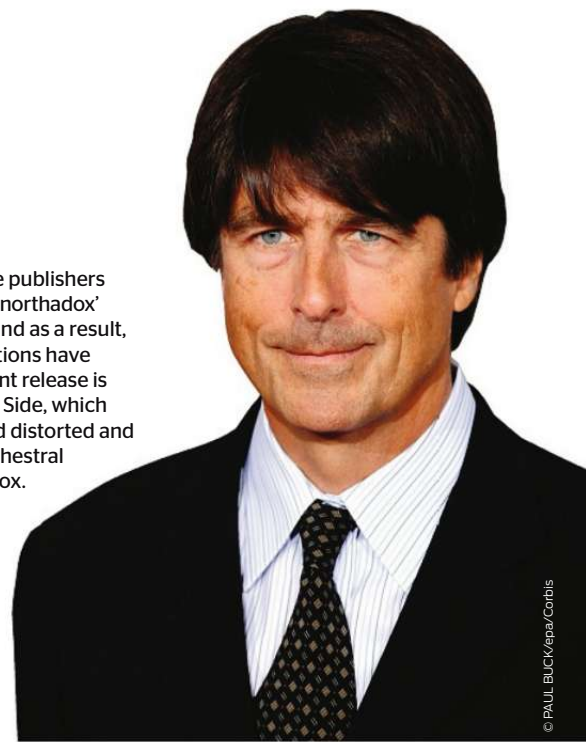
Subverting the normal tone of an instrument can have surprising results, which is why composers do it all the time for effect. For example, you can overblow the normally

inoffensive flute to distort the notes, or mute French horns to produce a far more subtle effect than the usual brass 'parp'.

Here we're going to take a soft harp sound and add effects and distortion to bring it out as a powerful lead instrument. You could also reverse this idea for instruments that traditionally carry harder melodies: take a trumpet or violin and EQ it softly, cutting the harsh tones so that it will sit happily in the background. Certain modern composers excel at this, notably Thomas Newman, whose instrumentation is often so layered with effects that it's hard to tell what the instruments are.

Some soundware publishers see the viability of 'unorthodox' orchestral palettes, and as a result, many sample collections have sprung up. One recent release is EastWest's The Dark Side, which gives you pre-loaded distorted and twisted rock and orchestral textures out of the box. But where's the fun in that? Come on - let's indulge in a little DIY.

Legendary American composer Thomas Newman is a master of tone



© PAUL BUCKEPA/Corbis

> Step by step

Turn a soft instrument tone into a distorted lead sound



1 > We start with a standard harp from Garritan Personal Orchestra - a superb sub-£200 orchestral ROMpler package. GPO is ideal for beginners as easy stereo stage and EQ controls are built into the player's mixer. (Audio on the DVD: **Harp original.wav**.)



2 > We EQ the sample with a bell-shaped curve to cut all the highs and lows, emphasising the mid-range with a big spike. We also add a chorus effect set to **50% dry/wet Mix**, **9% Intensity** (Depth) and **5Hz Rate**.



3 > We use Logic's Sample Delay plug-in to make the sound bounce back and forth between the left and right channels. You may have to pan the sample back to the middle slightly to even up the spectrum - we're panning to 1 o'clock (+15) to counter the effect.



4 > Next we add Logic's Overdrive effect on the **Hard and Loud** setting. You might want to compress the track at this point, too. Placing your compressor before the overdrive effect will make the distortion even more noticeable.



5 > Finally, we add the WATKAT tape delay plug-in (on the DVD). As you play the instrument you'll want to adjust the **Sustain** control so that the repeated delay taps don't overpower the mix. We've used automation to do this. (Audio: **Harp processed.wav**.)

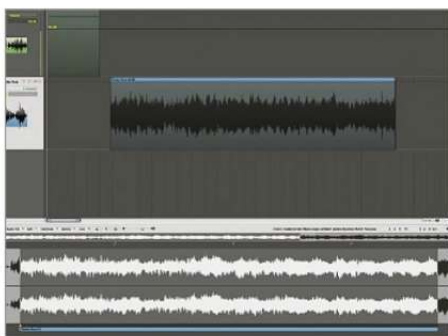
POWER TIP

> Tape distortion

The WATKAT tape delay plug-in is included on the **cm** DVD and can also be downloaded from www.genuinesoundware.com. It aims to replicate the old-school tape effects of the 1960s. As the virtual tape goes through the multiple capstans, subtle variations in tone and repetitions feed back into the mix to produce an analogue distortion effect.

> Step by step

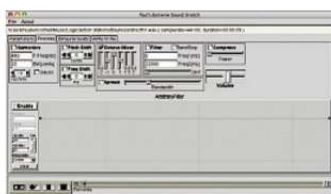
Stretch an orchestral sound to make a weird pad



1 > Take an orchestral sample played at a fast pace - we've chosen a fluttered flute. Select a small section and timestretch it in your sample editor. 500% of its original length should do the trick. Then apply an exciter to highlight the high frequencies, as we'll be messing with those next. (Audio on the DVD: **Flute raw.wav**.)

2 > Set up a bell-shaped EQ filter on your stretched sample. Next, automate the frequency and gain of the peak frequency (the top of the bell). In Logic, this is easily done by manually moving it around while playing the file in **Latch** mode. Next, do the same with the cutoff frequency for the bottom end. (Audio: **Flute EQd.wav**.)

3 > For our last trick, we throw in a lot of effects: a stereo spreader, an auto-filter (to sweep the filters from left to right) and a short, bright reverb. You could also gate the sound to make it sync rhythmically with your track. (Audio: **flute final.wav**.)



Turn a ten-second sample into a ten-minute track with Paulstretch

Paulstretch: the ultimate timebender

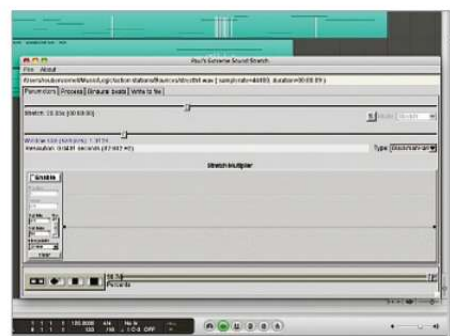
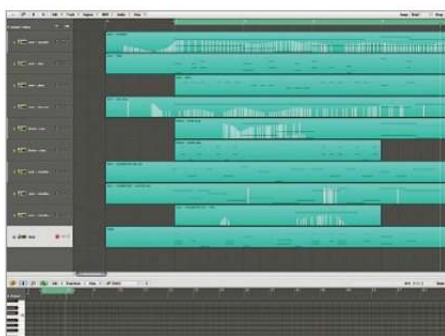
The timestretching tools built into most DAWs are great for making small adjustments to the timing of audio clips without affecting their pitch, but the results can sound decidedly choppy beyond the 200% mark.

The free Paulstretch application, however, analyses and retains the harmonics of the original clip over a much longer time span using 'spectral smoothing'. It's able to do mind-boggling things like make a five-second sample last for five hours. Audio is processed as millions of tiny sections ('windows'), then smoothed to iron out the clicks and flutters that come with long stretch times. The program includes a few effects, and there's an onboard compressor and a harmonic shifter with a small mixer to control the levels.

The interface is very basic and you can't run Paulstretch as a plug-in, but it's simple to use and very responsive. It also gives you real-time feedback on your sound as you change the parameters. If you want to stretch your samples by up to 1,000,000%, Paulstretch is for you. Find it at hypermammut.sourceforge.net/paulstretch and on the cm DVD.

> Step by step

Create background sounds with Paulstretch



1 > Create a 10-second, fast-moving orchestral section. We're using *Symphobia* for speed. Don't worry if it sounds a little messy or isn't quantised correctly (like our clip) - it doesn't matter. Bounce the clip down to a WAV and export it to Paulstretch. (Audio on the DVD: **Pstretch clip.wav**.)

2 > Timestretch the clip by a factor of **20** using the **Type** setting **Blackman Harris** and a **Window** size of around **1K**. Next, play around with the harmonics in the Process window and use the Octave Mixer tool to mix in **50%** of a **-1** and **+1** harmonic. (Audio: **Pstretch raw.wav**.)

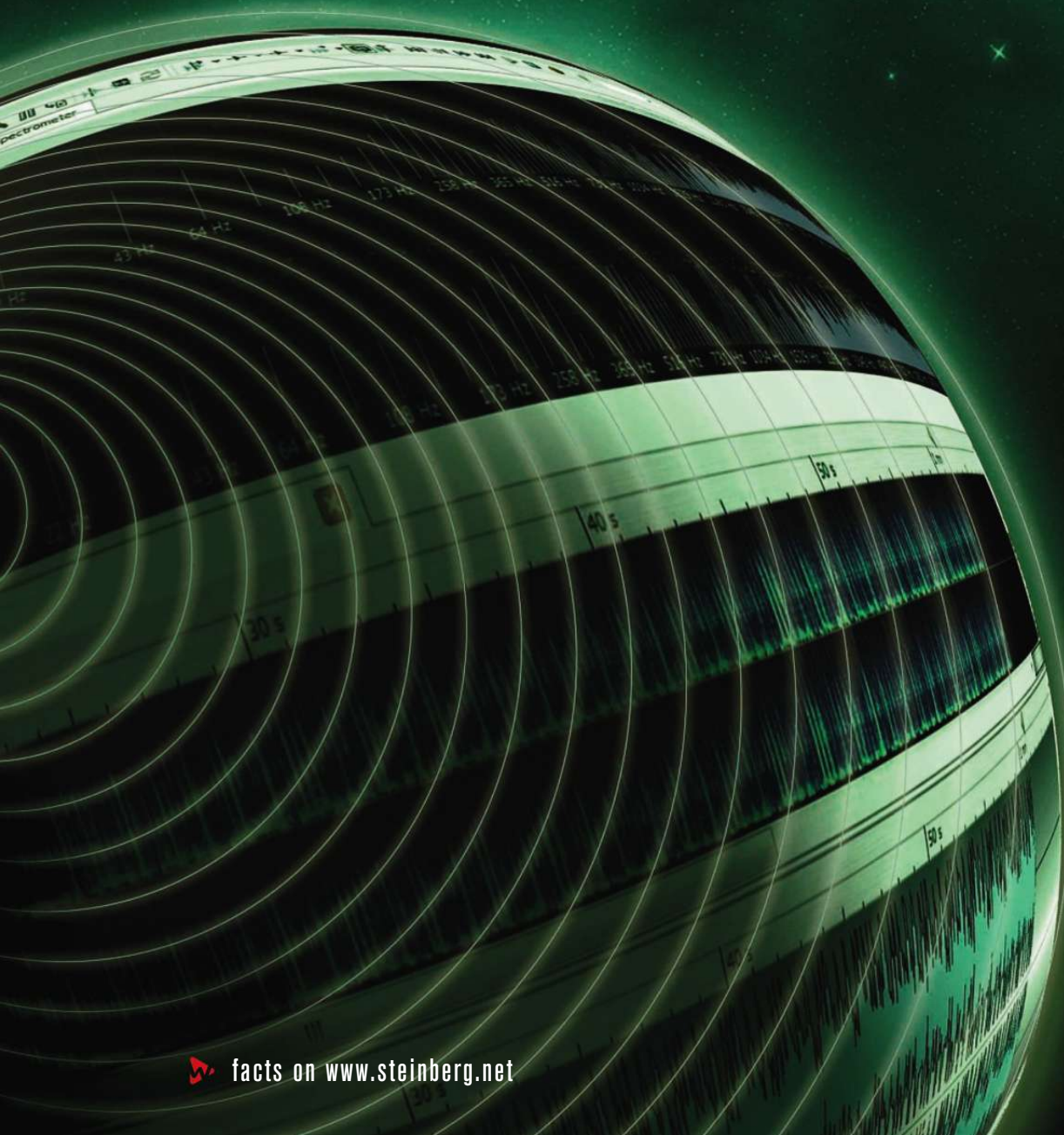


3 > Export this loop back to your sequencer and apply a long, dull reverb. EQ away some of the high tones to stop the sample being too shrill in the mix (the timestretching process can leave high-end artifacts).

4 > This long sample can now form the basis of a track - we use ours to support a chillout number with piano and clarinet. A four-band mix preset in iZotope's Ozone 4 brings out the warm midtones. (Audio: **Pstretch final.wav**.)



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Up the drama

So you've maxed out your RAM and CPU with a huge, full-sounding orchestral masterpiece of blockbuster proportions. How are you going to make it stand out?

Writers of primarily orchestral music have always used unusual effects to liven up their music and push the boundaries of sound even further – so that's one thing that classical composers and modern day dance music producers have in common! Richard Strauss used an orchestral 'wind machine' back in 1897, and big band jazz songs from the 1920s were full of swanee whistles and woodblocks to add to the party atmosphere. Looking specifically at film, Theremins

punctuated many 1950s B-movies, and as electronic music grew in popularity during the 1960s, entire movies were scored with analogue synths. The ubiquitous Moog starred on the soundtrack of 1971 classic *A Clockwork Orange*, for example.

Recent screen soundtracks have seen composers start to replace double basses with synth basslines, and harp and percussion sections with arpeggiated analogue bleeps. Aside from being more innovative, it seems that this style sells well, judging by how much this type of music is used on TV shows like *CSI* and *Desperate Housewives*.

This switch has also been prompted by tighter budgets for



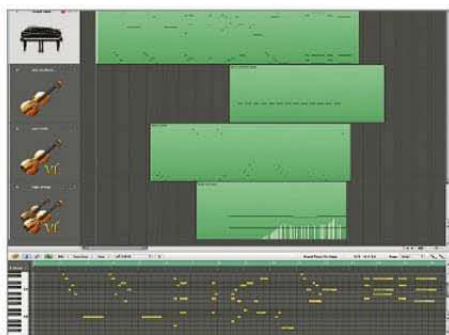
TV and film soundtracks. It's far easier to get away with using less realistic orchestral instruments from a sample library if other elements in your cue also sound electronic. Game producers have gone down this route too, the recent soundtrack for *Mass Effect 2* being a great example of the combination of old and new sounds.

In the tutorial below we show you how to create a clip right out of *CSI New York* using pizzicato violins and pianos combined with analogue synth sounds from Rob Pape's Albino 3 plug-in.

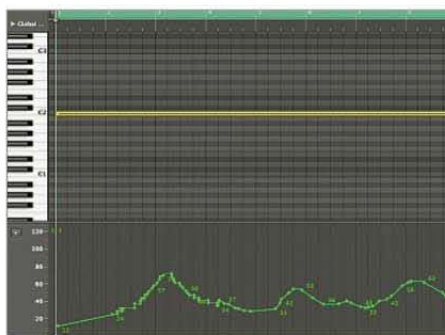
Mass Effect 2's soundtrack is a fusion of traditional instruments and new sounds

> Step by step

Add interest to orchestral film/TV-style scores



1 > Let's start with the orchestral instruments. First we sketch out a mysterious cue with piano and strings using the pizzicato (plucked) patches for double bass and violins. We also add a high violin section that comes in halfway through the piece. (Audio on the DVD: **Mysterious.wav**.)



2 > This sounds great on its own, but let's add a single-note drone from an analogue synth. We've chosen a pad patch called **Sandwalker** from Albino 3 (www.robpape.com), which transitions via the modwheel. Keep the wheel moving to create interest throughout the cue. (Audio: **Sandwalker.wav**.)

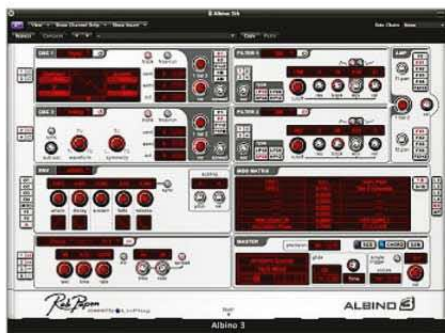


3 > As the piece is very freestyle and needs a bit of rhythm, a high, breathy and very filtered sound is added in rhythmic bursts. We've gone for an Albino patch called **Breeze**, which provides a rhythmic beat. Next we widen the sound and apply a subtle flanger. (Audio: **Breeze.wav**.)

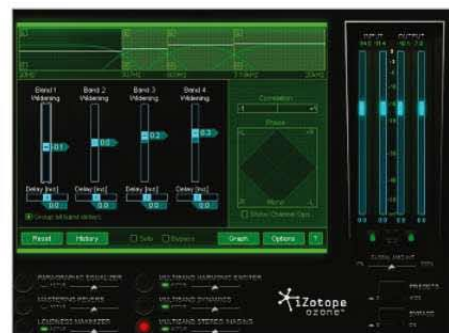
POWER TIP

>Randomise!

If you're using synth presets rather than creating your own sounds, at least make the time to add effects so that your sounds are different to the factory settings. If you don't have time to experiment with effects, some plug-ins have a **Random** button that will randomise all the settings to varying degrees. You're sure to find something unique if you just keep clicking! Once you've found something you like, edit the dials to remove any elements you don't like.



4 > There's just one more sound to add: the subtle **Dark Minor**, introducing more rhythm halfway through the track. A one-finger pulse is all that's needed. (Audio: **minor.wav**.)



5 > Finally we master the whole track with more stereo spread, excitement and compression to pull out all the interesting frequencies. We're using a mastering package (Ozone 4), but you could add the effects separately for the same kind of mix. (Audio: **Add analogue master.wav**.)

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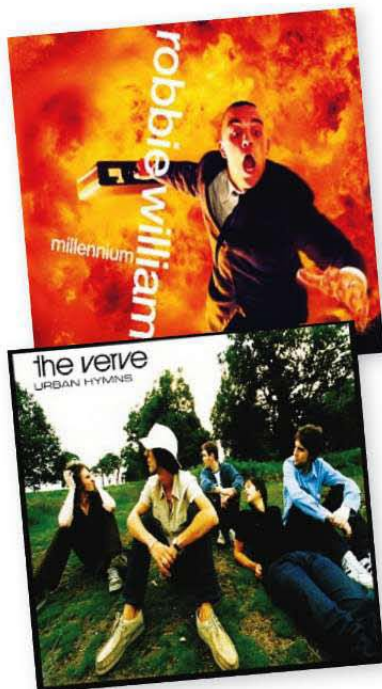
Seamus Haji

Big Love / CR2 / Club Azuli / Blanco y Negro

Good to see a website that works similarly to most music download sites. The best thing about Clickproduce is when I'm stuck in the studio I can spend time hunting for an 'inspirational' sample to kick things into gear.

Oliver Lang

Azuli / Toolroom / Cosmo / Loudbit / Bora Bora



Many pop tracks have used orchestral samples to great effect

Chopped and gated orchestral loops

Many big producers use either sampled orchestral clips or sounds cribbed from sample CDs to add interesting flavours to their pop songs. Think of Robbie Williams' *Millennium* (which uses a chunk of John Barry's *You Only Live Twice*) or the string loop from the Verve's *Bittersweet Symphony*, and it's easy to understand how using a memorable orchestral sample as the basis for your track can turn it from something conventional into something truly special. With this in mind, our next two walkthroughs show you how to modernise your orchestral loops.

One method is to chop the sample up. The easiest way to do

this is by manually slicing it, as shown on this page. Alternatively, you could insert a noise gate into the channel, which we'll also show you how to do on the facing page. This method is fiddlier to set up but more flexible in the long run.

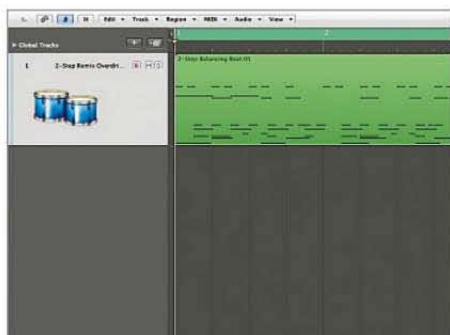
Loopy tunes

Start by picking the orchestral loop that you want to use. This could be a small snippet of a recording, or something that you've composed yourself in your DAW and bounced down to a stereo sample. As we'll be chopping it up, it's best to choose a sample that isn't too complex. A single instrument or short phrase using a group of

instruments will be best. Slow phrases also work well, because you'll be looping and chopping them to create a rhythm. Try to keep the amount of reverb and other effects on the original sample to a minimum so that you can add them in as you please later.

We're using Logic in the following walkthroughs (well, all of the walkthroughs, in fact), as it employs a very neat way of uniformly chopping long samples into tiny pieces automatically (see step 3 below). The same result can be achieved in any DAW, but it might require a few more steps, depending on the functionality of your particular package.

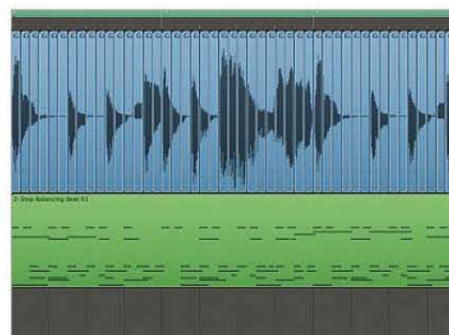
> Step by step **Manually slice an orchestral loop**



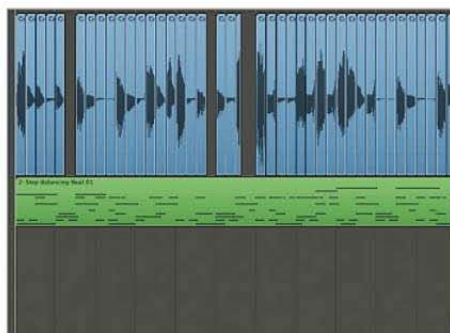
1 > Set your tempo and drop in a looped beat to keep the piece in time. We're about to do a lot of chopping and moving things around, so make sure that your DAW's Snap setting is on. (Audio on the DVD: **Beat and strings raw.wav**.)



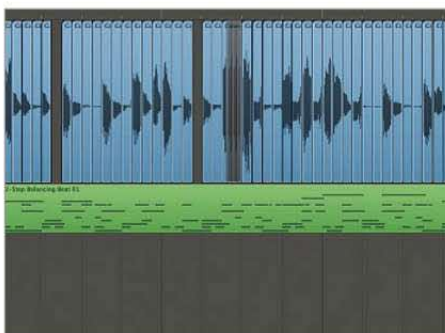
2 > Take your orchestral sample and match it to the beat so that it syncs up. Insert a noise gate plug-in and set its threshold to cut out the quietest sounds and any reverb tails, making the part drier but still melodically and rhythmically intact. (Audio: **Strings matched.wav**.)



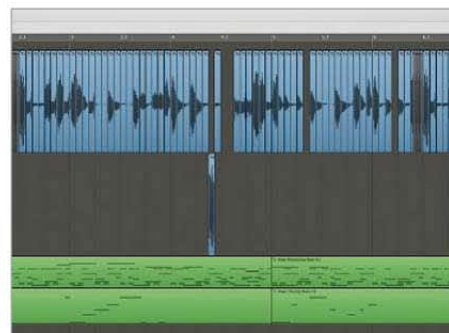
3 > Now carve your orchestral loop into small sections of equal length. In Logic, select the Scissors tool and hold the **Alt** key as you click to divide the first section on the far left. Logic will take the length of your first cut and repeat it across the rest of the phrase.



4 > Zoom in on your phrase and begin removing slices, randomly or not. You can leave these parts silent or replace them with other sections from elsewhere in the phrase. Go crazy - the more you rearrange, the more interesting the phrase will be. (Audio: **Strings chopped.wav**.)



5 > Once you're finished getting creative with the rearrangement, add some looped sections to fill in some of the gaps. It's starting to sound good! Add a little reverb so that the short sections flow into each other better. We also elect to apply a stereo spreader effect. (Audio: **Strings chopped verb.wav**.)



6 > Finally, take just one very short phrase or note and copy it to another track. Apply a long, wide reverb and let track 1 play while the reverb is still going on track 2. We add a bassline to finish things off and master the whole piece with Ozone 4. (Audio: **Strings chopped final.wav**.)

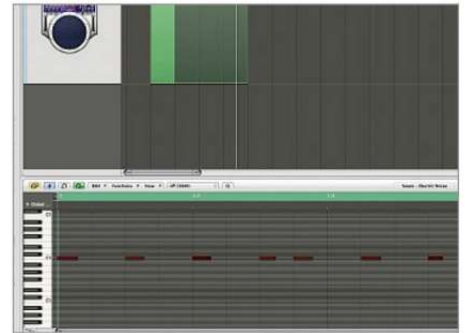
> Step by step Gate an orchestral loop using a sidechain



1 > First we use ProjectSAM's Symphobia to write a simple string section. Long, sustained notes are the best for this type of work, so we go for the **Str Ens sustain s** preset. It features legato strings mapped across the whole keyboard. Next, we add a brass melody. Again the emphasis is on a simple, long melody, as we'll be gating it into much smaller sections. (Audio on the DVD: **Strings and brass.wav**.)



2 > Next we add a choir track. This one comes from EastWest Symphonic Choir's **Full Chorus** preset. We're using block chords again here. The modwheel is mapped to control the intensity of the singing so that we can emulate the way a real choir would naturally sing the notes. (Audio: **Choir.wav**.)



3 > On another track, we need to set up an instrument to rhythmically trigger our gate via its sidechain input. Choose an instrument with a fast attack and a fast release – it doesn't matter what it is as we're not actually going to hear it. We've chosen a snare drum. Tap out a rhythm – write a short section and loop it. (Audio: **Trigger snare.wav**.)



4 > Next, set up an effects send from that snare track to an auxiliary output. We're sending it to **Bus 1** here. Turn off the **Snare** track's audio output, and do the same for the **Bus 1** track. This track will be used to trigger the gate plug-in on the orchestra tracks.



5 > Add a sidechain-equipped gate to each orchestral track and set its sidechain to be triggered by **Bus 1**. Set a high **Threshold**, and the volume **Reduction** to **-100**. (Audio: **Gated.wav**.)



6 > Your gating will probably produce nasty clicks at the start and end of each transient. Set the gate's **Attack** and **Release** times to **5ms** – this will apply a very fast fade-in and -out to each sound, stopping the sample from cutting in with a click. (File: **no click.wav**.)



7 > This sounds great, but it's still a bit plain. Let's add some effects to spice things up. Set up two more effects sends, **Bus 2** and **Bus 3**. Pan them hard left and hard right and send 100% of each orchestral track to both.



8 > Add a different effect to each channel. We've used a flanger on the left (**Bus 2**) and a phaser on the right (**Bus 3**). You can send the audio outputs to another bus for more effects or just hurry them straight to the **Master** channel, which is what we're doing here. A small amount of reverb breaks up some of the gate's choppiness. (Audio: **Gated orchestra final.wav**.)

POWER TIP

>Sidechain spin

The great thing about using a sidechain noise gate rather than slicing up the tracks manually is that it leaves you free to change the pattern of the gating at any point during the writing process. All you need to do is to change the arrangement of the snare part. Alternatively, you could replace the snare with an arpeggiated part that would retrigger the orchestral gates automatically. The creative possibilities are endless and it works with all kinds of instruments. See if you can think up any more innovative ways to fool around with your sound.

Bring the orchestra to the dance floor



Scores of dance tracks use recognisable classical instruments to add both intrigue and oomph

Up to this point, we've looked at how to mess with orchestral sounds to give them a modern edge suitable for film scores, TV soundtracks and dance floor productions. But what if your track is already a masterpiece, and you want to add some classical realism to bring out its drama?

Electronic dance music shamelessly pumps squelchy basslines and snarling leads through the sound system to drag punters helplessly onto the dance floor. Things can be a little more refined than that, though: more subtle instrumentation can still entice clubbers to the floor. Labels like Hed Kandi and producers such as BT and Way Out West make sure they keep a broad range of instrumentation - including many culled from orchestral sections - at their fingertips. Skim through Lady Gaga's album *The Fame Monster* and you'll hear gypsy violins,

"Skim through Lady Gaga's *The Fame Monster* and you'll hear gypsy violins, harps and accordions"

classical harps and even accordions. It seems that dance artists are falling over themselves to feature bowed and plucked strings. Their point is, why limit yourself to a certain range of sounds when you can use so many?

In the walkthrough to the right we're shoehorning some classical-sounding strings into a breakbeat piece. To make things sound as real as possible, we'll use all of the different sections, including violins, cello, double basses and violas. We will also have a look at EQing and compressing the sounds so that they fit well within the mix - essential skills in any genre of dance music production.

We're using Peter Siedlaczek's String Essential package because it features all of the required articulations, including staccato and legato patches. We're only using the close mic strings in this walkthrough. Our trick of adding a universal bus reverb to tie all the tracks together is a neat technique if you're using several different-sounding instruments together in one song, so keep it in mind beyond these pages.

ESSENTIAL LISTENING

JEFF WAYNE THE EVE OF WAR (HYBRID'S FIRE IN THE SKY REMIX)

Seminal 70s concept album *War Of The Worlds* is a cinematic soundscape like no other, and its 30th anniversary saw it remixed by breakbeat duo Hybrid. Weaving dark breaks and a dub bassline in with the original strings, the remix keeps the spirit of the original while moving it forward for a new generation.

Hybrid are big fans of the classical sound. The promotion of their second LP, *Morning Sci-Fi*, saw them explaining their influences in an interview with Jive magazine: "We've been listening to absolutely anything other than dance music," said Chris Healings. "We've been listening to stuff like The Doves, Aqualung, Radiohead, Soulwax and lots of jangly indie guitar bands, and classical music, particularly Arvo Part and Alexander Gretchaninov.



"I love the way that film scores achieve moods. We take a lot of cues from that: we analyse a lot of it and try to write it into our own music. We get things to a critical point and then bring someone in to score the music for us - they'll come with us when we go to Russia or wherever to make sure it's conducted and recorded properly. He'll make what we've done work for the orchestra. Then we take it back, chew it through the machine some more and put it back in."

ESSENTIAL LISTENING

FREEMASONS UNINVITED

Freemasons' latest album *Shakedown* 2 features lots of classical orchestration under the guise of 'dance music'. James Wiltshire and Russell Small have reinvented happy house without ever straying into cheesy one-finger riff territory - and they've done it using tight melodies and effective orchestration.

The bootleg of *Uninvited* featured the original Alanis Morissette vocal, and Freemasons produced it just for their DJ sets. One night it got nicked from the CD player when a forgetful Freemason left it at a gig. It was bootlegged onto the web and the number of downloads was so huge that the pair decided to revocal it and give it a full release. They used a string section scored by renowned arranger Simon Hale and performed by the London Session Orchestra.

"We used live strings because nothing can come close to their

Freemasons Uninvited



sound when played and recorded well," said James, in an interview with dontstayin.com. "Some years ago I worked out of the London recording studio session circuit, so I knew all the best people to get. Our biggest challenge was to get them to fit with an electronic backing - strings are incredibly resonant instruments and take up lots of room. *Uninvited*'s final mixes took two weeks to complete, but it was worth every moment."

> Step by step **Add orchestral strings to a dance track**

When panning a string ensemble, remember that they always sit in a certain arrangement

1 > We start by setting the rhythm with a breakbeat (or two). We have two different loops panned hard left and hard right. We also add a shaker panned centrally to tie the beats together. (Audio on the DVD: **Break strings beats.wav**.)

2 > Next we add a bassline and some squelchy TB-303-style acid sounds from Sylenth1 (www.lennardigital.com) to give the bottom end some kick. We also add a lone piano line with an echo. Make sure that the sounds are clean and free of reverb. (File: **Break strings bass.wav**.)



3 > Next we add a bus channel (**Bus 1**) and set a long, bright reverb, cutting the **Dry** output to **0%**. We can send varying percentages of the other dry tracks to this bus to provide the same reverb but in varying amounts. Keep the reverb tight by reducing the **Predelay** to **0**.

4 > We add our orchestral tracks using staccato and legato patches. Make sure each section of the strings is panned suitably (see right). We set up an Ozone 4 plug-in so that we can EQ the strings as a group. (Audio: **Break strings raw.wav**.)



5 > We route the strings 100% through the **Bus 1** reverb and set up a compressor with slow **Attack** and **Release** time to stop them fading into the background when played softly. They need to stand out above the forceful beats. (Audio: **Break strings comp.wav**.)

6 > We send 50% of the bassline and 303 tracks to **Bus 1**, too, along with 100% of the piano. Solo **Bus 1** to check the levels. You especially want to watch out for the strings reverb becoming too overpowering. (Audio: **Break strings reverb.wav**, **Break strings final.wav**.)

String secrets

Traditional string ensembles vary in size from the simple string quartet (two violins, viola and cello) to an orchestral section of 60+ players spread across the various instruments. But no matter what the size of ensemble, the soundstage should be more or less the same: high instruments on the left through to low ones on the right.

So, for a concert hall spread, pan first violins to 8 o'clock, second violins to 10 o'clock, violas between 12 and 1 o'clock, cellos to 3 o'clock and double basses to 5 o'clock. However, if you have no bassline in the mix other than that played by the double basses, this setup can skew the bass to the right. If that's the case, just bring the double basses back to the centre.

There are many more general mixing tips for strings that can help to neaten up your tracks. For legato passages, a long, wet reverb sounds great, but if your strings are faster, increase the Dry/Wet ratio towards a closer, drier sound. Tie the reverb to the track by turning off predelay and early reflections.

You don't have to go louder to be heard more clearly. Solo string parts will stand out if you cut the reverb completely - this will bring them to the front of the mix.

Listen to your string section all the way through and watch out for points when certain sections overpower others. When you've identified any problem areas, adjust the EQ throughout the piece to counter them. Delicate EQing won't be noticed by the listener but will create a smoother sound.

Some sample packages will include the 'correct' reverb levels and panning for each of the different instruments within the samples themselves to make life super-easy.

Once you've found a good template for your strings, save it! Balancing strings is challenging and you don't want to have to start afresh for every track you write.

> make music now / orchestral extremes

> Step by step **Combine orchestral and modern percussion**



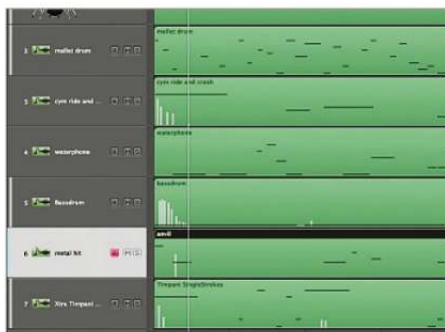
1 > Start with a standard rock drum kit loop and EQ away the very bottom end – everything below around **200Hz**. This is where your orchestral bass drum will sit. Add a fast, tight compressor to bring the drums to the front of the mix. (Audio on the DVD: **Rock kit.wav**.)



2 > Add a timpani line and again cut everything below **200Hz** so as to not overwhelm the bottom end when we add the bass drum in the next step. A little goes a very long way here: remember, this is a *big* drum. (Audio: **Timpani.wav**.)



3 > We put in an orchestral Wagner bass drum and cut everything **above 200Hz**. This drum will be the foundation of the loop, and it's a powerful beast, which is why we're sitting it at the bottom end of the mix in its own EQ range – to prevent mudiness. (Audio: **Wagner.wav**.)



4 > We finish things off with a few orchestral cymbals, a waterphone and some metal hits from the World Impact Global Percussion library. These unusual hits provide some great variations on the standard orchestral kit. (File: **Driving drums final.wav**.)

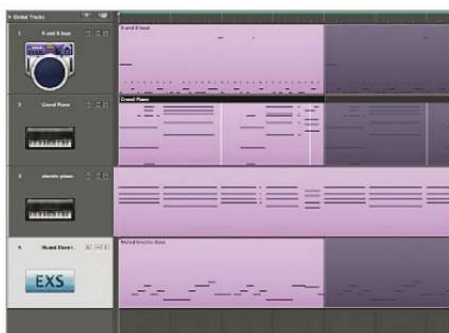
Crash bang wallop

The traditional use of drums and percussion within orchestral arrangements is to emphasise and reinforce the emotions conveyed by other instruments in the orchestra. Orchestral percussion is seldom used as instrumentation in its own right.

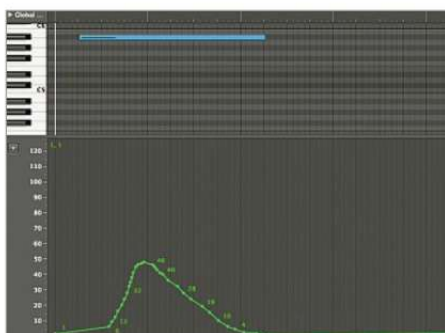
Occasionally contemporary artists grab hold of orchestral percussion and sprinkle it with abandon over their tracks. Just think of Mike Oldfield's *Tubular Bells*, or take a listen to the Pet Shop Boys' *Go West* to hear how fat timpani hits can reinforce percussion sections. You don't hear many 90s dance tracks without some kind of reversed crash cymbal, or many ballads without tinkling wind chimes.

In these two walkthroughs we'll show you how to combine orchestral percussion with standard drum kits to create some unique rhythm sections. There really is no limit to the noises that tampering with orchestral sounds can create. In the first walkthrough we add timpani and other percussion instruments to a basic drum loop to create a driving and urgent beat, while the second example sees us keeping the effects more subtle for an R&B slow jam.

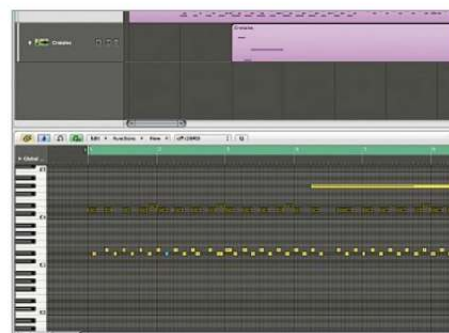
> Step by step **Add subtle orchestral percussion**



1 > We set up our slow jam instruments – slinky beat, electric piano, synth bass and grand piano – and load up Garritan Personal Orchestra's Aria Player with some basic orchestral percussion. (Audio on the DVD: **Slow jam only synths.wav**.)



2 > Cymbal rides will make this track flow nicely. We use our keyboard's modwheel to subtly increase and decrease the volume of the cymbals. We also add a triangle tinkle at the beginning of each bar. (Audio: **Slow jam tri and cym.wav**.)



3 > Woodblocks and shakers complement the track, while wind chimes provide a classic sound that fits in nicely. Finally we add crotales – a set of tiny, thick orchestral cymbals. (Audio: **Slow jam shakers and crotales.wav**, **Slow jam final.wav**.)

Are You Geek Enough?



This is ACE. Any Cable Everywhere. No compromises.

ACE belongs to a new generation of synthesizers developed with the latest, fastest computers in mind. ACE is capable of those crazy tricks you could expect from expensive analogue modulars, but hardly from a plug-in. Anything can be patched into anything, everything runs faster than audio rate. LFOs go up to 20kHz. Envelopes are snappy as a whip. Cross-modulation sounds right. LFOs, MIDI and envelopes can be run through resonant VCFs. Go wild and smile while you feed modules back into themselves. ACE does some sick stuff - luckily you'll never run out of patch cords.

ACE may be the best emulation of an analogue synth that never was.

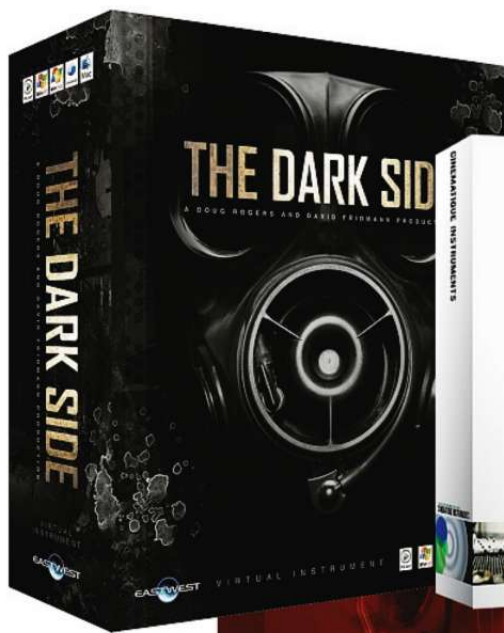
Grab the demo for all common plug-in formats and platforms here*:

www.u-he.com



Urs Heckmann - Audio Software

*while you're at it, check out the award winning Zebra, Uhbik, Filterscape and More Feedback Machine too. Same developer, same website, same fun factor.



There are hundreds of orchestral plug-ins out there, so choose packs featuring mangled samples to make more interesting music

Instrumental options



Plug-in instruments that emulate the many elements of real orchestras are legion, but you really have to hunt through the options to find more interesting sounds. Don't let this market saturation put you off, though: we've done some snooping for you and uncovered several virtual instrument packages that each offer something more left-field than the usual string and brass collections.

ProjectSAM's very recent release *Symphobia 2* (www.projectsam.com)

features an innovative orchestral palette that builds on the foundations of its predecessor. All the usual orchestral instruments are present and correct, but the samples are presented as ensemble performances instead of as individual instrumentation. This means that you can find a great selection of overblown winds, clustered note effects and all sorts of strange string performances within the collection. *Symphobia 2* is great for emulating orchestral techniques that other sample libraries struggle to make sound realistic. You don't get many velocity layers (sometimes only one), but you do get 33GB of unusual articulations to play with. Expect to pay almost £1000 for this heavyweight.

Cinematique Instruments (cinematique-instruments.com) covers string instruments from centuries gone by, including zithers, auto harps and celtic strings. As a bonus, the producers have also packed in a selection of percussion samples chosen especially for their weirdness. The instruments can be bought as a package (£160) or individually for around £15 per instrument. You can see the various instruments in action on the website.

If you need quick and easy pads with simple descriptions, head for Native Instruments' *Absynth Twilights*. The patches are infinitely adjustable, and happily the factory presets are already winners. The huge sample library features strings, horns and choirs, all of which are twisted magnificently to give an otherworldly effect - and at €49, the whole thing is a deliciously creative steal.

No money? No probs

There are also many free oddball sounds to be found on the web. VST 4 Free (www.vst4free.com) brings

"The producers have broken all the musical rules to distort each of these instruments to the limit"

together many usable ROMplers. Highlights in the Folk/Ethnic section include some truly unusual instruments: If you've ever needed to emulate the sound you get when you rub your finger around the edge of a glass, you'll want to check out *Glass Armanica*. There's also a kazoo plug-in and a very usable accordion.

Babel Audio (babelaudio.net) is home to a small selection of freebies, including a lovely angel glockenspiel and some superbly recorded wind chimes.

Navigation is something of a nightmare, but hunt around enough and you're bound to stumble across something unusual on VST Planet (www.vstplanet.com), the home of freeware plug-ins. There are tons of free effects plug-ins here, all of which you can use to mess up your orchestra to varying degrees. We particularly like *Mutant Reverb* for its high sound-warping potential. **cm**

EASTERN PROMISE

In this feature we've looked at the Western orchestra and how to use it in different and unusual ways. However, there are whole other continents full of traditional musical instruments that can bring some more life to your productions. Dropping a bamboo flute or sitar into a pop track gives a surprising twist to the piece, and whole sample libraries have been developed to cater specifically to this need.

Quantum Leap's *Silk* (www.soundsonline.com) focuses on the sounds of the Silk Road region of China, Persia and India. It contains a ton of sounds, including a 30-piece Persian string section. This is a comprehensive, exquisitely sampled collection. At over £300, it's not cheap, but these are some very



Give your tracks a taste of India and the far east with Quantum Leap *Silk*

serious instruments.

GarageBand and Logic users can pick up the *World Music Jam Pack* for £70 (www.apple.com). This packs in 12GB of samples and instruments in Apple Loops and GarageBand instrument formats. The sounds are very easy to play 'live' as the keyboard modwheel is mapped to switch between each instrument's different playing styles. For example, the Chinese flute includes sustain/fluttered/glide and grace note effects, depending on what position your modwheel is in. In practice this works very much like a sampler's key switch command, and you can achieve realistic results through a combination of note velocity, pitchbend and modwheel position.



Why chain yourself to one culture? Go global with *World Music Jam Pack*

Arturia[®]
MUSICAL INSTRUMENTS



25 ANALOG EXPERIENCE THE PLAYER

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quality keyboard perfect for the mobile musician.

- Includes Analog Player with 1000 synths sounds
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cmDVD

PC MAC

Magix Samplitude 11 Silver, our 24-bit Upfront House Collection, the latest reader demos, dubstep producer FuntCase on video and more, all on this issue's disc!

DVD contents Full software

Full software

Magix Samplitude 11 Silver (PC)
GSI WatKat (Mac/PC)
Paul's Extreme Sound Stretch (PC)
Togu Audio Line TAL-NoiseMaker (PC/Mac)

Demo software

Blip Interactive NanoStudio (PC/Mac)
Brainworx bx_shredspread (PC/Mac)
MeldaProduction Total Bundle (PC/Mac)
PSP Audioware PSP 85 (PC/Mac)
Sugar Bytes Guitarist (PC/Mac)

Tutorial files

cm Focus
cm Studio Session
Easy Guide
Orchestral Extremes
Off the Dial
Q&A
Samplitude
Small Wonder
Sound Essentials
The cm Guide to Spectral
Audio Editing
Totally Trackers
The White Stuff

Samples

The 24-Bit cm Upfront House Collection, including beats and bass loops, drum hits, one-shots, sound effects and synth multisamples

Reader Music

BelletroniQ - *Sub Aquatics*
Butterfly Stone - *Feeling in my Bones*
Mr. Dishcloth - *Shinobu*
Sheldon Dearn - *Prismatic*

MAGIX SAMPLITUDE 11 SILVER (PC)

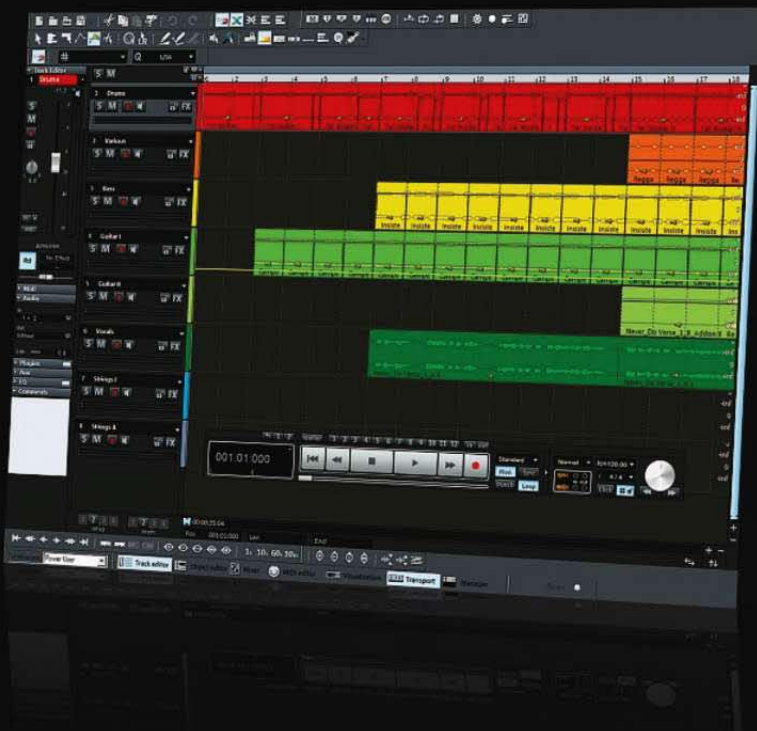
This awesome eight-track DAW has powerful audio and MIDI editing capabilities, full VST compatibility and everything else you need to make complete tracks today. Samplitude 11 Silver requires registration via email address - see the tutorial over the page for full instructions.

System requirements

PC 1.5 GHz CPU, 1GB RAM,
Windows XP or later.

Web www.samplitude.com

Magix Samplitude 11 Silver
is yours only with this issue
of *Computer Music*!



GSI WATKAT (MAC/PC)

Get that authentic tape delay sound with this clone of the classic Watkins Copicat delay effect. With light system requirements and MIDI learn capabilities, it's particularly useful for those looking to mess around with sounds live.

System requirements

PC VST host

Mac AU/VST host

Web genuinesoundware.com

PAUL'S EXTREME SOUND STRETCH (PC)

This amazing program can turn practically any piece of audio into a majestic ambient track - and all in real time! For making epic pads and soundscapes, or just as entertainment in its own right, Sound Stretch really is invaluable.

System requirements

PC Windows XP or later

Web hypermammut.sourceforge.net/paulstretch/

TOGU AUDIO LINE TAL-NOISEMAKER (PC/MAC)

The latest plug-in synthseiser from TAL boasts tons of tasty features and their most accessible interface yet, making it an essential install for any synth-head.

System requirements

PC VST host

Mac AU/VST host

Web kunz.corrupt.ch

Demo software

BLIP INTERACTIVE NANOSTUDIO (PC/MAC)

This desktop taster of the awesome iOS app offers all the same features as its mobile counterpart. Get it installed and turn to p54 for our essential guide to this amazing little DAW.

System requirements

Mac Intel CPU, OS X 10.4 or later

PC Windows XP or later

Web www.blipinteractive.co.uk

BRAINWORX BX_SHREDSPREAD (PC/MAC)

Designed for getting doubled guitar parts as wide and fat as possible, bx_shredspread is billed as an intelligent stereo processor. This trial version will expire after 14 days.

System requirements

Mac 1GHz CPU, 256MB RAM, OS X 10.4 or later, RTAS/VST host

PC 1GHz CPU, 256MB RAM, Windows 2000 or later, RTAS/VST host

Web www.brainworx-music.de

MELDA PRODUCTION TOTAL BUNDLE (PC/MAC)

This complete collection of MeldaProduction demos features a wealth of effects and analysis tools, as well as all of their free plug-ins. The trial versions emit noise periodically, and will open the MeldaProduction website on launch.

System requirements

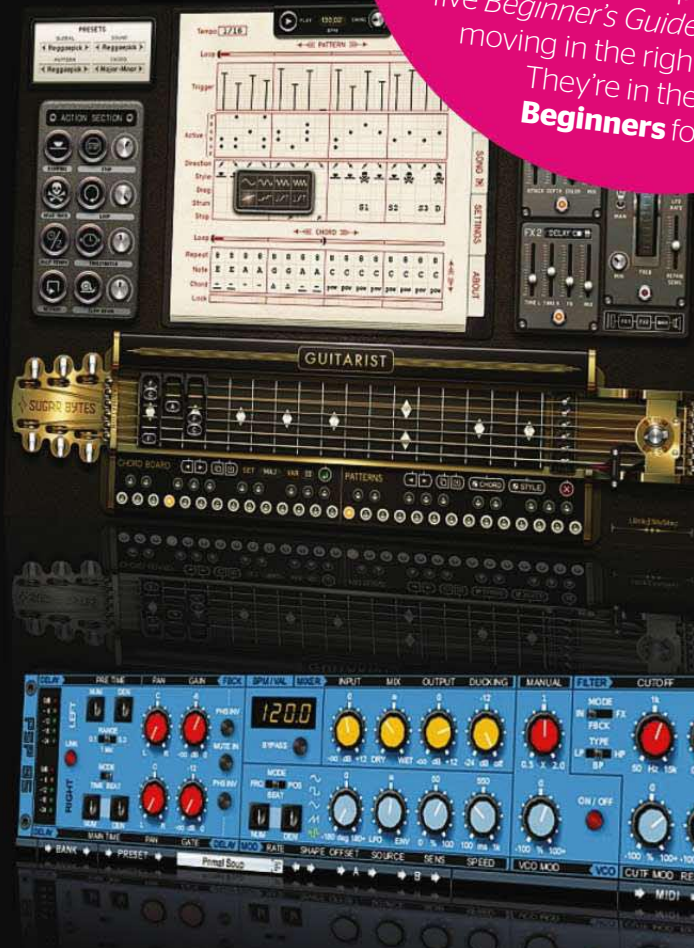
Mac Intel CPU, OS X 10.5 or later, AU/VST host

PC SSE2-capable CPU, Windows XP or later, VST host

Web www.meldaproduct.com

PSP AUDIOWARE PSP 85 (PC/MAC)

PSP Audiware's follow up to their much-loved PSP 84 plug-in, this far-out delay effect includes cool new features such as LFO synchronisation to track position, sidechain ducking, delay line panning, gating and more. You can use this demo version for 14 days, after which you'll need to buy a licence to continue with it.



Get started with our
BEGINNER'S GUIDES
If you're new to computer music, our five *Beginner's Guides* will get you moving in the right direction. They're in the **CM Beginners** folder.

Trick your listeners into thinking you're really wielding an axe with Sugar Bytes' Guitarist

Find out what we really think of PSP Audiware's PSP 85 delay in the review on p102

System requirements

PC Windows XP SP2 or later, RTAS or VST host

Mac OS X 10.5 or later, AU, RTAS or VST host

Web www.soundradix.com

SUGAR BYTES GUITARIST (PC/MAC)

Program your own guitar parts with Sugar Bytes' latest instrument. It includes a built-in step sequencer along with amps, pedals and

effects to help you get great tones. The demo version won't save patches or recall settings with your project, times out after each 30-minute session and expires after 30 days.

System requirements

Mac 2GHz CPU, 1GB RAM, OS X 10.4 or later, AU/VST host

PC 2GHz CPU, 1GB RAM, Windows XP or later, VST host

Web www.sugar-bytes.com

USING THE DVD INTERFACE

- 1 Put the DVD-ROM in your DVD drive, let it spin up, and wait for the interface to appear. If it doesn't autorun, browse to it in Explorer/Finder and double-click **Computer Music for OS X** or **PC**, as appropriate. Read the disclaimer and click **Accept** when you're done.
- 2 The main interface will open. Mouse over the links for each section to get a brief description of their contents, and click on your button of choice – in our case, **Software**...
- 3 An Explorer/Finder window will open, showing you the contents of that folder. Any executable files can be run directly from the DVD by double-clicking them. Demos are generally presented as installer applications, but check any Readme text files for additional installation information.

PROGRAMS & PLUG-INS

Most of the programs on the DVD-ROM are presented as installers – simply double-click the installer icon and the application does the rest. However, plug-ins are often presented as .dll (PC), .vst or .component (Mac) files. To 'plug' the plug-in into your VST/AU host, just copy the plug-in file into your VST or AU plug-ins folder, as appropriate.

SAMPLES

Every month we give you a wealth of royalty-free samples! You can use them in your music in any way you see fit, without having to pay a penny, even if you end up commercially releasing your work. The only thing you *can't* do is redistribute them as samples – eg, by making a sample CD with them. To install our samples, simply copy them to your hard drive.

>Exclusive full software!

Magix **PC**

Samplitude 11 Silver



This special edition of Magix's fantastic PC DAW is yours to keep! We show you how to get it installed and start putting your first project together

> Magix's Samplitude is one of the most sophisticated DAWs around, offering a plethora of advanced features. On this issue's **cm DVD** you'll find a special version of the latest edition: Samplitude 11 Silver. Silver has fewer features than the full-on Samplitude and Samplitude Pro versions, as well as a few

restrictions - the most notable being that you're limited to eight tracks. However, it still has the core audio, MIDI recording/editing and plug-in hosting capabilities of the commercial versions, and its more than up to the job of enabling you to create high-quality music.

Samplitude 11 Silver's myriad features are far too numerous to

cover comprehensively here, but highlights include a resizable virtual mixer, DX and VST instrument and effect hosting, various built-in visualisation modes, in-app media management, aux routing, built-in wave and MIDI editors, offline effects processing and more.

There's plenty for both novices and experienced musicians to get

their teeth into, and in this step-by-step guide we'll take you through its installation, setup and basic operation. You'll need an email account to receive the authorisation code, but Samplitude 11 Silver doesn't require your computer to be online during activation. So, without further ado, grab your **cm DVD** and let's go!

TOOLBAR

Icons for file management, editing and a host of other functions

TIMELINE

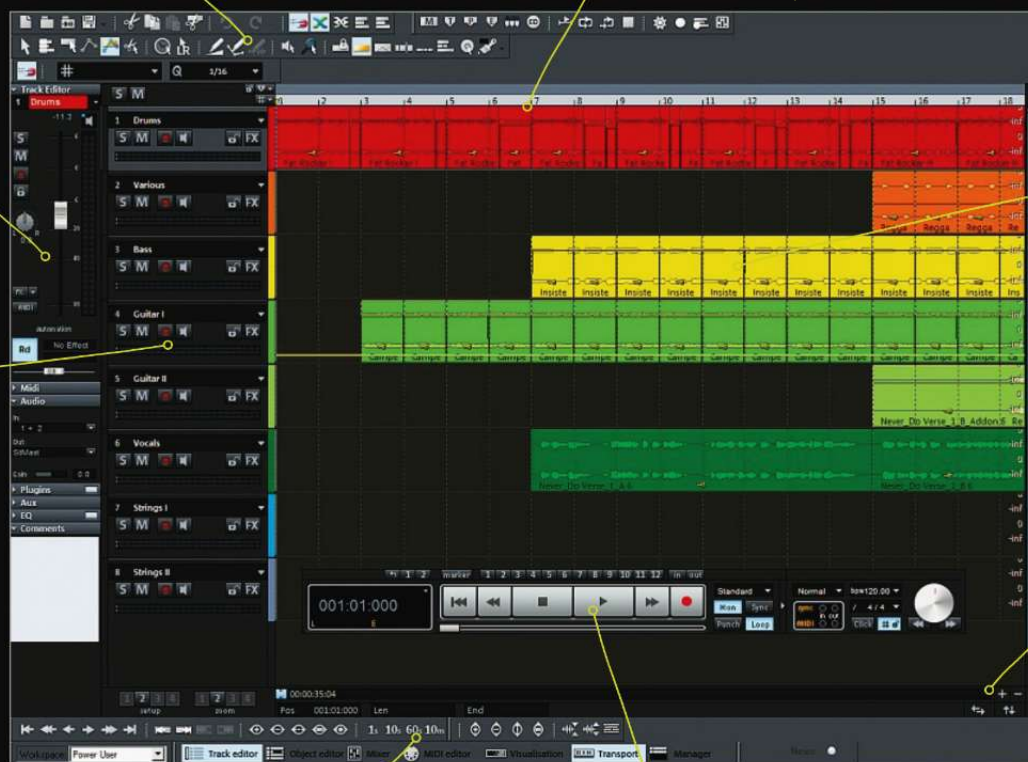
Displays time in a variety of formats, including beats and bars, seconds, milliseconds, samples or even feet of film!

TRACK EDITOR

Sets the parameters of the currently selected track, including audio and MIDI settings

TRACK BOX

Arm tracks for recording here, plus volume, pan, mute, solo and add FX



PROJECT WINDOW
Displays audio and MIDI objects

ZOOM BUTTONS
Zoom in and out of the Project window

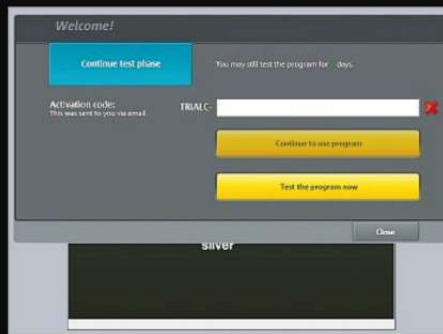
STATUS DISPLAY
Shows CPU load and calculation times, plus shortcuts to various screens

TRANSPORT BAR
Record, play back, navigate through your project and more with these tape-style transport buttons

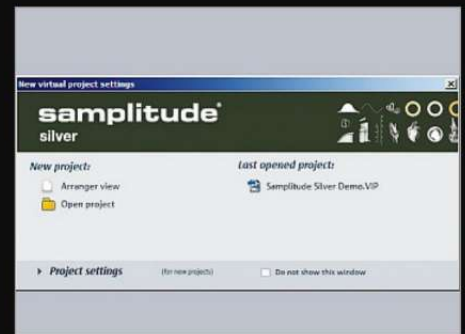
> Step by step Get to know Samplitude



1 > Start by opening the **Software\PC Software\Full Software\Samplitude** folder on the DVD. In there you'll find **Samplitude_11_Silver_en-US.exe**. Copy this to your desktop and double-click it to run it. Follow the on-screen instructions to install the software.



2 > Click the link that says **Register the Program** and use it without any limitations. Follow the instructions and register for a login. You will receive an email including your registration code for Samplitude 11 Silver. Enter this into the **TRIALC** field on the splash screen to register the software.



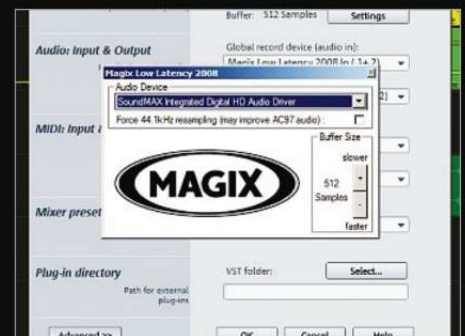
3 > The first thing you'll see is the New Virtual Project Settings window. This gives you several options, including creating a new project (Arranger view), opening an older project or loading the demo project. Let's start with the demo - click **Samplitude Silver Demo.vip** to load it up.



4 > The project will load and you'll see the Arranger view appear. Before we attempt to play back the demo project, let's ensure that the audio driver settings are optimal. Select **Options>System/Audio** from the menu bar. In the **Soundcard & driver** field you'll see the currently selected audio driver.



5 > By default the audio driver will be set to **ASIO Magix Low Latency 2008**, but if you have a dedicated ASIO driver for your audio interface then you can select that from the list of drivers instead. If you need to change the output, click the **Settings** button.



6 > Use the **Audio Device** menu in the window that appears. If you experience stuttered playback or CPU overload, you may find that increasing the number of samples in the **Buffer Size** panel helps. Click the cross at the top right-hand corner of the Magix Low Latency 2008 window to close it.



7 > Click the **OK** button to exit the **Audio/Settings** menu. Let's play the project back. Click the big **Play** button on the transport bar. If you can't hear anything, check your audio driver settings and that your speakers are set up correctly.



8 > You can quickly navigate your way around the project using the slider at the bottom of the Transport bar. If you want to see the whole project at once, drag the right-hand side of the horizontal scrollbar, or click the - button to the right of it.



9 > To bring up the mixer, click the **Mixer** button on the toolbar at the bottom of the screen. The mixer enables you to change the parameters of multiple tracks quickly, and gives you a handy overview of the tracks in your project. Now we've seen a few of Samplitude's features, it's time to get our hands dirty with a new project.

> Step by step Get to know Samplitude (continued)



10 > Select **File»New Virtual Project (VIP)**, and click the **Arranger view** option. A default four-track project will be created. You'll see that the first audio track is armed (the red record arm button is illuminated). To record your interface's audio input, click the **Record** button on the Transport bar, then click **Stop** when you're done.



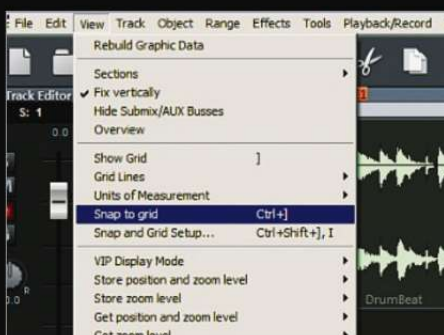
11 > A Recording Finished window will be displayed. Click the **OK** button to save the recorded audio, or **Delete** to delete it. We don't need this audio, so click **Delete**. To disarm the audio track, click its red light.



12 > Let's import some media. In the **Tutorial Files\Samplitude** folder on the DVD is an audio file called **DrumBeat.wav**. Drag this onto your desktop. Select **File»Load/Import»Load Audio File**, or press **Ctrl+W** to bring up the Open Audio File window.



13 > Browse to the **DrumBeat.wav** file, and click the **Open** button. You'll be presented with another window displaying various options for importing audio. Ignore these for the moment, and just click the **OK** button. The audio file will be placed at the start of the project.



14 > You can drag the audio along the track to change when it starts, or move it onto another track. You'll notice that the file doesn't automatically snap to the start of the beat or bar. To activate Samplitude's Snap mode select **View»Snap to grid**, or press **Ctrl+I**.



15 > Currently the snap mode is set to **SMPT/milliseconds**. Right-click the timeline and select **Bars/Beats** instead. Next, right-click the timeline and select **Grid»Beat Grid**. Finally, right-click the timeline and select **Show Grid**, or press **I**. You can now see the snap points, which the audio will automatically adhere to.



16 > To adjust the start and end points of an audio file, drag its bottom left- or right-hand corner. To change its volume level, drag the central handle up or down; and to adjust the fade time, drag the fade handles on the left or right edge. You can lock and unlock the position of the object by clicking the key icon.



17 > Next, let's add a virtual instrument. Click the second track to activate it, and click the MIDI panel at the left-hand side of the screen to expand it. Click the **Out** menu and select the **New Instrument** option. Samplitude will tell you that no VST patch has been selected and bring up the DX/VST Effects window.



18 > Click the folder icon and select **Browse VST folder** to bring up the dialog. Locate your VST plug-ins folder and click **OK**. Click **OK** again to exit the window, and Samplitude will scan the folder for plug-ins. When it's done, select the **New Instrument** option again and this time you'll be able to choose from the available instruments. To add a new MIDI object, select **MIDI»New MIDI Object.cm**

>Royalty-free, pro-quality sounds!



2000 cm samples

Studio slickster Alex Blanco has produced a bangin' library of floor-shaking house sounds for your delight and delectation...

The 24-Bit cm Upfront House Collection

House is one of the most multifaceted of dance music genres, and every year it evolves

and spawns yet more subgenres. In order to make sure you're supplied with the latest in house loops and sounds, we've commissioned veteran house producer Alex Blanco to create this awesome selection of cutting edge, pristine-quality 24-bit samples.

120 bass and lead loops
16 classic synth multisamples
505 drum hit samples
429 percussion loops
168 basslines
202 vocal snippets

The synth patches used were sourced from classic hardware instruments such as the Korg Prophecy, Yamaha AN1x, Access Virus and Roland Alpha Juno 2. There's also a selection of loops from Audio Damage's clever new Axon virtual instrument. Then there are some classically effected house vocal snippets, which were created using pitchshifting and telephone-style techniques.

Loop-wise you can get busy with hundreds of tough beats made using the new Kong drum machine in Propellerhead's Reason 5, while an assortment of accompanying bass, lead and arpeggiated riffs from the awesome Sylenth1 go very nicely with them indeed. The collection is rounded off with a huge selection of fat drum samples, perfect for big, dancefloor-bashing beats.

www.myspace.com/djalexblanco



Sample and video playback

cm videos are presented in MOV format, which means that you need QuickTime, QuickTime Alternative or VLC installed on your system to play them. Macs feature QuickTime as standard, and PC owners who don't have QuickTime installed can use VLC instead. VLC is an open-source media player that can handle pretty much any format you can throw at it - you'll find it in the VLC Media Player folder on the cm DVD. VLC is also recommended to Windows users who find that 24-bit samples won't play back in their Windows Media Player. For the latest version, go to www.videolan.org

Producer Masterclass Video

Artist **FuntCase**

The dubstep filthmonger invites you into his studio to show you how he gets his horrible wobbles, dark beats and other insane sounds. In this exclusive video, the Bournemouth-based producer works through his Reason-based collaboration with Southbound Hangers, Wizard Sleeve.

Web www.myspace.com/funtcase



HAVING PROBLEMS?

In the unlikely event that you have trouble with your disc, send an email to support@futurenet.co.uk and they'll help you out. Please do not phone us, as we don't give technical support over the telephone!

If you experience a problem with your software, you should first refer to the software manual. This is often delivered with the software itself or is sometimes placed on your hard drive when you run the Installer. If you find that you don't understand some of the features of the software, remember to read the manual first. Should you be unfortunate enough to run into any technical difficulties with the software, it is often best to get in touch with the developer of that software - they are probably better-equipped to offer you the support you need than we are.

BROKEN DISCS: If your disc is corrupt, cracked or otherwise inoperable, we'll send you a spanking new replacement within 28 days. Send the DVD to: Disc Department, Reader Support, Future Publishing, CMU158/November/10, Bath BA1 2BW. Don't forget to include your full name and postal address!

cm STUDIO

Our exclusive suite of applications, instruments and effects is on the DVD every month – it's quite literally all the software you need to make great music now!

APPLICATIONS

Outsim SynthMaker CM (PC)

Create your own VST synths and effects

XT Software energyXT2.5 Core CM Edition (PC/Mac/Linux)

VST host and sequencer with modular routing

INSTRUMENTS

AlgoMusic ElectraBass Rack CM (PC)

Easy-to-use bass synth that's packed with presets

Big Tick RhinoCM (PC)

Amazing hybrid synth with cool FM capabilities

CM WusikStation (PC)

Hybrid sampler/synthesiser

Dominator (PC)

Virtual analogue synth with a classic feature-set

FabFilter One 2.01 (PC)

Beautiful-sounding single-oscillator synth

Homegrown Sounds Astralis CM (PC)

Modulation-heavy 'soundscape' synth

Homegrown Sounds Astralis Orgone CM (PC)

Flexible sample-based synth

Humanoid Sound Systems Scanned Synth CM (PC)

Create abstract noises and haunting instruments

Kotkas Paax 3 CM (PC)

Feature-packed soft sampler

Krakli CMorg (PC)

Vintage organ instrument

LinPlug AlphaCM (PC/Mac)

Subtractive synth with ring and amp modulation

LinPlug CM-505 (PC/Mac)

Analogue drum synthesis made easy

Muon CMplay (PC/Mac)

Powerful ROMpler instrument

Muon CM-101 (PC)

Analogue-style VST synth

Muon SR-202 (PC)

16-pad VST drum machine

Muon CM-303 (PC)

Emulation of the classic Roland TB-303 synth

Muon DS-404 (PC)

Powerful 16-part multitimbral VST sample

Odo Synths Unknown 64 CM (PC)

C64 SID chip-emulating VSTI

PowerFX Hütkins CM (PC)

Sample-based electronica synth

Synapse Audio Junglist (PC)

Effects-packed virtual analogue synth

u-he ZebraCM (PC/Mac)

Amazing virtual analogue synth

Ummet Ozcan Genesis CM (PC)

Another amazing virtual analogue synth

XT Software EnergyCM (PC/Mac)

Analogue-style sequencer

EFFECTS

Aixcoustic Creations Electri-Q CM (PC)

Sweet-sounding and flexible equalisation

Audio Damage Pulse Modulator (PC/Mac)

Wild, stomptbox-esque modulation effect

Betabugz Audio Vascillator (PC)

Semi-modular feedback delay multieffect



Classic soft synth Synapse Audio Junglist is a firm fixture in the cm Studio

**START
HERE**

Get the **cm Studio** installed with our easy-to-follow PDF guides! They're on the DVD in **The CM Studio/CM Studio Tutorials** folder.

Blue Cat Audio FreqAnalyst CM (PC/Mac)

Sophisticated stereo spectral analyser

Camel Audio CMFuzz (PC)

Quick and dirty distortion

Image-Line CM Vocoder (PC)

Special **cm** version of FL Studio's FL Vocoder

Image-Line CM WaveShaper (PC)

Flexible wave distortion effect

Intelligent Devices MegaDelayMassCM (PC/Mac)

Sound design-orientated delay module

Intelligent Devices Slip-N-Slide CM (PC / Mac)

Easy-to-use double tracker

KResearch KR-Delay CM Edition (PC/Mac)

Dual delay lines with filters and sync ability

KResearch KR-Reverb CM Edition (PC/Mac)

Easy-to-use, algorithmic reverb effect

Martin Eastwood Audio CompressiveCM (PC/Mac)

Compressor/limiter with side-chain input

Martin Eastwood Audio Duet (PC)

Easy-to-use double tracker

NuGen Audio Stereoizer CM (PC/Mac)

Useful mixing tool for control over your stereo spread

Ohm Force Ohmygod! (PC/Mac)

Crazy resonant/comb VST filter

PSP Springverb (PC)

Authentic VST spring reverb effect

Sanford Phaser-CM (PC)

Phaser effect with advanced modulation abilities

SimulAnalog Guitar Suite CM (PC)

Plug-ins modelled on classic guitar effects and amp

Sugar Bytes Artillery2 CM Edition (PC)

Multi-FX with internal sequencer

Sequence multi-FX with Artillery2 CM

How to use Sugar Bytes' clever plug-in to trigger multiple effects with or without MIDI

PC MAC



1 > When you're looking for interesting ways in which to process your sounds, multieffects plug-ins like the **cm Studio's** Artillery2 CM can be really useful. With Artillery2 CM you can use MIDI to turn its various effects on and off, creating funky sequences. Start by launching your DAW and adding Artillery2 CM to an audio track.



2 > We need some audio to process. Open the **Tutorial Files\CM Studio Session** folder on the **cm DVD** and drag the **130house.wav** sample onto your hard drive, then onto the Artillery2 CM audio track. Set your DAW's tempo to **130bpm**, and set up a playback loop around the audio file so that it cycles continuously.



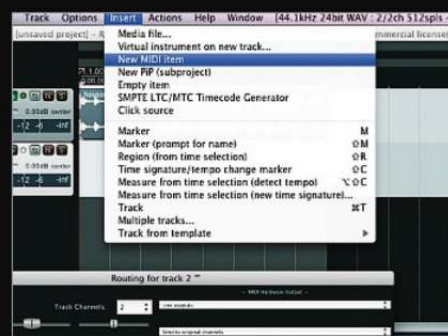
3 > You won't hear anything special on playback because we haven't loaded any effects into Artillery2 CM yet. The easiest way to do this is to load one of the effect's global presets. Click where it says **Default** in the Global Presets panel, and select **Factory>Super FX Keyboard**.



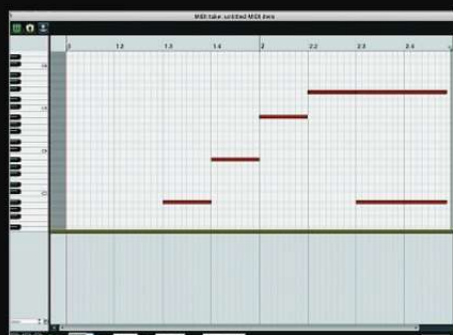
4 > This global preset features five different effects, which you can see spanned along the keyboard at the bottom of the interface. Play the loop back while clicking and holding some of the keys. You'll hear various effects being applied to the sound.



5 > The keys on the effect's virtual keyboard represent MIDI notes. By sending MIDI to the instrument, we can trigger multiple effects at the same time. We need to create a MIDI track and route it to Artillery2 CM. How you do this will depend on your DAW. In Reaper, which we're using here, create a new track.



6 > Click the **io** button on the new track to bring up its **Routing** menu. Click the **Add New Sends** dropdown in the **Sends** section and select the first channel. Close the routing window, then select **Insert>New MIDI Item**. Double-click the new MIDI item to bring up the Grid Editor.



7 > Copy the pattern shown here. As you enter notes, you should see the red MIDI indicator on track 1 flicker. On playback, you'll hear the effects on top of the loop. By triggering multiple effects simultaneously with more than one MIDI note trigger, you can create complex sounds.



8 > Using this method you can build up quite complex effects sequences. Yet it's also possible to use Artillery2 CM as a straightforward multi-effect without MIDI. Delete the MIDI part and bring the interface up. To activate an effect 'permanently', right-click your key or keys of choice on the interface.



9 > Note that you can only have one key active at a time in each effect zone. In this preset, some zones behave differently depending on which key is active. For example, click the **Low-pass** zone. You'll see that the **Keytrack** knob is active, which makes the filter cutoff follow the note used to activate it. **cm**

Reader music

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Send us your music

For the chance to be featured in *Reader Music*, simply send us your track via the SoundCloud DropBox on our website (see the walkthrough below for instructions), along with a description of your act, an image (sleeve art, photo or logo that you own the copyright to), and your equipment list. Be absolutely certain that no copyright samples have been used! The best tracks we receive each month will be reviewed here and featured on the **cm** DVD, so send yours our way today!

Rules:

1. Send no more than two tracks
2. Submit your track(s) via the SoundCloud DropBox on our website
3. The audio and MIDI files used must all be original and/or royalty- and copyright-free

BELLETRONIQ Sub Aquatics

Artist Bob Bell
Web www.soundcloud.com/bellelectroniq



> The filtered drum pattern used in the intro here is always a great way to start, because the impact of the main drums when they finally arrive is big. Here the full drums don't take long to appear and are followed by an earth-shaking bass sound that further steps up the size factor. All the time, a suspenseful echoed bell

synth gliss and dotted delayed synth stab build up the intensity. Backwards noises introduce changes and the drum programming intensifies. There's a drop back after a couple of minutes into the more settled verse, which is a bit disappointing, but then the build back to the middle, where the filtered drums reappear, is a satisfying moment, followed by the best sound of the piece: the chomping, Pac-Man-esque sequence.

The track has dynamic, driving moments and more static 'water-treading' passages. Were there more of the former, coupled with more intense builds, and less of the more self-satisfied 'arrival' parts, the track would be more successful. However, the piece as a whole is still well put together and the mix is clear and tough with a good sense of space.

What the artist says:

"The track started after feeding the chord sample through NI Deep Frequency, which gave it an underwater vibe. I built on that using white noise and plenty of automation. I'd never employed themes in my tracks before, but found it a very interesting way of working."

Equipment used Dell Inspiron 1520 PC, KRK Rokit 8s, Audio 8 soundcard, Akai MPK49, Ableton Live 8, Propellerhead Record, NI Deep Frequency, Sylenth1, PSP Vintage Warmer, Si Beggs' Distorted Dancefloors.

BUTTERFLY STONE Feeling in my Bones

Artist Mark Willott
Web www.myspace.com/Butterflystone



> Not your usual **cm** fare at all, this is all-out rock. But even if this track isn't to your musical taste, try to appreciate the excellent composition, and don't let the over-verb'd piano and clichéd drum fills in the introduction put you off. The kitchen-sink production is intentionally overblown and fits the song's nature, although

the programmed mood doesn't work so well, lacking, as it does, any human feel.

Programming aside, the least successful part of this production is the softness of the mix. It's all top and bottom, lacking any edge from the mids, as well as presence. This is partly due to the level of the guitars, which are lost to the string pads, but mainly it's because the tones of the drums and instruments lack punch. If you A/B this with any rock track, it feels soft, squidgy and ill-defined. The song needs more hardness in the mid-range, more transient punch and attack from the drums and more upper-mid-range edge from the guitars and vocals. It'll sound impressive live, though.

What the artist says:

"This concept took the best material I've been involved in over the last 15 years, and produced it without the limitation in instrumentation of a standard rock band. Horn sections, full orchestrations, evil synths, breakbeats and raw guitars all feature. Band rehearsals are underway to take this massive sound live."

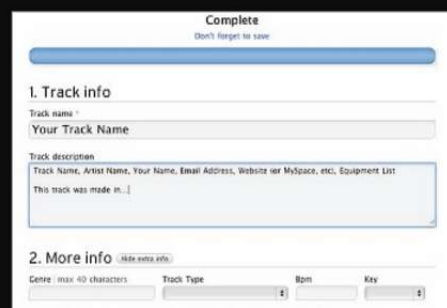
Equipment used Home-built quad-core Intel PC, MOTU Ultralite MK2, SE220a mic with Reflexion filter, Sonar 8.5, Toontrack EZ Drummer, Spectrasonics Stylus RMX and Omnisphere, Quantum Leap Symphonic Orchestra Gold, Guitar Rig 4, mastered in Adobe Audition.



SoundCloud makes sending and receiving music easy. Anybody can sign up for a free account and start sharing tracks straight away, although you don't even have to do that to submit your track to *Reader Music*...



1 > Go to www.computermusic.co.uk and look on the right-hand side of the page for our SoundCloud DropBox widget. Click **Send me your track**, then **Choose a file** and select your track.



2 > Enter *all* of the following in the **Track description** box: track name, artist name, your name, email address, website (or MySpace), equipment list and a brief description of how your track was made.

MR. DISHCLOTH Shinobu

Artist Joe Grant

Web www.myspace.com/mrdishcloth



> What a band name! Featuring synth sounds that are clearly influenced by computer games, this tune has a humour to it that overtly contrasts with the intensity of some of the sounds. And then there's the moaning lady...

The slow tempo gives the track a lot of room for space and many of the sounds are thrown into big reverbs or delays. This works on

some of the synths, particularly the skanking one, but the big 80s throwback of a snare is a little bit of a surprise. The mid section (and its big verbed sidestick) works, and it has a clever hint of dub melodica sound about it.

There are some crazy sounds that all convey chomping monsters or something similar - and they're somehow a success in this context. The 'angry frog' synth does a good job of building up the end section before the panting lady takes us out, presumably satisfied with the performance.

The overall track is good and tough, helped by the punchy drums and edgy synths, and there's a clarity and space to the mix as a whole. The dubby element could have been exploited a bit more, perhaps, but as it stands, Shinobu will certainly inspire some interesting shapes on the dance floor.

What the artist says:

"Shinobu is my attempt at creating a face-melting, Nintendo-style dubstep track complete with retro 8-bit synths, '1-up' effects and even a creepy 'Bowser level' breakdown! Throw in a fat bassline, some heavy drums and a moaning lady or two and you've got yourself a winner! Enjoy."

Equipment used Acer Aspire 5920g PC, M-Audio FireWire Solo, M-Audio Keystation 49e, M-Audio AV30 monitors, Cubase 4, Reason 4, Adobe Audition.

3 > Click **Upload new artwork** and choose an image. Confirm that you agree to SoundCloud's **Terms of Use** towards the bottom of the screen, hit **Send Track** and you're done!

What's wrong with my mix?

This month, musician, engineer and producer Mark Frith falls in love with a stomping dancefloor number built for big spaces

Producer/engineer Mark Frith



A multi-instrumentalist and talented engineer and producer, Mark is just the man you need behind the controls of your session, as a wide range of artists - from Futureheads and Electric Soft Parade to Clare Teal - would wholeheartedly testify.

SHELDON DEARN Prismatic

Artist Sheldon Dearn

Contact www.myspace.com/sheldondearn



> This is a very heavy track. It's eight minutes of intense breaks - yet it doesn't seem overly long, even when listening to it over a cup of tea. Check it out on a system with good bass reproduction, to ensure you don't miss the best bit.

Essentially a track of two halves, the intro builds with a gradually lowering high-pass filter on the kick behind atmospheric noises and a synth melody. The screaming resonant

synth sounds are both musical and industrial, and as they thicken they build the crescendo to the main body of the tune. A one-bar percussion drop sees that in, and when it hits, it's a sweet moment. The deep, driving bassline with square kick and snap is immense - so heavy and solid. It could go on forever in the right environment because of the visceral excitement it kicks in. The attitude captured in just those three elements is a rare treat, and it allows for a lot of space around them.

The track is tastefully and sparingly embellished with interesting noises. A longer four-bar drop sees in a top line that complements the bassline and builds throughout the section using an opening filter. More percussion and noises up the ante until the big drop, which has much time to swirl about as the intro riff goes through some distorted changes. There are a lot of Sylenth1 sounds - Lennar Digital's plug-in synth is clearly a major contributor to the track's success. The middle section is concluded by a closing high-pass filter, thinning the synth noises so that when that bassline kicks back in, it has the same impact as before.

Not much else changes apart from the atmospheric as the first half repeats itself - but I'm no less transfixed than I was the first time round!

The production is simple but effective, and the tonal combination of the rhythm is skilled. The weight of the bass sound with the punch of the kick and the bite of the snap is perfect, while the use of reverbed space around the synth noises brings a depth of field that balances any sparseness.

I'd love to hear this on a really big club system. Top marks!

What the artist says:

"I wanted this track to sound like it was being played in a large space, so I started with a lot of elements playing from the off. I also bussed a lot of things to a reverb, the Aether. I thought this might make the impact a bit stronger when the bass kicked in. The main breakdown was made with Sylenth1."

Equipment used iMac 2.4GHz, Logic 8, Mackie Control, Alesis M1 monitors, M-Audio FireWire audio interface, Novation MIDI controller, Effectrix, Sylenth1, Albino, Massive, Aether, Absynth, plus many of Logic's plug-ins. **cm**



cm Producer Masterclass

FUNTCASE

Also known as drum 'n' bass producer DJ Dose, FuntCase went dubstep to stop his mates nagging him – and he's never had more fun in the studio...



Dared to do dubstep...

> FuntCase - AKA James Hazell - has rapidly ascended to dubstep stardom over the past year, but he's something of a reluctant convert to the genre, and in fact to dance music in general. Back in the day, Bournemouth resident James wasn't into EDM at all. "I used to play drums and guitar, even though my mum has always been a DJ playing happy hardcore and DnB. Everyone was always trying to get me into it, but I had long hair and was listening to metal!"

It was the grimy sounds of jump-up DnB that finally persuaded James that electronic music was worth exploring. "When I heard Twisted Individual's *Bandwagon Blues*, I got switched onto DnB. From there I started mixing and trying to MC. I began mucking around on Music 2000 on the PlayStation, copying tunes like *Mindfield* by Zen. My mum got with a guy called Harry Detox who showed me how to use Reason. I was really into it and started making all these tunes - that were pretty rubbish! - and it all evolved from there. After about two years of mucking about, I made my first DnB tune and sent it to a load of DJs, like Logan D. They played it at the big festivals and stuff, so I went full steam ahead trying to get signed."

James released numerous tracks under his DJ Dose DnB persona, but his friends were all listening to dubstep. "About a year ago I started dabbling in dubstep because my friends were winding me up and telling me I should do it. I kept telling them no, but

"I was going to carry on making DnB and make dubstep on the side for a laugh, but I enjoy it more"

they wouldn't listen. So I made *Gorilla Flex*, which got signed. The reason I'm called FuntCase was because I didn't think I was going to do it seriously; I was going to carry on doing DnB and make dubstep on the side for a laugh, but I enjoy it more - there are less rules. Drum 'n' bass is very strict on arrangement, and you can't have too many cut-outs. In dubstep you can muck around and have breaks with random sounds and it's so much more fun to make. There is more freedom to use different sounds - for example, Boregore screams through a mic and puts it through distortion. You can't do that in DnB; it wouldn't sound right!"

On the 'Case

In our exclusive tutorial and video, James talks us through how he and fellow South coast act Southbound Hangers made their collaborative track *Wizard Sleeve* in Reason. Recently, though, James switched DAWs - he now uses Steinberg Nuendo. So, what's the reason behind the switch?



"I made a tune called *Mattress Punch*, which sounded great at raves, but not as clear as the other tunes played on 1Xtra. That made me want to switch DAWs and up my game. Now I'm on Nuendo and it's like being back at square one. I've got loads of sounds in Reason, so I'm bouncing them down and doing things with them in Nuendo that I never thought I could do - for example, automating the Chopper effect to make a wobble. The Metaliser and Flanger in Nuendo are way better than the flanger in

Reason. I'm loving the fact that I can now actually edit my audio in Nuendo."

What about soft synths? "I got taught how to use Massive when I first started. I thought it was the most complicated thing ever, but now it's my best mate! I've been trying to learn Z3TA+, but that thing is complicated: there are too many tabs. And Albino blows my mind: I can't fathom what things mean in it!"

Now turn the page to see how James produces his dirty dubstep tracks.

FuntCase's gear

PC with AMD Phenom II CPU and 8GB RAM running Windows XP
Propellerhead Reason 4
Steinberg Nuendo 3
Native Instruments Massive
Rob Papen Predator
Rob Papen Albino 3
Cakewalk Z3TA+
Yamaha HS80M monitor
Sony MDR-XD200 headphones
Stanton SA3 mixer

James' studio setup is unusual in that he uses, er, just a single Yamaha HS80M monitor. How did this odd state of affairs come to be?

"While I was working at my old office job I was using PC speakers and headphones. A guy at work used to build recording studios. I wanted new stuff, so I asked him about speakers. I had budgeted £200, but he told me to get a pair of Yamaha HS80Ms. I couldn't afford two so I bought one, and put off buying the other. I did finally buy another one, which should be arriving tomorrow! I'm doing alright with just a single monitor, but it's got to the point now where my left ear is buggered! Someone told me I should lay it down and put it in the middle of the shelf it sits on,



We definitely wouldn't advise using just one monitor, but FuntCase's temporary solution hasn't messed with his success

but by that point I was so used to the acoustics of where it was that it just made sense for me to keep it where it was."

How does James deal with making stereo mixes using just one monitor?

"Using headphones. With Reason, I know what needs to be done frequency-wise when it comes to making basses and kicks mono, so I use headphones, or go round a mate's house and see how it works on their monitors. I also use hi-fis and iPod earphones - I listen on everything I can to try to get the best mix."

Building *Wizard Sleeve*'s drum track in Reason

KICK

"This is a classic Vengeance kick. It's so clean that it doesn't need to be EQed that much. This kick is quite bottom-y, but there's a little high-mid click in there, which gives it a nice character. I've tuned it down -8. That's not a lot but it will make a difference to how it will kick in a club - it puts it more in the 80Hz range. I've got the high-pass at 62Hz, which makes room for the sub. You don't want to cut out too much because that would make it like a DnB kick; in dubstep you've got more room to fit the low end in. I've also added compression to give it some smack."

LOW-END SNARE

"The low-end snare gives the track the impact in the club. I've got an old-school TC snare that I use in DnB - here I boost it at around 170Hz, which is around the bottom end frequency peak of where it hits. To find where it peaks I use a tight EQ band to sweep around, and then when I've found it I'll make the band less tight so that it also has a low-end smack."

SIMPLE HI-HAT (ELECTRO)

"This is a simple electronic hi-hat sound that I run through a Hall 2 reverb. My preference is to have a big room size and decay with just a little bit of wetness to give it a nice click. On its own it sounds nice, but it won't gel into the mix unless you use reverb on it. In dubstep you need reverb for the drum sounds to glue it all together, or alternatively you can do what I do: layer it to hell. In that case, you might not need to reverb so much..."

KICK 2

"This is a really crunchy distorted sound that doesn't hit on the low end (because I've cut off the bottom at about 150-200Hz) but still retains a low-mid smack. It plays together with the main kick to produce a really characterised hit. If you have just a kick without much high end going on, it makes the mix sound dull. I've added a hall reverb to it because without it the sound just stops - it will sound too stoppy-starty in the mix."

SNARE SUCK

"I call this a 'woosh' - it's like a sucking snare before the snare hits. It's a small detail, but the small details really make a tune. It sounds ridiculous on its own but in the mix it gives the whole thing a better sound. It has a slight reverb to help it gel."



The Reason mixer layout for FuntCase's drum track to *Wizard Sleeve*, complete with send effects at the top

MID SNARE

"This is quite a mid-y snare, but when you make a snare you've got to make sure that it hits every part of the frequency spectrum. This has been boosted on the top end to give it that click. I put a triplet delay on this and the hi-hat, which creates a pattern when they play."

CLAP REVERB

"This is a standard sound in dubstep: the reverbed clap gives the tune atmosphere. If you've got something that just hits, it will sound good, but it won't give you the roundness that the whole mix needs in order to sound really atmospheric. I'm using a Hall 2 effect with quite a bit of size on the room, and a bit more wetness."

MID HI-HAT

"The first hat was really high. This one is more in the high-mids, and in the mix its patterns sit really nicely with the top hat. They hit separately, but come together at some points - so they need to fit each other. Like everything else, make sure the hi-hat is full-bodied and covering the right bit of the frequency spectrum."

OPEN HI-HAT

"This isn't a typical-sounding hi-hat: there's a bit of flange on the sample. I've EQed it so there's nothing under 100Hz, and it rolls off up to about 300-400Hz. Sometimes hats from sample libraries will have a tiny bit of bass under them - you need to cut that out, because it will come through if you're playing the track on a big, frequency-sensitive system. I wanted this sound to be really tinny and high, so I've boosted it at about 8-10kHz for a nice high-mid, top-end sizzle."

LIVE OPEN HI-HAT

"This is a live-sounding hi-hat to fill out the frequency spectrum. It plays a kind of DnB pattern that gives the hi-hats a really nice shuffle. This one plays slightly off, which gives it a kind of triplet feel."

CRASH

"The bottom end has been cut out up to 200Hz to make sure it's not conflicting with any other low-end frequencies. I've pitched it down to -6; if you make sure that all the cymbals and hi-hats are playing at the same pitch, it will sound much better."

I've also put a 2/3 delay on it. This is a big filler when it comes to dubstep drums, and it helps to give them extra fullness."

RIDE CYMBAL

"This is a DnB-style layer that rolls up from the bottom to 500Hz. I didn't want too much mid in it because a ride cymbal should be very tinny and sizzly. Too much mid will create an "open mouth" sound, which you don't want. You need a bit of it in there, but you'll have other sounds in the mids, so keep it in the background."

RIM HIT

"This sound is a nice filter. I put a bit of distortion on it to help fill it out, and there's also a tiny bit of reverb on it."

SHAKER

"I've put a tiny bit of reverb on this and dropped the pitch to -8. The pattern I've programmed helps it gel together with the hi-hats - it gives it a bit of a funky rhythm. You should always make sure that all the holes in a hi-hat a pattern are filled - you want the whole drum riff to roll so that it's not stopping and starting."



James uses the aux sends in Reason's mixer to tweak his myriad drum sounds.



Layering is key to the FuntCase drum sound - these are just a few of his drum tracks...

> Step by step

FuntCase on making the basses and FX for *Wizard Sleeve*

- 1 > "This is a strange squeal-y sound. I made it in Malström from a square and a sine dropped two octaves and run through the shaper and both filters. I've automated the **Cutoff** on one of the comb filters to drop from **26** to **0**. Little variations like that make the sounds less boring to listen to."



- 2 > "This sound was made by Southbound Hangers on Massive in Logic, and it's been bounced down to audio and loaded into Reason's NN-19. It's an aggressive sawtooth sound with a bit of resonant low-pass filter, and I've run it through Scream4. I've turned the **Damage** control down so that the signal isn't too loud."



- 3 > "This is another Southbound Hangers tune. This time I felt the signal wasn't that strong, so I've boosted the **Damage** control, which gives it more overdrive distortion. I've set the **Tone** controls a bit higher to freshen it up, and also used Scream 4's **Body**, which is a filter that makes it sound like you're playing the bass down a plughole."



- 4 > "This is a really horrible wobble sound. This sound uses two sine oscillators running through the Shaper in **Quant** mode with the level set to full blast. I've got it running through Scream 4, and the mid on the **Tone** control automates as it plays, which opens up the sound of the bass."



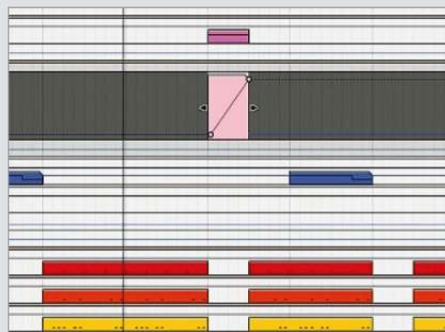
- 5 > "The first bass sound - the squeal bass - would sound too bare if played on its own: there would be no bottom end or grit. To solve that, I've added this saw bass. It's a simple effect used in DnB that's great for filling out a bass that's got a high buzz to it and sounds too hollow in the mix. I've boosted the low-mids to add warmth."



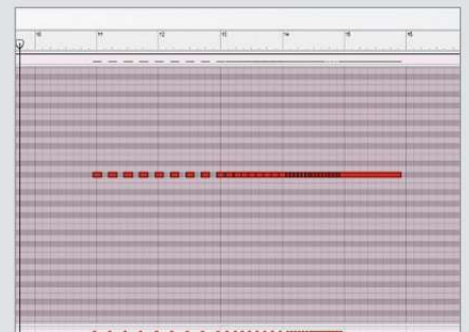
- 6 > "I get asked a lot about these 'yoy' basses. It's such a simple thing! Here I run a sine bass through a Shaper, then through the **Digistructor** preset in Scream 4, and I've turned up the **Damage** control and EQs a little bit. The default body makes it sound really good. This gives it that sort of disgusting 'womp' sound that you want."



- 7 > "This is another 'womp' bass, but it's more of a constant, open sound. I've used Mod B in Malström to modulate the volume level and filter cutoff frequency. Otherwise it's the same **Digistructor** preset, settings and EQ as the previous sound."



- 8 > "You'll notice if you listen to my tracks that I always put gaps in my tunes - it will kick off, be all gravy, and then I'll cut everything out and put a random sound in. It keeps the ears interested! Here I've got a Vengeance sound effect sample panning from left to right. I did that by automating the **Pan** control in the mixer."



- 9 > "Southbound Hangers' MC Raf performed the vocal sample. Reason doesn't do timestretching, so to get a similar effect I've done this really strange thing where the sample is played stuttered, while the sample start point is automated and gradually increased." **cm**

SMALL WONDER

The amazing NanoStudio enables you to make complete tracks on your iPhone or iPod touch. Maximise its potential with our in-depth guide



> Just last issue we presented our first ever iPhone app tutorial feature, focused on semimodular synthesis environment Jasuto. As good as that one is, though, if we had to make do with just one iOS music app, there's no doubt that we'd plump for the outstanding NanoStudio from Blip Interactive.

We feel confident in saying that it offers the most satisfying musical experience of any iOS app. What really makes it special is that it's the first app we've used that you can use to make a complete track in pretty much any (electronic) style, with an arrangement that's as complex as most users will ever need and the freedom to use practically any type of sound.

The sequencer is highly flexible, and while

not as feature-rich as a desktop app, all the basic editing, sequencing and automation functionality is in place. You won't find yourself confined to a simple 16-step sequencer here.

Sonically, you've got a 16-pad sampling drum machine and four synths to play with, the latter offering real-time synthesis, sample support, deep modulation options, and built-in effects. There's sampling and even resampling, which opens up a whole world of possibilities.

Rather than going over the basics - which are ably covered in the excellent manual - we're going to reveal some of the advanced tricks that will help you get the most out of NanoStudio. If you put into practice everything detailed here, you'll soon be making suspiciously large tunes

within your pint-sized studio. Mix down to WAV and use your desktop machine to juice it up with some fancy mastering plug-ins and no one will ever suspect that your tracks were produced on a mobile phone!

If you've never used NanoStudio before and are curious as to what all the fuss is about, we've included the desktop 'demo' version for PC and Mac on the **cm DVD**. It's just like the iPhone app, so you'll be able to have a go at the tutorials. And for iPhone users, we hope that our guide will make you see your device as a music-making machine with a phone tacked on, rather than the other way around. Finally, the v1.1 update should be live by the time you read this, so do yourself a favour and check it out. **cm**

> Step by step

Fake sidechain pumping with an LFO



1 > Program a simple four-to-the-floor dance beat in TRG-16 (we're using NanoStudio's included 909 bank) and program some sustained chords in Eden (we're using the **A59.Noise Strings** preset). Shorten the release on Eden for a tighter sound - it should sound something like **Pumping - None.wav**, on the DVD.



2 > Now let's set up an LFO in Eden to provide a sidechain pumping effect. Scroll to the screen showing the four LFOs and Aux Envelope, and set LFO 1's **Amount** to around halfway up, **Sync** to **Beat**, and **Rate** to **1/4**. You should set its **Shape** to **Saw Dn** (and not Saw Up, as you might have expected!).



3 > On the next page, select the first row (**LFO 1**) and set its **Destination** to **Amp** and **Parameter** to **Amount**. Set the final column, **Amount**, right down to **-100**. You can now use the **Amount** knob on the LFO screen to control the amount of pumping. This trick can be used subtly, too, as a sort of fake compression.

> Step by step

Resample a fat unison synth



1 > NanoStudio's resampling functionality is very powerful indeed, enabling you to record the mixer's master out directly back to a sample slot in Eden or TRG-16. We're going to use this to create some fat unison sounds with Eden, then bounce it down to a single playable sample for convenience. Go to the first Eden synth's control panel and select **A04.Universal Bass** from the **Global A** bank.



2 > Head to the oscillator setup screen and set both **Shape** of both oscillators to **Saw**. Next, move on to the filter page and select the **Off** button to disengage the filter. Move down to the next page and crank up the **Sustain** of the amplitude envelope, and set the **Polyphony** to **8**. This gives us a simple sawtooth-based polyphonic synth patch on which to base our sound.



3 > Eden doesn't have a unison function, but you can easily fake it by layering up notes in the sequencer. Create a new pattern and draw in a long C4 note - one bar will do. Select it, hit **Copy**, then use the leftmost orange 'handle' to slide it back to the start of the bar, so the two notes are stacked right on top of each other. Now select both of *those* notes and repeat the process.



4 > Now our sequence plays back four notes/voices at once. To create a real unison sound, though, each of those needs to be tuned a little differently. Head back into Eden and go to the LFO page. Set the first LFO's **Shape** to **RndStep**, its **Amount** to halfway, **Sync** to **Key**, and **Rate** to **0.01**, ie, so slow that it holds its initial value almost indefinitely (don't set it to 0.00, because that disables the LFO).



5 > The LFO we've just set up creates a constant random modulation amount for each voice - now let's assign it to something. In the modulation routing screen, LFO1 should have its **Destination** set to **Osc**, **Parameter** to **A+B Pitch**, and **Amount** to **2**. Now when you hit play, you should hear a much thicker tone. To adjust the amount of detune, use LFO1's **Amount** knob.



6 > We currently have four-voice unison - for more voices, just stack up more notes in the sequencer. To pan the voices, set up the second LFO like the first one and instead route it to **Osc/Pan**, with the **Amount** set to **100** (use the LFO's **Amount** knob to dial in width). Tinker with parameters, modulation and effects until you like what you're hearing! We like it with the waveshaper and chorus on.



7 > Now we're ready to resample, so bring up the second Eden. Again, load the **A04.Universal Bass** patch as a starting point and disable the filter and effects for now. On the oscillator page, set **Mod** to **Sample**, then whack the red **Rec** button that appears. Tap the **Resample** tab and set all parameters to their minimum values, since we only want one bar. Then hit the **Rec** button and stand well back!



8 > You'll see the waveform appear - you can edit it, but for now just hit **Done**, then **OK**, then give the sample a name and save it. You'll now be able to play the unison synth sound up and down the keyboard, and polyphonically too (raise the **Polyphony** setting if it's not working). Throw on some reverb and delay and you're off! Don't forget to save your new preset, preferably in the Project bank.

POWER TIP

>Templation

If you find yourself getting heavily into resampling, you might find it better to create dedicated template projects for each type of sound (eg, lead synth, drum hit, noise FX, etc) you want to make, and use the **Mix to Wav** function (in the **Manage/Project** tab) to dump out sounds to build up a custom sound library. It's practical to do this mid-session, too, because NanoStudio projects load and save so quickly. And with a whole project at your disposal for a single sound, you can potentially stack up all four instances of Eden, to create truly titanic tones!

> Step by step

Fake filtered delays



1 > We've got a simple beat and fill (**Filter Delay None.wav**) and we're going to put an echo on the fill using resampling trickery. The fill is on TRG-16's track B, so we switch off TRG-16 track A, then resample into Eden, using the method explained in the last walkthrough. You can use any sound you like, though.



2 > The first half of the bar is silence, so let's delete it. Pinch-zoom to where the first hit lands and swipe to highlight the silence prior to it. Make sure you get it as tight as possible, or the echoes will go out of time. Now select **Zoom>All** and drag the leftmost orange 'handle' to the far left, then tap **Delete**.



3 > Hit **Done**, then **OK**, and name the sample. Go to the filter screen, crank up the **Cutoff**, then hold a C4 note - you should hear the fill repeat on a loop. Now you can put the **Cutoff** back down and use the filter envelope with an instant **Attack**, long **Decay**, low **Sustain** and high **Amount** to make the filter close over time.



4 > Now we've got a delay tail, we can program it in where needed - ie, just after the 'normal' fill. We program a long C4 note at the start of the bar just after the fill is heard (in our case, at position 2.0) to create a convincing filtered delay. You can even shorten the note to shut down the repeats. Nifty! (**Filter Delay Long.wav**)



5 > It sounds good, but we'd like the delay time to be shorter - ie, a quarter note instead of half a bar. This is easily done by selecting the note, hitting **Copy**, then sliding it back until it's a quarter note earlier, at position 1.4. The two notes are now overlapping, but they'll both play back just fine. (**Filter Delay Doubled.wav**)



6 > How about a funkier delay pattern? Slide the earlier of the two notes to the right by one 16th-note (you can adjust the grid by tapping the **Tools** button). Groovy, innit? You can further customise the sound in Eden using modulation and effects to create very unusual delays. (**Filter Delay Rhythmic.wav**)

> Step by step

Patterns, parts and presets



1 > With NanoStudio boasting four Eden synths, you might assume that you can only use four Eden sounds per song. In fact, you can use a different patch for each and every pattern - powerful stuff! To do this, select a pattern in the sequencer and tap **More>Properties**, then the **Preset** tab. Hit **Enable** and select the patch you'd like to use for the pattern. The patch names are shown in the clips.



2 > When switching between patches that use samples, you may find that the first few notes of a pattern don't play. This happens because NanoStudio is still loading the samples into memory. One way to get around this - if your song structure permits it - is to insert an empty pattern that uses the patch you want to load. This will fool NanoStudio into loading the samples ahead of time.



3 > The other tab under **More/Properties** houses a similarly powerful feature, allowing you to convert a 'part' (the default mode for all sequencer clips) into a numbered 'pattern' and vice versa. When you edit, say, pattern 1, all patterns with that number will change. You can also loop patterns by extending the right edge of the clip (set the length with the blue locator strip in the piano roll editor).

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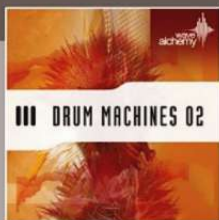


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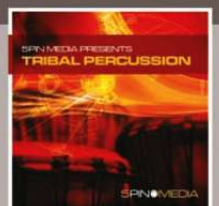
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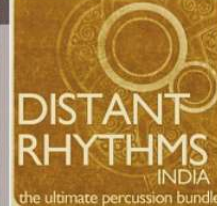
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NanoStudio tips



Don't forget that TRG-16 has three buses, with independent reverb, delay and filter settings for each

NOT FADE AWAY

The Hold function of TRG-16 is very handy, but it can produce some odd buzzing sounds with fast attack/release times, especially on bass sounds - take a listen to **808 Dirty Release.wav**. If you're only using it for basic envelope shaping, you might be better off forgetting about the Hold mode and instead using the Fade In and Fade Out functions in the sample editor to achieve the same thing without the buzzing: **808 Clean Release.wav**



The wave editor is very basic but check out the fade in/out options if TRG-16's envelopes aren't doing it for you

AMPLE SAMPLES

Get your iDevice loaded up with some quality sample packs and NanoStudio will thank you for it. You have to use the NanoSync desktop app to do this, but it's well worth it, and the v1.1 update should make the whole process pretty much drag-and-drop.

THE EQUALISER

NanoStudio doesn't have a dedicated EQ module, but the 5th Planet waveshaper in Eden can function as one - just flip through the modes till you get to the last one, EQ Only,



We strongly recommend trying all the reverb models as the default one isn't necessarily the best for your track

and twist the Contour knob to darken or brighten the sound. You can always resample sounds through it, too, if you want to use them in TRG-16, and, indeed, you can use Eden's filters in this manner for basic high/low cutting.

TOTALLY PANNED

There's no obvious panning control in Eden, and while v1.1 offers pan knobs in the mixer, it's still worth knowing that there's a pan destination in Eden's mod matrix. Use the 'static LFO' trick described in our unison synth walkthrough and you'll be able to pan individual patches as you like.



Don't write off 5th Planet as just a distortion machine - it can function as a basic EQ too

VARIETY OF SOUND

While it's true that you can use NanoStudio's automation features to subtly change parameters over time, if you just want variations on an Eden patch (eg, to open the filter cutoff wider during the chorus), it's easier to make a new patch and switch to it using the patch-changing system. We also find that with complex projects, it makes more sense to leave the mixer faders at unity and deal with level changes on a patch-by-patch basis.



The power-packed performance page - everything here can be recorded in real time, so get those fingers ready

KNOWN ALIASES

In terms of pure quality, NanoStudio isn't the cleanest app out there, and you may notice aliasing (high-frequency noise) when pitching samples away from their root note. If you're not using Eden's filter for anything in particular, try applying a low-pass filter with a high cutoff and the Q at minimum - this can soften the abrasive top end. Of course, sometimes that digital grit is just what the doctor ordered, though!



On track 2 we've got a pumping pad preset and a 'soft' variation - this is easier than automating parameters

PRESET MANAGEMENT

NanoStudio's preset system is a little odd, we have to say. Make sure you get into the habit of saving your tune's presets regularly into the Project bank (the Global banks are shared between all projects) because unless you actually hit the Write button, your carefully crafted sound will be lost as soon as you switch to another patch. Whenever you save your song, it pays to flip through each Eden and save the presets too.



Wot, no pan knobs? Not to worry - by the time you read this, v1.1 should be out, replete with pan pots

INCIDENTALLY...

You'll probably load incidental noises like crash cymbals, build-ups and FX into the TRG-16, as this seems the most logical place to put them. However, if you can spare an Eden channel, consider making custom Eden patches for them, as you'll gain enormous flexibility and be able to use the chorus and waveshaper effects, too. And if you're planning on using tom fills, loading a single tom sound into Eden and playing it chromatically will free up the multiple pads you'd have to use on the TRG-16.

V1.1 FOR ALL

Just as we went to press, Blip Interactive submitted the v1.1 of NanoStudio to the App Store - it should be out by the time you read this. Slated features include audio copy/paste to/from other apps, MIDI file import/export, Line 6 MIDI Mobilizer support, project import/export as a self-contained file, direct export to SoundCloud, advanced mixdown options, improvements to NanoSync (24-bit file support, nested folder copying, PPC compatibility), note preview in piano roll, and plenty more besides. cm

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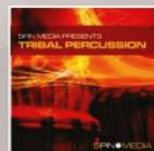
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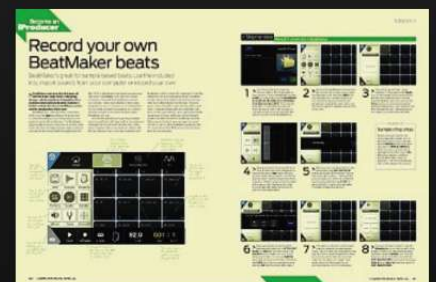
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THE WHITE STUFF

If you think the sole purpose of white noise is to remind you that the telly's still on, you're mistaken. It's a key ingredient for crashes, falls and risers, and makes a great enhancement to your drum loops, too



ON THE DVD



Audio examples from the walkthroughs are in the **Tutorials** folder, as are a set of screencast videos showing these techniques in action

> **Noise and music are arguably the exact opposite of each other - although we suspect that many parents of teenagers might disagree. One is chaotic with no structure at all, while the other is organised and melodic. Right? Well, no. The two aren't in fact entirely mutually exclusive. In fact, noise - specifically, white noise - features in far more music than you might think.**

What is white noise? Effectively, it's all frequencies together, at the same time, in equal measure - a 'hiss'. It's called white noise because of its similarity (conceptually at least) to white light, which comprises all the different colours (light frequencies) together. White light can be split back into its component parts - by pushing it through a prism, rainbow-style, for example - and the same is true for its audio cousin.

There are other types of noise - pink, brown, etc - but these are all just subsections of white. Analogous to the sculptor's block, white noise is a blank canvas of sound, waiting to be stripped and shaped into something more attractive.

Good for us, then, that this makes it an extremely useful tool when it comes to music production. From simple hi-hats, sweeps and risers to the cheery melodies of chiptune, white noise's influence on music is far reaching and not to be underestimated.

In this tutorial, we'll explain how you can start incorporating white noise into your productions right away, be it to add a little sparkle to some dull elements or build that washy fill you've been looking for all this time. After completing the following walkthroughs, you'll find yourself hearing white noise in everything - not just when you leave the telly on...

> make music now / the white stuff

> Step by step Create simple hi-hat sounds with white noise



1 > Load up a synth in your DAW and set it to generate a noise waveform. Some synths have noise waveforms included in their regular oscillators; others – such as Native Instruments' Massive, which we're using here – have a dedicated oscillator for the purpose. When you play the synth, you should just hear static.

2 > In the Amp Envelope, set the **Attack**, **Sustain** and **Release** to **0**. We want quick and snappy hi-hats, with sharp attack and no sustain. A longer **Decay** time gives us some headroom for variation. Set this to about midway and keep testing it until it sounds short but clear.

3 > Add a high-pass filter, and set the **Cutoff** to about 60-70%, keeping just the high frequencies audible. This should finish the basic sound. Draw in some 16th-notes and tweak their lengths slightly for variation. Keep the **Decay** about mid-way up if you need more length.

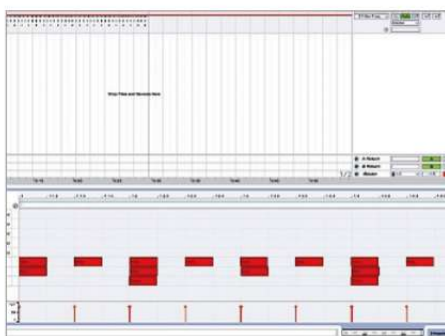
Getting started

Probably the simplest and most common way that white noise is used in electronic music is in the creation of percussive elements, hi-hats and snares in particular. Before we get going, clearly it's essential that you have access to some method of generating white noise.

Fortunately, this isn't anywhere near as complicated as it might sound. There are a few ways of generating white noise to use in your sound design endeavours, but by far the simplest is to use a synth that has a white noise waveform available to its oscillators. Most virtual analogue synths, both free and paid for, offer this particular feature. The other alternative is to use a sample of some white noise – which is very easy to find on the internet – and use that in a sampler plug-in.

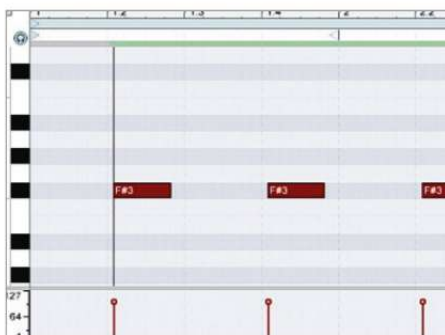
Once you have a source of white noise, the next most important consideration is that you can sculpt it with EQ, filters and envelopes, as these are the best tools for carving something useful out of the frequency soup. Once armed with the right equipment, nothing else remains but to get stuck in. Let's do it!

> Step by step Add splash/tail to snare drums



1 > Snare drums come in all shapes and sizes: some snappy, some long. Using a little bit of white noise underneath can give you more control over the sound. With a drum machine loaded, add a kick drum, a short snare drum and a hi-hat into a simple 4/4 pattern, with the snares on every other beat.

2 > Load up a synth, and set its amp envelope to the same settings we used for the hi-hats above. This time, however, increase the **Sustain** just a touch. To create the desired wet/splashy sound, add a high-pass filter and set the **Depth/Amount** to around 50%.



3 > This should have created a short burst of sound that quickly declines to just a faint hiss. To add this under the snares, draw eighth-notes in on the same beats. To prevent it clashing with the snares and detracting from their snap, turn off quantise and nudge them to the right a tiny amount.

4 > With quantise still off, try lengthening the white noise notes gradually. A small change makes a notable difference to the sound, and it's one that could be automated over time. Adding a 32nd-note directly after the first splash creates a 'flicking-up' effect for rhythmic variety.

> Step by step Build a basic white noise riser



1 > With your synth (Lennar Digital's Sylenth1, in our case) or sample player ready to go, either load in a white noise sample or activate the white noise oscillator, and draw in a two-bar-long note. Make sure the amp envelope is set to zero **Attack**, **Decay** and **Release**, and maximum **Sustain**.



2 > For a rising effect, set the filter to **Low-pass** and the **Cutoff** to almost **0**. Playing a key now should make little or no sound. Set a modulation envelope to control the filter (if your synth doesn't have a dedicated filter envelope) and set all of its parameters to **0**.



3 > Set the envelope **Amount/Depth** to 100%, and the **Attack** to about 50%. Playing a key now should produce a short, sharp rising sound. Loop the note and keep adjusting the Attack until the cutoff fully opens at the end of the note.

> Step by step Create a panning white noise fall



1 > With the riser set up as above, turn the Filter **Cutoff** knob to maximum and the **Amount/Depth** on the modulation envelope to -100%, inverting it (your particular synth may handle this rather differently to ours). If this produces a sound that's too harsh, bring the Cutoff back down a bit.



2 > Assign an LFO to modulate the oscillator's pan control (**Pan A**) using a sine or triangle waveform at a **Rate** of 1/2. Turn the **Amount/Depth** knob to maximum (or +100%). This is going to create a cool stereo effect by panning the fall left and right twice per beat.



3 > This sounds OK as it is, but the effect could do with a little something extra. Turn the filter's **Resonance** up fairly high and assign it to the same LFO as the pan, with the **Amount/Depth** at +100%. This gives our fall that distinctive whistle effect.



4 > To complete the effect, assign the same envelope that's controlling the filter cutoff to control the **Rate** of the LFO used in the previous step. This causes the panning and resonance to speed up over time. Adjust the amounts to taste.

Modulate this

Risers, falls, crashes, swooshes and many other onomatopoeic sound can all be crafted from white noise. But applying pitch modulation to white noise has no effect because of the way it is made up - all frequencies in equal amounts. So how do we create effects that seem to start at the bottom and rise upwards?

If we have a sound that comprises all frequencies, the best way to alter its sound is by using a filter. By carving out various frequency ranges you can create that vital sense of movement within sound.

While this is fine for one-note sweeping effects, it doesn't help with making something more rhythmic, such as hi-hats. You could use manual automation to move a filter's cutoff and resonance over time, but who wants to do that for more than a few bars? The answer might lie in a less-used modulation source called key track.

Key track enables the modulation of a parameter by MIDI note value. A simple example is opening the filter cutoff as the note pitch rises. This works particularly well with white noise - just find the key track option on your synth and assigning it to the filter cutoff.

Add to this such things as volume automation and panning, and the creative possibilities begin to grow. You're never going to get the rich, melodic tones of a conventional waveform (that's not why we're here!), but these techniques enable you to create sounds that are just as dynamic.



The emergency services use white noise in sirens to help drivers locate them

White noise culture

White noise seems to have developed a certain level of cultural significance over the last few decades. Bands, albums and even films have been named after it. So what is it about this harsh collection of abstract frequencies that's caused it to have such a genuine influence outside the sound itself?

Music-wise, the idea of something being random and faceless has always held a certain punky appeal. But with over 30 tracks with the title *White Noise* currently available to download via iTunes, perhaps it's not all that random after all.

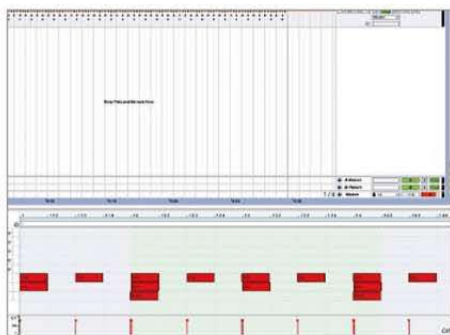
Less tunefully (or maybe not!), white noise is often used in vehicle sirens, as it is believed to make them easier to locate spatially – how many times have you heard a siren and spent a few moments trying to work out where the ambulance is coming from?

Almost paradoxically, white noise is also at the centre of the lucrative new age 'relaxation' industry. Being constructed from the entire audible frequency range, white noise is believed to be an excellent tool for drowning out unwanted background noise (including distracting noise when trying to sleep) and tinnitus. Do a

quick internet search for 'white noise CD' and you'll be rewarded with hundreds of thousands of results – not bad for something that most people just think of as radio interference.

Strange, then, that what can in one context be extremely calming can, in another, be brash and stimulating. Chiptune – the modern and often abrasive style of music that makes use of old 8- and 16-bit style synthesis – owes more than a passing nod to our blanche friend. Just add a bit crusher to some white noise and memories of your old MegaDrive will instantly come flooding back.

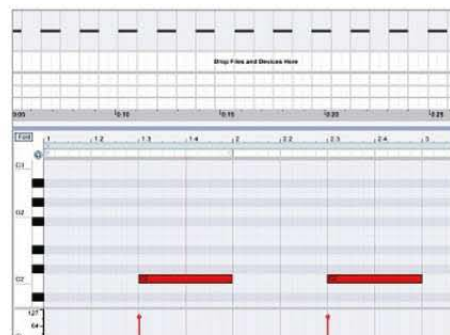
> Step by step White noise call and response



1 > Start with a simple beat. This technique is popular in tech and minimal styles, so kick drum, snare and hi-hats (maybe the ones we made earlier?) are a good starting point. Create a 16-bar loop; perhaps this would be the basis for a chorus or breakdown.



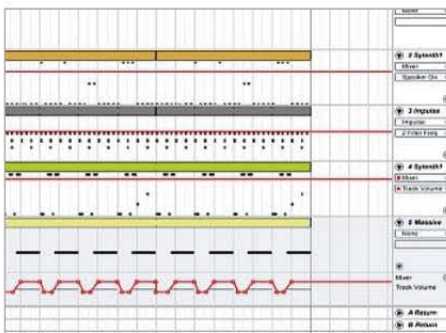
2 > Choose a simple sound: two saw waves and a square wave work well for this sort of effect. Over a four-bar loop, draw in some notes in the first half of each bar, except in the fourth bar, where you should just add in a few 16th-notes at the end. Copy these four bars out to make 16 bars in total.



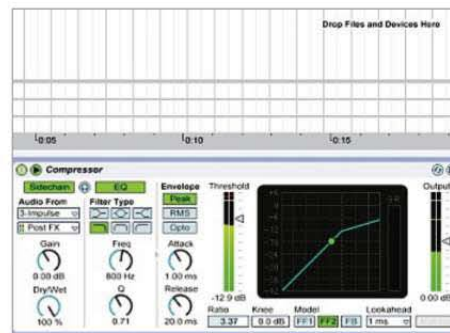
3 > Add your white noise synth to a new channel and draw in a single note in the second half of each bar. You should now have the bass notes playing for two notes, followed by half a bar of glorious white noise.



4 > To make sure they overlap and thus interact well, turn off quantise and manually stretch the white noise notes back just a touch (a 32nd- or 16th-note length should be plenty). Listen again to make sure the two sounds coincide well.

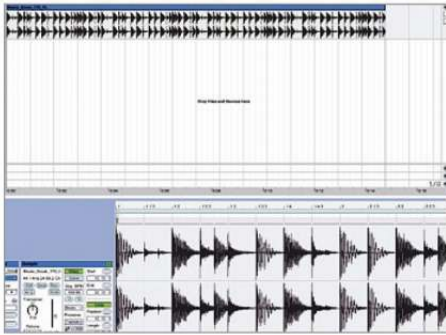


5 > While we are aiming for some amount of overlap, it may be necessary to automate the volume of the white noise to make the transition between the two sound somewhat smoother. Alternatively you could simply adjust the envelope attack until it sounds smooth.

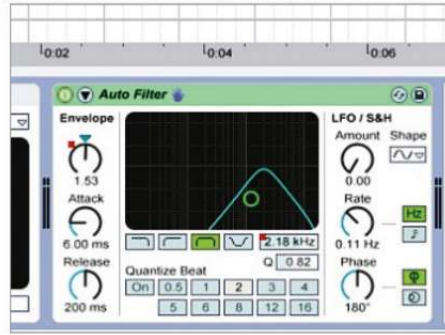


6 > To finish the effect and make it sit more comfortably with the other parts, adjust the volume so that it's not overpowering, add a compressor and sidechain it from the kick drum. This will give the sound a much more rhythmic feel.

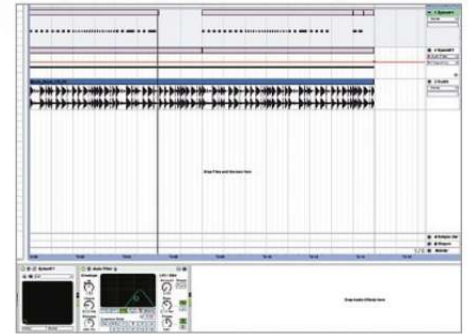
> Step by step Scratch things up



1 > Start by laying down a beat. It can be any type of rhythm, but breakbeats work particularly well for this effect. To create a bit of atmosphere, try adding a one-note bass stab with lots of reverb. You can try other sounds, but we've found that this works well as a base.



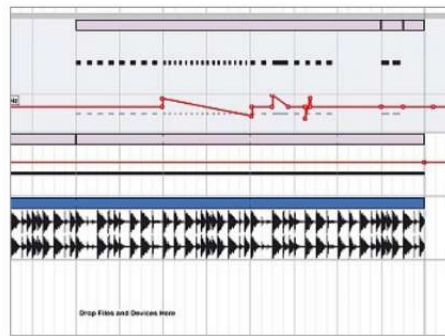
2 > Add your white noise synth to a channel. Create a MIDI clip of eight bars in length, making sure that the drums and synth stab play for just as long, and set it to loop. Draw in a mix of eighth- and 16th-notes. Add a band-pass filter centring on around **2kHz**.



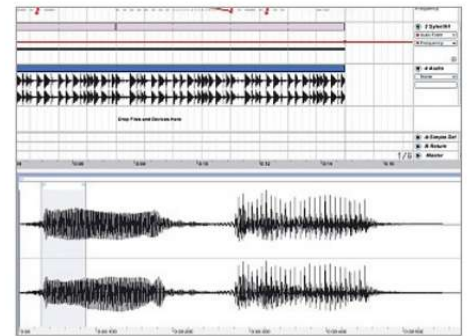
3 > Set the loop playing. At this point it won't sound that special, but it should give you an idea of where this is heading. Essentially, we're going to layer sharp movements in the band-pass filter over short notes to create a scratching sound.



4 > With the loop still playing, start planning the rhythm of the scratches. Where will longer or shorter notes sound better? Draw them in and adjust them as the loop goes round. Some trial and error may come into play here.



5 > To create the scratch effect, we need to automate the filter frequency from high to low or low to high. Longer notes work well for a forward or backward scratch sound, and longer gradual automation over 16th-notes will create a faded-in 'transform' feel.



6 > To complete the effect, try adding a short vocal sample, preferably with a high-pitched start or a fast attack. Chop it up into bits, repeating the first part to correspond and interact with the white noise scratches.

All the colours of the rainbow

While this tutorial has been focused on white noise (defined scientifically as a signal of equal power in any section of a given bandwidth, giving it a flat spectral analysis curve), there are several other colours of noise, each of which boasts its own unique characteristics.

The one you're most likely to already know is **PINK NOISE**. Unlike white noise, this isn't equally strong across all frequencies: it decreases by 3dB per octave. However, it does present the same amount of

power over frequencies that have the same relative widths. To you and me, this means that 80-100Hz has the same power as 800-1kHz. This quality also makes it quite useful as a reference for sound engineers, especially for sound checking in a live environment.

Also chilling out in the noise spectrum is **BROWN NOISE**. No, not the brown sound - that's something very different. Brown noise (which is named after its similarity to Brownian motion) is also sometimes called red noise. Decreasing by 6dB in power per

octave, it is lower in frequency range than pink noise. Incidentally, pink noise is alleged to be called such because it sits between red and white spectrally.

Spicing up the palette further is **VIOLET NOISE**. Essentially red/brown noise in reverse (mathematically speaking, at least), it increases in power by 6dB per octave, giving it a very high-end nature.

Next up is **BLUE NOISE**. Nothing to do with dissonant blue notes or jazz, blue noise is the reverse of pink, increasing in

strength by 3dB per octave. Visually analogous to a high-pass filter, this is much more 'hissy' than brown or pink noise.

On the hippy side of the spectrum is **GREEN NOISE**. This isn't a technically recognised term: the frequencies in question are said to be the 'background noise of the world', taken from various outdoor locations on the planet. We're not quite sure about the significance of green noise, but what we can say is that it's not very good for hi-hats or toms. Sorry, tree-huggers! **cm**

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The **cm** guide to **SPECTRAL AUDIO EDITING**

Viewing sounds in terms of volume is one thing,
but how about being able to see their frequency
content too? Time to show your true colours...

> **Spectral editing might not be the most inviting, fun-sounding or excitement-inducing of terms. Indeed, it's not even clear from the name exactly what it is or what it's for. So what are we doing here..?**

Spectral editing is audio processing, but approached from an entirely different angle to the classic waveform-based editors that have been the norm since computers were able to, well, edit audio. In fact, it doesn't work with a waveform view at all. This relatively new editing method instead charts the frequency (or 'spectral') content over time, with its amplitude

represented by brightness in what looks almost like a three-dimensional map of sound. The charts plot time (seconds), frequency (Hz) and amplitude (dB) together in one view. As weird as this might seem at first glance, viewing sound spectrally frees you of many constraints that are intrinsic to traditional audio editors, in many ways offering control over much finer details. As a result, certain tasks that would otherwise take hours of fiddling with an arsenal of tools to carry out become quick and easy. Furthermore, the very framework of spectral editing creates a whole new set of processes, making possible

things that you might have previously assumed to be impossible.

As you might expect, this way of working is great for quirky and off-the-wall effects and sound design. However, it's not only the slightly barmy and avant garde crowd who stand to benefit from spectral editing. Its proponents insist its lure has the potential to extend into the fields of restoration, forensics, broadcasting, mixing and mastering - pretty much anything to do with recorded sound. In this feature, we'll demystify the whole shebang and help you to get stuck in. That, dear reader, is why we're here.

Your tunes in lights

Reading a spectrogram can be difficult at first, and is something of a skill in itself - but once you've familiarised yourself with it, it's a very intuitive and fascinating way to visualise sound.

Imagine you're working with a vocalist at home and you've captured a one-in-a-million take - but the neighbour's cat has interrupted the recording with a series of uninvited miaows. In the classic waveform view, your options for correcting this are somewhat limited. An EQ plug-in could maybe reduce sections of the unwelcome sound, but it would be unrealistic to expect the vocal to remain clear and unscathed.

With a standard wave editor, you probably won't be able to fix the recording quickly and easily, because you simply can't isolate this level of detail by selecting portions of a 2D waveform. But when you're using a spectral view, you can literally see the unwanted sounds, and so the

you can potentially isolate and remove them thoroughly and effectively.

We've put an audio file, **Spectral_piano.wav**, on the **cm** DVD as well as the demo of the excellent Photosounder, in case you don't already own any form of spectrogram software. The recording is of a piano playing a C major scale. The bright long blobs near the bottom represent the notes, and the comparatively faded lines above them represent the harmonic frequencies that give the piano its character. Unlike in the classic waveform view, you can clearly see the pitch rising with each hit. You can even see the low-pitched sound of the hammers striking the keys.

So, the spectral view gives us lots of information about the timbral qualities of the sound (eg, how bright it is), and with experience, deciphering this becomes second nature.



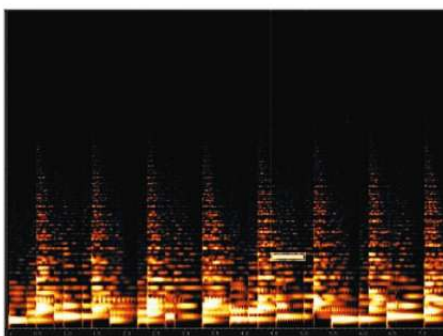
Here we see a pianist playing a C major scale - notice how the notes move up the screen as they rise in pitch

> Step by step

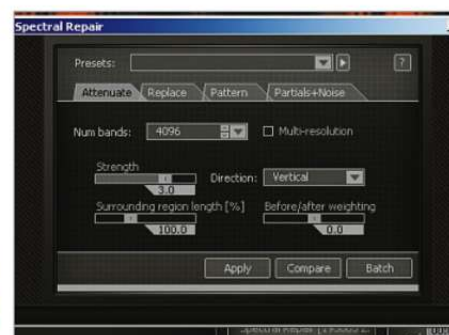
Isolate and remove sounds



- 1 > Load up **Isolation_walkthrough.wav** in your spectral editor. We're using iZotope RX, the demo of which can be downloaded at www.izotope.com. The first step with any spectral editing job is to listen to and look at your audio. We've identified two unwanted incidental noises, which are easily heard but not so easily seen in the regular Waveform view.



- 2 > In Spectral view, it's a different story. We've spotted the first unwanted noise - a random out-of-key tone. We highlight it and adjust the vertical **Spectrogram Color Map** bar to increase its visibility. Use the **Play Frequency Selection** button to check what you see.

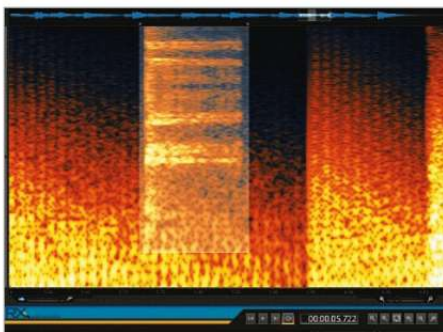


- 3 > Zoom in vertically and horizontally to home in on the tone, then hit the **Spectral Repair** button at the bottom. Push **Num bands** up to **4096**, set **Strength** to **3**, **Direction** to **Vertical**, **Surrounding region length** to **100%**, **Before/after weighting** to **0.0**, and then click **Apply**. And as if by magic...

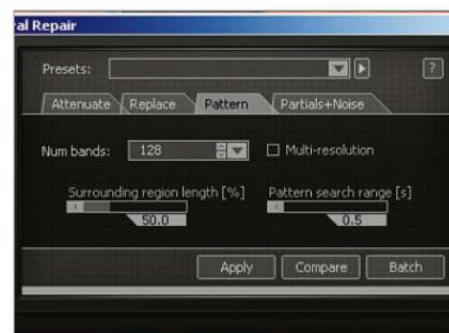
POWER TIP

>Repair care

Spectral Repair is probably the most powerful and versatile tool in iZotope RX's locker, but it helps to have an idea of what you're doing with it or at least a working procedure for ensuring you're getting the best out of it. If you're not convinced by the results you're getting with one of the four modes, try a different one. Most jobs should be quick and easy, but it will require a degree of trial and error at first. In this case, effort can defeat itself - look for the solution with the least number of steps.

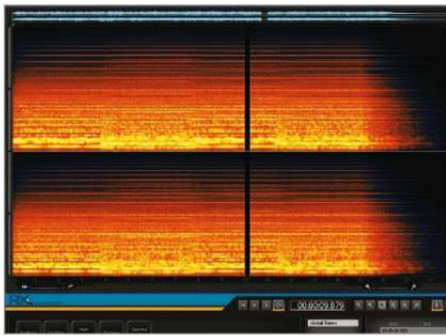


- 4 > OK, that was easy. Now let's go for the tambourine. You can right-click on the rulers to zoom out fully or zoom to default on the **Spectrum Color Map** - adjust them until you can clearly see the tambourine sound. Now, draw a box around it.

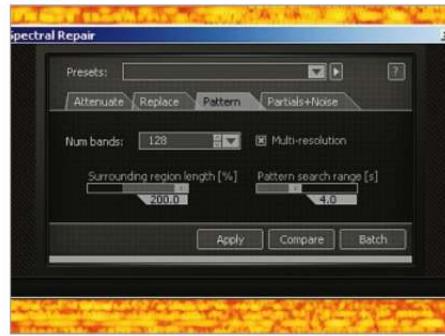


- 5 > Again, RX's Spectral Repair does the trick, but this time we can use the **Pattern** tab. Set **Num bands** to **128**, leave **Multi-resolution** off, put **Surrounding region length** to **50%** and **Pattern search range** to **0.5s**. Click **Apply**. Not bad for a few minutes' work!

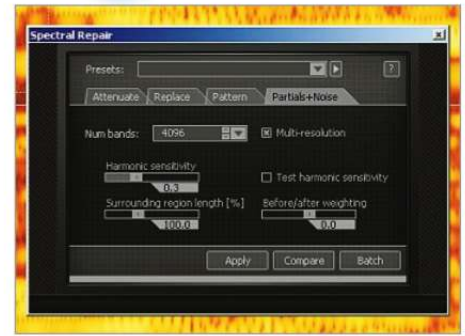
> Step by step Fill in an unwanted gap



1 > Load **Gap_repair_walkthrough.wav** and take a look/listen. Unfortunately, we're not offering prizes for figuring out where the silent gap in this clip is. It's often easier to find this sort of error in normal Waveform view, but here a very obvious break in the audio is readily apparent.

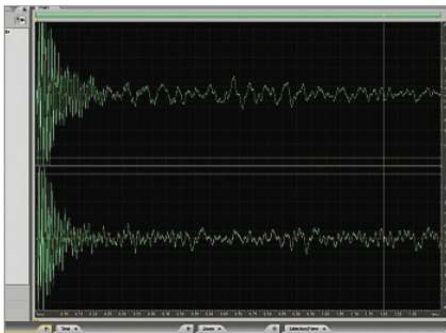


2 > Zoom in on the silence and select the area from just before to just after the gap. With the Spectral Repair tool in **Pattern** mode, put **Num bands** to **128**, check the box to switch **Multi-resolution** on, set **Surrounding region length** to **200%** and **Pattern search range** to **4** seconds, then click **Apply**.

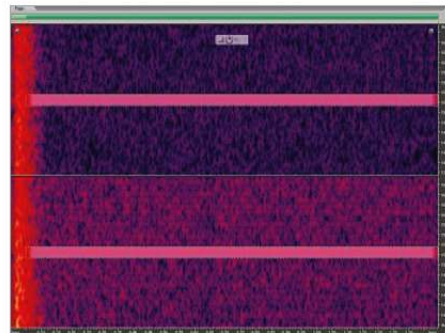


3 > That sounds quite good, but it could have been done without using a spectral view, and there still seems to be an error in the lower frequency registers. Zoom in and make a selection around the low-frequency irregularity. Go back to Spectral Repair and use the **Partials + Noise** tab with the settings shown here.

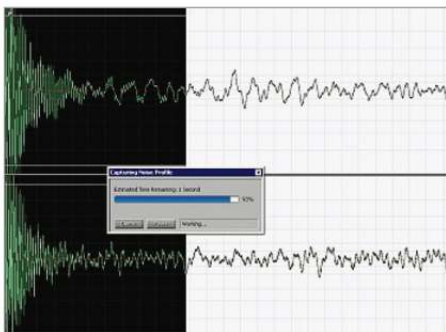
> Step by step Clean up a snare drum



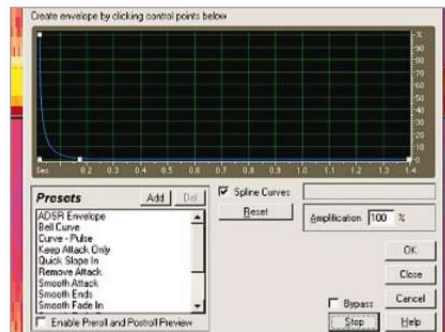
1 > Load up **DNB_Snare_118.wav**. Although it's not unusable, this snare sample is pretty filthy - even for DnB. There's a lot of unwanted noise, rumble and general uncleanness. Let's turn it into a tight, more electronic-sounding hit.



2 > In Adobe Audition 3's Spectral view, it's immediately apparent that there's a high-frequency line around 15kHz. Zoom in and select it. Audition automatically provides a hovering **Volume** knob to apply to the current selection. Reduce it to taste, and don't be afraid of leaving a narrow hole in the spectrum.



3 > Go back to the Waveform view and select the latter portion (after the body of the snare has finished decaying and there's just noise going on). Hit **Alt+N** to capture the noise reduction profile. Then go to **Effects>Restoration>Noise Reduction** and apply it to the entire file.



4 > Back in Spectral view, select everything after the snare's attack, but only above the snare's low resonance (about 200Hz). Navigate through **Effects>Amplitude and Compression>Envelope**. Adjust the curve to taste, previewing until you're happy, then click **OK**.

Experiment!

So far we've given you an overview of the basic principles of spectral editing, but its potential applications go a long way beyond what we've described here. Be daring, have fun with it and throw out the rule book. Sometimes you'll be surprised to learn that things you wouldn't expect to work actually do. It's especially difficult to predict what will or won't work with little or no prior frame of reference. Spectral editing could reasonably be considered an emerging art form, so trying anything and everything will take you past the basic and obvious applications and perhaps into previously unexplored territory.

Armed with a copy of **Photosounder** and **Adobe Photoshop** (or equivalent), the vast array of visual plug-ins available become your new sonic Swiss army knife. With this setup you can export audio files as bitmaps, edit their spectral content, re-import the bitmaps and convert them back to audio. Start by asking yourself what the visual equivalents of useful audio effects might be, then go crazy with the wildest visuals to find out what they do. Maybe you could have a go at using **RX's** restoration tools to reinforce weak drum sounds, creating industrial-strength techno. Don't let your imagination be your limit: curious exploration will be rewarded.

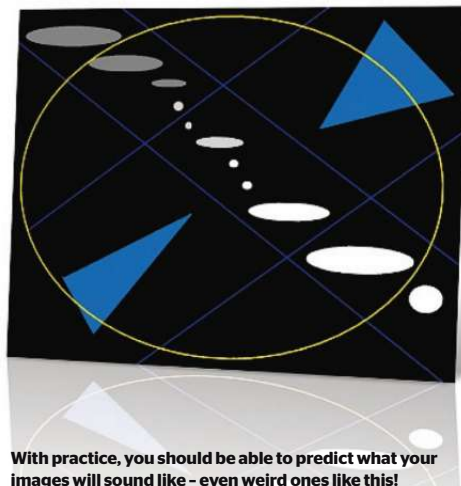
Painting sounds into life

Spectral editing clearly has a great number of practical uses when it comes to dealing with recordings of live instruments, and another side to it is its potential within electronic music. Many revered dance producers have made names for themselves by keeping ahead of the pack, inventing new and exciting sounds. While they usually create them by recycling the tried-and-tested synthesis techniques that have been around for decades, there's a whole lot more that can be achieved in the audio domain without a traditional synthesiser.

With some spectral editing software packages you can synthesise sounds by messing around in a painting program, importing the resulting image and then converting it to audio. This can be quite a tricky business as there are endless ways in which an image can be interpreted as a spectrogram.

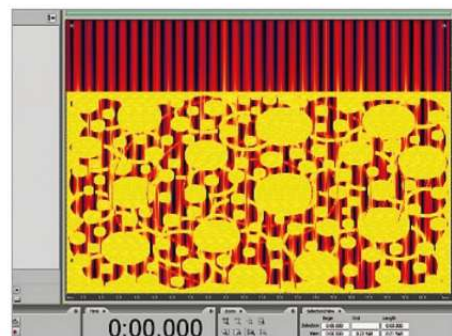
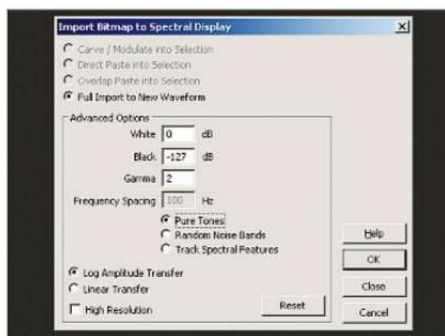
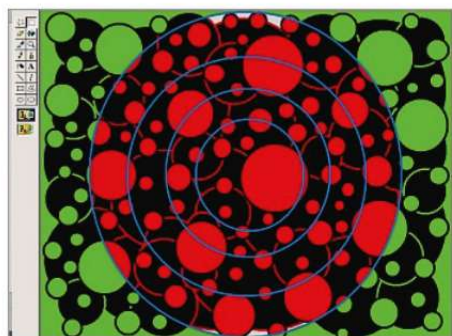
Consider how a vibrant, colourful image might have its dark and light shades interpreted as different amplitudes. To what scale should the horizontal axis be converted into time, and what should the frequency range of the Y axis be? These parameters and more are all adjustable, making a single image capable of producing a huge range of different sounds.

Over time, you should expect to get a feel for how an image might be interpreted. After a while, it's totally plausible that you'll be going into your favourite painting software and quickly knocking up a sample that you need for a particular production, from simple sweeps and tones to detailed atmospheres and even drum sounds. From that point you might start to think about creating different layers or phrases of sound in the visual domain, then editing them together before importing them.



With practice, you should be able to predict what your images will sound like - even weird ones like this!

> Step by step Turn pictures into sound



1 > To start, we'll need an image file, so we get experimental with wild, bright colours and crazy shapes in Microsoft Paint. There's no real method to our madness at this stage - we just let our mouse hand go where it will.

2 > We've included **Doodle.bmp** on the **cmDVD** so that you can follow along exactly with what we're doing. Use Adobe Audition's **Import Bitmap** option with the following settings: **White, 0dB; Black, -127dB; Gamma, 2; Pure Tones; Log Amplitude Transfer; Sample Rate, 44100; Mono, 32-bit (float).**

3 > Have another look and listen - be warned, it's very loud! You can just about recognise the original image by its shapes if not its colours (since they were lost in the process). As you listen, notice where there are visual regularities and irregularities, and how they sound.

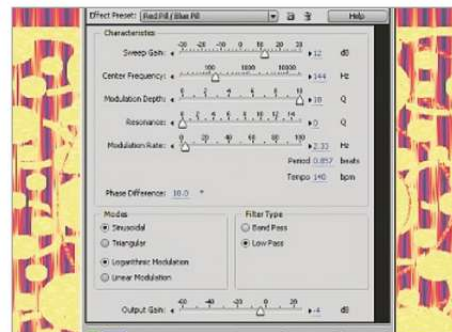
POWER TIP

> Audioshopping

Even without fancy image-editing software, there are some quick and useful things you can do with your image that will heavily affect how it's read as a spectrogram. Stretching and squashing the image on the horizontal axis is the equivalent of timestretching, so have a go at that. Also, don't underestimate the usefulness of margins and borders. Creating blank space above your image will push the image's highest points down the frequency scale, producing a deeper, darker tone.



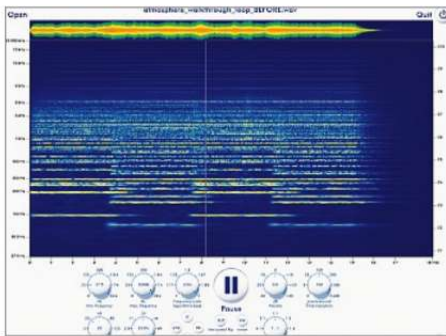
4 > It sounds to us like there might be something useful at the bottom end. Select the bottom frequency band below about **1000Hz**, then use the Trim tool (**Ctrl+T**) to cut everything else away. Yep, there's definitely potential. Undo the trim for the next step.



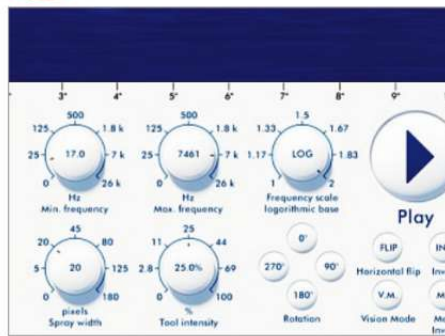
5 > Go to **Effects»Modulation»Sweeping Phaser**. Under **Effect Preset** you'll find the instantly gratifying **Red Pill/Blue Pill** preset. With **Preview** turned on, set the **Tempo**. It sounds very much like a rather familiar genre of music when set to **140bpm**.

> Step by step

Build a haunting ambience in Photosounder



- 1 > We're going to load **Gap_repair_walkthrough_loop_AFTER** to create an atmospheric ambience. Load it into Photosounder (the demo's on the DVD) for your usual look-and-listen routine. You'll notice that it doesn't sound quite the same as it did before. This is because **Lossless** mode is disengaged.



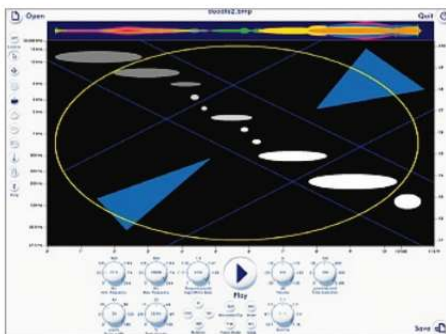
- 2 > Decrease the **Min frequency** to around **17Hz** and the **Max frequency** to about **7.5kHz**. The range of frequencies becomes tighter and the effect is that the sounds get bunched together and truncated, destroying the relationship between chord notes and their harmonics.



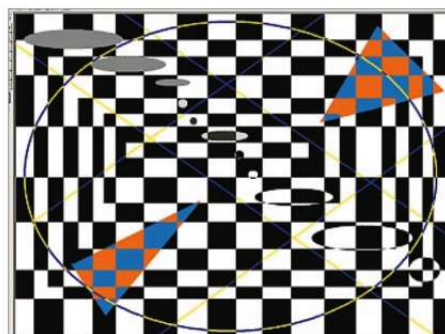
- 3 > This already sounds disturbing, but let's decrease the **Time resolution**. In this case we've used about **50 pixels/second** (down from the default 100 pixels), which doubles the length of the sample, creating spooky artifacts and encouraging the once musical notes to drone.

> Step by step

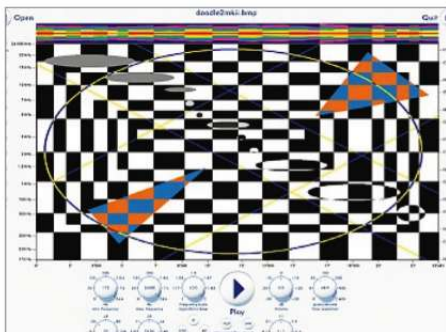
Turn a doodle into a strange atmosphere



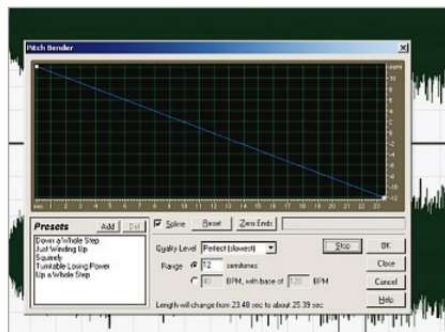
- 1 > Start by loading **Doodle2.bmp** into Photosounder to get an idea of how it interprets the sound. Watch closely while you listen, following the sound with your eyes and ears together.



- 2 > Let's get psychedelic in Paint by repeatedly selecting blocks and inverting them to create some movement and texture. White patches produce intense bursts of sound in whatever frequency range Photosounder interprets them to be, while black areas create silent gaps in their respective frequency pockets.



- 3 > In Photosounder, set **Min frequency** and **Max frequency** to taste, then do the same for **Time resolution**. It might take a while to render each change, but be patient and listen as you adjust the controls. Once you're satisfied with the spectral mush, save the file in .wav format.



- 4 > Now we can process the file in the audio domain using our regular tools. We convert the file to stereo format, then use a simple reverb patch with a long tail and Adobe Audition's Pitch Bender to create a totally nauseating 'vertigo' motion.

Photographic composition

One of spectral editing's most exciting areas of potential is synthesis. It's one thing to use software to modify a recorded sound, but it's a whole different ball game when you're using it to generate original audio. Imagine breaking past the limitations of the traditional instruments and synthesizers, maybe even drawing in the textures of the sounds you want to hear.

On Photosounder's YouTube channel, you'll find *The Age Of Steam* by composer Ian Shaw of www.ianshawmusic.com. According to the video's blurb (www.youtube.com/watch?v=COisGVHPIKQ), the piece was composed entirely from sounds created in Photosounder. It's an imagination-prompting collage of sound, made even more interesting by Photosounder's visual interpretation of the whole thing. It demonstrates remarkable visual clarity, so we'd recommend giving it a look/listen - if only to get an idea of how an entire composition's worth of sounds might look in spectral view. It's also a valuable insight into the direction that sound design and music could move towards if this kind of technology were to really catch on. **cm**

In sequence

Our resident synth wizard takes us back to the early days of synthesis with a guide to Moog 960-style sequencing



> As I write this, the calendar marks a sad anniversary. It has now been five years since the passing of Robert Moog. His ideas inspired nearly everything we electronic musicians do, and some of them have never been bettered. Moog's modular designs begat the Minimoog, which in turn defined the architecture of nearly every synthesiser to follow it. His controversial (at the time) decision to attach an organ-styled keyboard to a synthesiser put electronic music into the hands of traditional musicians, much to the

dismay of the avant garde, who used touch-plates and push-buttons. His adoption of the ADSR envelope (as specified by Vladimir Ussachevsky) made it the de-facto standard tool for dynamic sound-shaping for decades, and is still seen as a supremely useful compromise between flexibility and user-friendliness.

And that sequencer! There have been many other analog sequencers before and after Moog's 960 module, but few have spawned entire genres of music. The 960 did exactly that.

In the hands of Klaus Schulze, Tangerine Dream and Michael Hoenig, it gave birth to the Berlin School of electronic music. What made the 960 so good? A considered balance of power and playability. Users could skip steps, change the sequence length, tweak voltages and even alter the timing on the fly. For my money, the best thing about the 960 was its ability to send out individual triggers for each step in the sequence. This allowed for a sort of 'analogue wavesequencing', a technique I use to this very day. Which leads us right to this issue's tutorial...

>Step by step

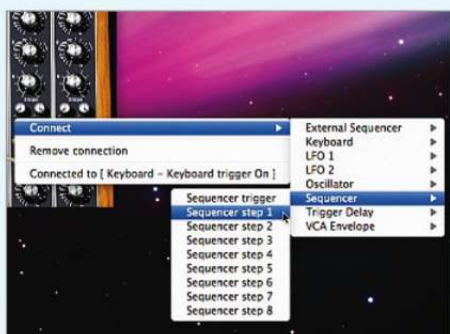
Analogue wavesequencing



1 > The Moog 960 wasn't a standalone sequencer; it was part of the massive Moog modular system. If we want to create the sorts of sounds made by the 960, Arturia's Moog Modular V is an obvious choice. Let's fire it up. Call up my factory bass preset, **SL_SeekNoise**.

2 > This is a squelchy bass sound that's designed to be sequenced. Instead of sequencing a full musical phrase with it, we're going to use the sequencer module's individual trigger outputs to create a complex, rhythmic sequence, in which our bass sound will play only a small part. Scroll up to the Sequencer module in the top row.

3 > Normally you'd create sequences by assigning each row of the sequencer to an individual sound or voltage, with a row's trigger output driving that sound's envelope generators. Here, however, each step has its own trigger output. There's a manual button for triggering each step next to these trigger outputs. Click a few to shuttle the sequencer's position around.



4 > Scroll down and take note of which envelope modules are in use and what they're patched into. The main envelope controls the amplitude of the patch, Envelope 1 drives the pulse width of the Oscillator Driver and Envelope 2 controls the Filter. Right-click the main envelope's **In** patch point and change its trigger to **Sequencer Step 1**, as shown.

5 > If your sequence doesn't begin automatically, activate it by clicking the **On** button in the sequencer's Oscillator section. You should now hear your bass note being triggered every time the sequencer comes to Step 1 of the sequence. Increase the main envelope's **Release** time to around **670ms** to make the sound last beyond the individual step being triggered.

6 > Turn Filter 1's **Frequency** all the way down, then right-click the **Mod in** patch point to reassign **Sequencer Output 1** as the mod source. Crank up the modulation amount by clicking and dragging the little yellow ring around the patch point. The sequencer's top row will now affect the filter. Turn the **Step 2** knob up to **6**. **Step 3** should be **4** semitones, as should **Step 4**.

Scot Solida



Scot bought his first synth over a quarter of a century ago. A synthesist, sound designer and audio engineer of international repute, he's provided factory presets for many of the music software industry's most acclaimed synths, samplers and drum machines, not to mention the **cmStudio**. On rare occasions, he manages to find time to make records for Beta-lactam Ring Records under the name **Christus** and the **Cosmonauts**.

BUSTING JARGON

GATES AND TRIGGERS

A lot of instruments provide gates or triggers (or both) that can be used to kick start, say, an envelope generator or open up a VCA. A gate is a continuous event. When it's opened, it stays open until you tell it to close. A trigger is a single, short event that doesn't sustain - though it can trigger other functions that do sustain for a specified period of time.

RECOMMENDED LISTENING

TANGERINE DREAM, *PHAEDRA*

The album that started it all, *Phaedra* saw Tangerine Dream member Chris Franke begin experimenting with the 960 sequencer as a rhythmic device.

HELDON, *INTERFACE*

While the Germans were spacing out to sombre psychedelia, Richard Pinhas was putting the Moog to thunderous use as a backdrop to metal machine music.

PRO TIPS

OSCILLATION

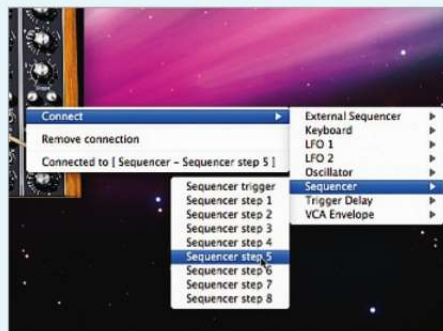
Many have complained about the limited number of simple waveforms found on analogue synthesisers, but did you know that you can use an analogue-style sequencer as a custom waveform generator? Sequencer timing is often generated with an internal oscillator, and that oscillator can often be cranked up into the audible range. When used with other modules, you can create some pretty interesting waveforms!

ALL THE WORLD'S A STAGE

So your four-stage ADSR envelope generator just isn't doing it for you anymore? Have you considered using your sequencer as an envelope generator? I've suggested this before, but it bears repeating: most analogue-style sequencers offer a 'play once' mode and can be triggered to start from an incoming 'voltage' from your keyboard. That means that you can use your sequencer as a complex envelope generator. Better yet, you may even be able to impart some glide between each step using your sequencer's built-in glide function.



7 > Next, repatch Envelope 1 to the **Linear FM** input of that driver instead and set the **Amount** to **0.516**. Right-click Envelope 1's **In** patch-point and reassign it to be triggered by Step 3 of the sequencer. Set the **Attack** and **Sustain** knobs to **0**, the **Decay** to **456ms** and the **Release** to **86ms**.



8 > Every time the sequence comes to Step 2, it fires off Envelope 1, which gives a quick jolt of virtual voltage to the frequency. Let's add another sound. Find the **Filters** module and run a cable from the **White Noise** output to Filter 3's **Input**. Run a cable from Filter 3's **Output** into the second main envelope generator. Reassign that envelope's **Trigger** input to **Step 5**.



9 > We now have a sort of backbeat going. Let's shape that noise with the envelope generator's ADSR knobs. The **Attack** and **Sustain** should be all the way down. Turn the **Decay** up to **76ms**, and the **Release** up to **232ms** or more. It's pretty loud, but happily this envelope generator is coupled with a VCA and has its own volume setting. Let's put that to around **-6dB**.



10 > That's not a terribly exciting sound, but that's why we stuffed it through a filter. Increase the **Resonance** of Filter 3 to around **18** and set the **Frequency** to between **1200** and **1400Hz**. Still not floating your boat? Then let's modulate it! Right-click the module's **Mod in** patch point, assign it to **Sequencer Output 2** and turn the mod amount all the way up.



11 > It isn't doing anything, is it? Scroll to the Sequencer module. The white noise is being heard starting at Step 5, so any changes to Steps 1 through 4 won't mean much! The filter is modulated by Row 2. Set **Step 6** of Row 2 to **-6 semitones** and **Step 7** to **4 semitones** to create an undulating rhythm. You can change the sequence length and order using the **Next** settings.



12 > Let's top off our patch with a bit of delay and chorus. Unfortunately, the Moog Modular V doesn't have an infinite number of VCAs and envelope generators; if it did, we could easily create a unique patch for every step of our sequence. However, you should still be able to see how you can cobble together some interesting rhythmic passages. **cm**

SunVox's Sampler

Part 3 in our series on multi-platform tracker SunVox takes in using samples and adding effects



> So far we've looked at the synthesis capabilities of multi-platform modular tracker SunVox. In this tutorial, we'll take our first peek at using samples by creating a basic drum track using the Sampler machine.

In addition to just being a sound generator, the Sampler in SunVox is a versatile device that can be also used for sample manipulation. You can edit, fade or trim samples, assign vibrato, perform fine-tuning or apply volume and panning envelopes, much the same as XI instruments in FastTracker 2. The Sampler

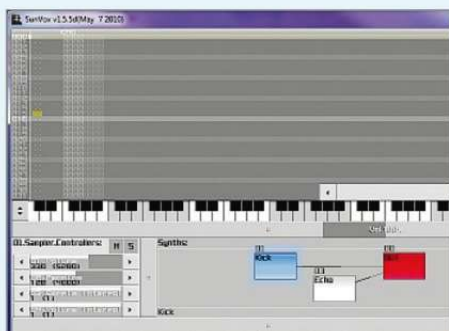
can also hold many samples at the same time. However, because SunVox is a modular tracker – ie, the synths and samplers are individually connected to effects units – if you need a reverb on your snare but not your kick, you will need to use separate Sampler machines for each sound.

We'll also be implementing a couple of useful techniques to improve the sound of our drums. We'll be using reverb on a snare to give it some presence and adding delay (or 'echo') to hi-hats to make them sound fuller and more intricate.

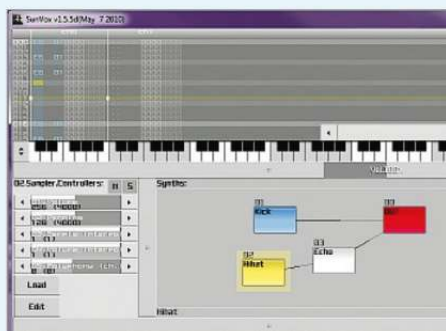
It's a good idea to double-click (or choose **Additional Synth Properties** from the right-click menu) on each Sampler device and name it appropriately as you go, so that you can tell at a glance which machine is responsible for producing which sound. Changing the colour of machines is also a good idea, because the notes in the Pattern will be depicted in those same colours – making all that hex flying past much easier to decipher.

It's time to get started! The files and the samples you'll need are all on your **cmDVD**.

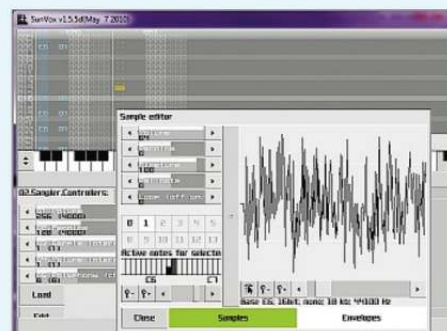
>Step by step Add samples and effects



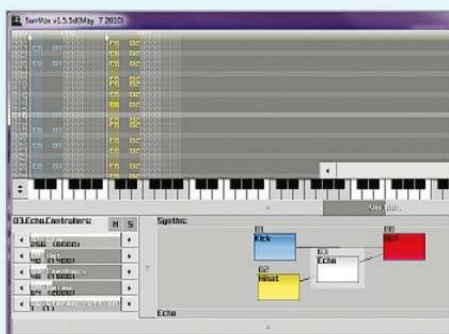
1 > Start with the last file from last issue's tutorial. Delete the Generator machine, then click the **Synths** menu, choose **New Synth** and bring in a Sampler machine. Double-click the Sampler and rename it **Kick**, then change its colour and connect it to the **OUT** by holding **Shift** and dragging a line between the two. (File on the DVD: **CM_trackers_tutorial_30f**.)



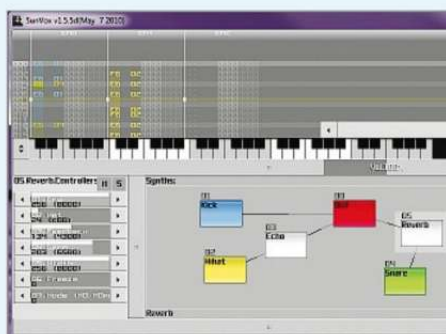
2 > In the **Synth Properties** panel on the left, scroll down until you see the **Load** button and load in the **Kick** sample. Now you should be able to audition the kick. In the first Pattern channel (**ch0**), enter a kick rhythm. Now invoke another Sampler machine for our hi-hats (rename and colour appropriately) and connect it to the **Echo** device. (File: **CM_trackers_tutorial_31a**.)



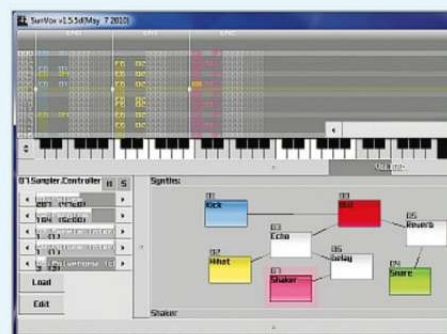
3 > Load the **Hi-hat** sample, then click on **Edit** in the **Synth Parameter** panel and choose **Samples**. Currently our hi-hat sample is in Slot 0. Click Slot 1 to activate it, then press the **..** button (to the right of **7**) and load the **Open-hat** sample. Scroll along the active notes and click **F6**, the note to the right of the half-black default note. (File: **CM_trackers_tutorial_31b**.)



4 > Now, when you audition notes, pressing **E6** and **F6** should sound the hi-hat and open-hat samples respectively. Enter a hi-hat rhythm in the second channel (**ch1**) using both these notes. Change the **Echo's Delay** setting to **64** and lower the **Feedback** and **Wet** settings to taste. (File: **CM_trackers_tutorial_31c**.)



5 > Invoke another Sampler machine, this time for the snare. Also bring in a Reverb machine and connect the Sampler to the Reverb and then to the **OUT**. Load the snare sample into the new Sampler and place snare notes on **ch0**, where our kick currently is. Bring the **Wet** down on the Reverb and alter other settings to taste. (File: **CM_trackers_tutorial_31d**.)



6 > Finally, add another Sampler for a shaker. Bring in a Delay and connect the Sampler to it and then to the existing Echo. Now place an even shaker rhythm on **ch2**, entering **20** in the **Volume** column every other note. Alter the **Delay** parameters slightly to fill out the shaker. (Files: **CM_trackers_tutorial_31e**, **CM_trackers_tutorials_31f**.) **cm**

Using modes

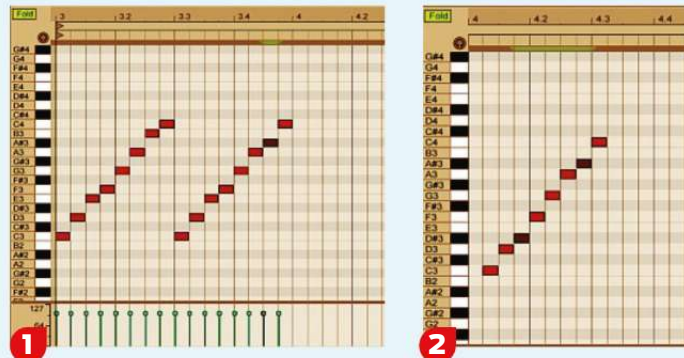
Go beyond major scales and slip into modal harmonies to make your tunes sound even more interesting



> So far in our current thread on melody, we've focused on the construction and notation of major scales, as well as a few deviations from them in the form of chromatic notes. But what happens if we permanently alter the structure of a scale? Let's begin with a brief reminder of what a major scale actually is.

The ladder

The name 'scale' is derived from the Latin for ladder. In every major scale the rungs are arranged in exactly the same way, and the gaps between them are of various intervals – tones and semitones (exactly half the size of tones). In the piano roll editor, the unequal sizes of the steps in our archetypal C major scale are only too apparent (see the first scale in **Fig 1**). In the past we have played around with this arrangement and listened to the effect of, for example, temporarily lowering the seventh note of the scale (to B $\flat$ in this case). But what if we keep it lowered permanently? While you could say that we've moved into the key of F, if the bass stays obstinately on C then we're looking at a new scale, albeit one that's only one note different to C major. This 'flat seven' scale is known as the Mixolydian mode and can be seen



on the right half of **Fig 1**.

If the notes of the C Mixolydian scale are identical to those in the F major scale (just starting on a different note), then this provides an alternative and equally valid way of conceptualising the mode: we can say that a Mixolydian mode is a scale that starts on the fifth step of its 'parent' major (C being the fifth step of F). In this way, every major scale that you know can be turned into its Mixolydian counterpart simply by starting it on its fifth note, preferably underpinning it with a bass pattern

- 1 The major and Mixolydian scales compared are only one note different, but it's a rather telling note.
- 2 The Dorian's minor (lowered) third is, if anything, even more crucial to the overall sound of a phrase.

that emphasises said note, and perhaps a dominant 7th type chord. Lots of traditional folk music, blues, jazz and a number of pop tunes feature the Mixolydian mode, so it's definitely worth getting your head around.

The second mode

If we start our major scale on its second step, we create the sound of the Dorian mode. This modal effect can be enhanced by sustaining the root note (now the second step of the parent major) and preferably accompanying it with a minor or minor seventh chord. The Dorian mode is one of the many flavours of minor scales (named as such because of the minor third it contains, three semitones above the root note, rather than the four of the major or Mixolydian) and is used extensively, particularly in folk and jazz (see **Fig 2**). Like the Mixolydian, the Dorian has a lowered seventh (compared to the major) but, as we have noted, it has a lowered third as well. It therefore lies in a progression of scales: from the major, lowering the seventh gives you Mixolydian, and then lowering the third gives you Dorian (compare **Fig 1** with **Fig 2**). The MIDI file on the **cmDVD** contains brief melodic improvisations of the three scales in this order, but you will of course learn more by conducting your own explorations.

Modes in dance tracks

You don't have to be a jazz or folk fiend to find these scales useful: they have distinctive sounds and can be used in pretty much any genre. If you're getting familiar with a range of major scales, it's fairly easy to see them from a modal perspective: simply underpinning them with the appropriate bass note – the second step of the major for Dorian, and the fifth for Mixolydian – breathes a new lease of life into your familiar major scale. With this simple expedient, you can experiment with the two most ubiquitous and useful modal scales in any key, creating modal melodies to your heart's content.

Next time we'll look at one more mode and turn it into a classical minor key (or two!). **cm**

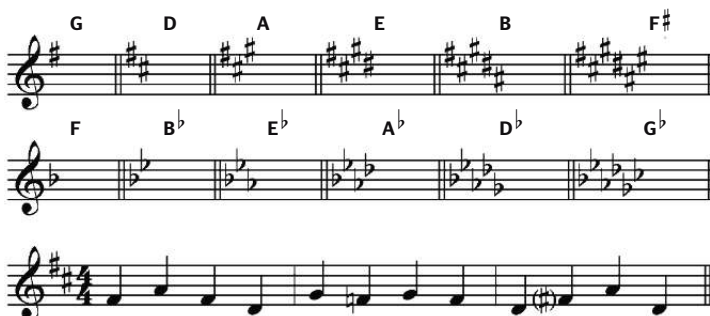
Staff notation special

In **cm156** we showed you a few examples of key signatures, where a pattern of sharps or flats are placed at the beginning of each line of music, creating the conditions for a particular scale (or mode). Apart from C, which requires absolutely no sharps or flats, all of the common major key signatures are shown in the example below. Note that G $\sharp$ and F $\sharp$ scales contain identical notes, just spelled differently.

Key signatures also serve to represent minor keys, which for the present may be thought of as modes beginning on the sixth degree of the major: for example, the D major key signature (two sharps) may also

indicate B minor. More on minors later. This is as far as classical theory goes, but if you're notating a modal piece, you can use the key signature of its parent major, so the D major signature could be used for a piece that is either predominantly or wholly in E Dorian.

Accidentals (sharps, flats or naturals occurring in the body of the piece) may still be used either for chromatic notes or to temporarily change the key, but following the bar line sees the key signature scale reassert itself, as in the example below. It is common, however, to add 'courtesy' accidentals as a reminder.



Both Fs in bar 1 are sharp due to the key signature. The first F in bar 2 is lowered with a natural, as is the second. The sharp in brackets in bar 3 is a reminder that the key signature has been restored by the bar line.

Avant-ifying drum 'n' bass



DnB is one genre that's already pushed to the limit in a number of ways. Use your imagination to up its ferocity and take things even further

rachMiel



rachMiel has spent the better part of a decade studying composition in America and Germany. A recovering atonalist,

his musical influences range from Frank Zappa, Karlheinz Stockhausen and North Indian classical drumming to 60s pop, horror movie soundtracks, avant electronica and above all, silence.

> **Welcome to the third in a six-part series on creating avant variants of popular electronic music genres. In the first two instalments (cm156, cm157) I avant-ified downtempo and techno. This issue, I take on drum 'n' bass. Still to come are hip-hop, dubstep and house - watch the skies!**

Divining DnB's essence

The first step in avant-ifying a genre is divining its essence. I've been using the HAL approach to do this: history, attributes, listening. Historical research provides a sense of the genre's stylistic roots, while compiling a list of its key attributes helps home in on its core musical personality. Finally, deep listening gets the feel of the genre in your head and gut.

In an historical nutshell: house, trance, and techno begat hardcore rave; hardcore rave and Jamaican dancehall begat jungle; and jungle morphed (some would say devolved) into drum 'n' bass. So DnB's essence contains bits of the DNA of all these preceding genres. As for DnB's key attributes, here's what I came up with: dance roots, ecstatic, boundary-thwarting, superhuman drum virtuosity, sophisticated sampling, seething with testosterone, and the Big Three: crazy fast breakbeat-ish drums; blobby, hyperpresent bass; and supplemental layers (FX, pads, movie/TV clips and melodies). There have been hundreds of fabulous DnB producers but here's my personal top 10: Bad Company, Dillinja, Ed Rush & Optical, Goldie, Grooverider, LTJ Bukem, Pendulum, Photek, Roni Size and Spor.

I'd like to share two cool takes on the essence of DnB, both from members of the IDM Forums (www.idmforums.com). First, by Dogbreath: "For me its the feeling of speed. The beats washing over you, splinters of sound flying all over the place and the bassline twisting and growling like a fire in your belly." And second, by Monstre: "There is just nothing else like DnB. It's f**king rad. It has everything: speed, bass, complex melodies, liquid texture, epic buildups, aggressive drums. And it sounds good too."

Deep possibilities

Drum 'n' bass is supremely amenable to avant-ification. Indeed, much of DnB has one foot in the avant world to begin with. Focusing on the Big Three - drums, bass, supplemental layers - is a great way to get started. Think: extremes! Create a 320bpm variant of the good old Amen break. Or squish it into a 7/4 meter. Change tempo every few bars, gradually or suddenly. Compose a bassline that consists of a single held note modulated by multiple LFOs. Overlap half a dozen basslines, add a sub-sonic sine wave interference track to the mix, perhaps a theta standing wave to lull your victims (umm, I mean listeners) into brain-entrained trance. As for supplemental layers, the sky's the limit - go wild! As long as the DnB foundation is solid and compelling, you can get away with anything.

Most DnB tracks - even the radical ones - stay within the comfort zone of 32/16/8-bar sections. I've gone beyond this by creating sections based on numbers from the Fibonacci series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, etc. Drum sections of 1, 2, 3, 5, 8, 13, 21, 34 bars are interleaved with bass sections of 34, 21, 13, 8, 5, 3, 2, 1, resulting in a symmetry where bass dominance gives way to drum/bass mix and then to drum dominance.

"DnB is beats washing over you, splinters of sound flying all over the place and the bassline growling like a fire in your belly"

Living up to jungle

Like all genres, drum and bass has a distinct genealogy - a procession of ancestors and descendants. The nuclear DnB family began with hardcore rave, which established itself in the early 90s as de rigueur music for all-night raves. Hardcore rave was one part house, one part techno, one part trance and one part dramatic newness, characterised by heavily lurching basslines and wildly fast breakbeats (130-160+ BPM). When samples

from old Jamaican dancehall tunes were added to the mix, jungle was born.

Ishkur (of Ishkur's Guide to Electronic Music at www.techno.org/electronic-music-guide) gets nicely at the essence of jungle: "The antithesis to the bright, flashy schmalztz that some of the other genres exhibit, the black sheep of the electronic family is rough, abrasive, crusty, dirty, and full of swaggering machismo." Jungle is untamed, feral,

menacing, raw. Drum 'n' bass - its direct descendent - features enough of that same rawness to make the line between the two genres somewhat hazy. In general, though, DnB is more cerebral and experimental and less dripping with ecstasy-driven Jamaican dancehall-saturated rapture. Many diehard junglists were put off by DnB's taming-down of jungle - even Ishkur dismisses drum 'n' bass as "jungle lite".

>Step by step

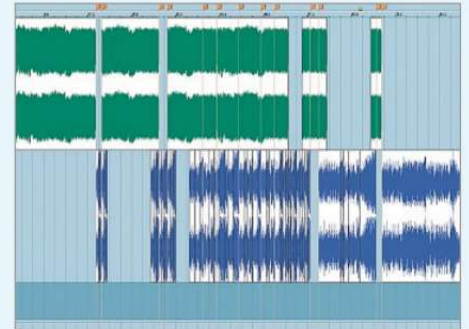
Avant-ify drum 'n' bass



1 > After coming up with the interleaving Fibonacci drum/bass formal structure demonstrated on the previous page, I turn to my old friend Reaktor to create the generative 34-bar drum part. I rip a DnB sample from a back issue of **cm** and subject it to the slicing 'n' dicing wiles of Lazyfish's excellent Splitter Reaktor ensemble. Here's the result: **Beat.wav**.



2 > Next, I create the generative 34-bar bassline needed. I use radiansoundlab's magnificent bass synthesiser, dusk, to do this. After much experimentation, I decide to play and sustain a single note (C5) while using the pitch wheel to modulate the LFO that controls the filter sweep (cutoff frequency) and the pitch: **Bassline.wav**.



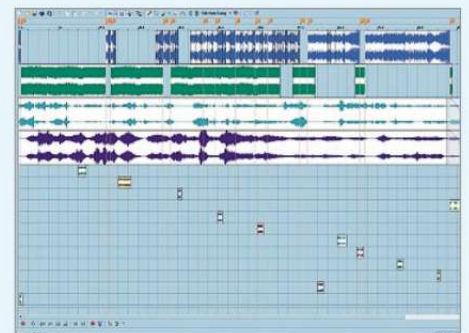
3 > With the generative 34-bar drum and bassline parts in hand, I follow the formal plan to create the drums and bass foundation of the piece: one bar of drums, 34 bars of bass (the entire bassline), four bars of drums (two main + two 'echo'), 21 bars of bass, and so on. The piece moves from mostly bass to an equal mix of drum and bass, to mostly drums: **Drum+bass.wav**.



4 > I'm quite happy with the foundation, but feel that the piece would benefit from some gooey, noise-rich supplemental layers. I decide to create these by feeding the 34-bar drum beat into my Reaktor ensemble gNash raMbler, and the 34-bar bassline into luGubrioso. Here are some excerpts of the sounds that I ended up with: **Mashes.wav**.



5 > I'm almost done. One of the things I really like about DnB is its use of snippets from movies and TV. I opt to go back in time and use clips from a classic cops-and-gangsters radio show. I extract a set of 12 short vocal clips - **Radio_clips.wav** - and distribute them (by feel) over the timeline of the piece. Together, they tell a quasi-story.



6 > All the layers are in place: drum beat, bassline, drum mash, bass mash and radio clips. All that's left is to arrange them in time, mix down and master. Since the piece is built around the foundation of 176 interleaving drum and bass bars (top two tracks above), the mash and radio layers must fit within this time line. Here's the final piece, **Johnny_Promise.wav**. Enjoy!

Experimentalists' corner: Musical genres

Let's take a closer look at the term 'musical genre'. TheFreeDictionary defines genre as: "A category of artistic composition, as in music or literature, marked by a distinctive style, form, or content." So, a musical genre is a class of pieces that share significant similarities in style (beat, tempo) and/or form and/or content (instrumentation, lyrics).

Genres do not arise from the void, autonomous and fully formed. They are

interdependent species in an evolving continuum. For this reason, people often speak of the genealogy of musical genres. Genres often share key characteristics with one another, both internal and external.

Popular genre evolution is heavily linked to marketing, consumerism and sociology. In his paper *Genres*, Kembrew McLeod writes: "The naming of new subgenres can be linked to a variety of influences, such as

the rapidly evolving nature of the music, accelerated consumer culture and synergy created by record company marketing strategies and music magazine hype. The appropriation of the musics of minorities by straight, middle- and upper middle-class whites in the US and Great Britain plays a part, and the rapid, ongoing naming process within electronic/dance music subcultures acts as a gate-keeping mechanism." **cm**

Finding inspiration

Feel like you've wrung your mind dry but ended up with the same tired old ideas? We reveal a myriad of methods to get your brain moving again



Developing your musical imagination

Those untrained in formal keyboard skills tend to get into familiar and predictable habits when regularly trying to write hooks and chord progressions on a MIDI keyboard, or when entering notes into a piano roll. We'll almost always favour certain keys, and our fingers and note choices will tend to follow familiar patterns around them. This can leave us feeling like we've got relatively little scope in what we can do on a keyboard, and boring or generic leads and basslines usually follow.

An effective way to break out of this habit and develop our musical imagination is to try whistling, humming, singing or beatboxing melodies, basslines and rhythm parts first, then working out how to play or program them second. This method of writing is effective because it taps into and develops our natural musicality. If it feels difficult or directionless at first, it may be because we've never relied on our imagination for ideas before; rather we've relied on where our fingers or mouse pointer falls. We may eventually find that we can conceptualise whole parts, or even complete tracks, without having to whistle or hum. This is how many of the best composers throughout history have worked. We can find ourselves doing things musically that we'd never have wound up playing instinctively on a keyboard, or doing brilliant things harmonically that turn out to appear painfully simple when we come to play them - perhaps so much so that we'd have talked ourselves out of using them.

> **The process of learning how to write, record and engineer music to a high standard can be a lengthy one. Huge advances in the tech we use to create music mean that many of us are attempting to single-handedly do what would've required a producer, multiple musicians and a couple of recording engineers in a professional studio only a few short years ago. Yet, as we all eventually learn, no amount of technical knowledge can ever make up for those times when we're suffering from a complete lack of inspiration.**

Inspiration means different things to different musicians. Some of us like to have a clear picture of what we're trying to work towards right from the start, while others prefer to follow their noses. Either way, in a practical sense we can say that inspiration usually involves having an idea of what we're working towards, and possessing the drive and enthusiasm needed to pursue it.

The word 'inspiration' means 'breathed upon'. In ancient times it was considered to come from somewhere outside the artist and was often thought of as divine in nature. These days we tend to think of inspiration as something that comes from within the artist - perhaps the result of certain ideas they've been exposed to or events that they've experienced.

Many still see inspiration as something slightly beyond our control, though - something that has to come along and find us. But for professional musicians and music producers, waiting for inspiration isn't always an option. When a film composer needs to provide the score for a movie, or a dance music producer has to produce a remix to a deadline, he/she has to learn how to spark, or even manufacture, inspiration as and when it's needed.

Stuck on repeat

The first place that many of us look when we're running low on ideas is within the music scenes that we associate ourselves with. Einstein once wrote: "The secret to creativity is knowing how to hide our sources." Although there's nothing wrong with doing this as long as we manage to ultimately create something interesting or different with these ideas, the downside of getting too much inspiration from people

making similar music to us is that it can lead to our work feeling insular and recycled. Even worse, it can leave us always playing catch-up with the more original artists in a music scene and stop us developing a personal style.

One big reason that many people find it difficult to feel inspired about their productions is an inability to write distinctive, interesting musical phrases - without relying on stumbling on them by accident. This can be easily glossed over as technology and technique play a more central role in our production environments, but without tackling the problem head on, this lack of inspiration can linger and grow.

Here we'll look at ways to spark and develop ideas for both conventional composition and contemporary music production, as well as all sorts of ways to kick yourself out of those inevitable creative slumps. We'll also look at workflows - how our working methods can help us find ideas and transform them into tracks - during an exclusive interview with acclaimed drum 'n' bass producer Utah Jazz.

Conventional approaches to inspiration and working methods

While the advent of so many forms of new technology has shifted the focus of much modern music towards production and away from composition, the principles of conventional writing and arranging remain important.

Being able to write a strong hook, chord progression or bassline is one of the best ways to find inspiration, ideas and enthusiasm for a production, and throughout the ages, hundreds of techniques have evolved to help break down, quantify and improve the art of musical composition.

into something that simply works within a production. While this perspective is not necessarily 'wrong', it can leave you feeling uninspired and hence lead to less-than-memorable music, even when the production is very slick.

You should always start with a strong musical idea. This might be a rhythm, a chord progression or a melody, but starting with a strong foundation gives a track a sense of direction and identity, which should carry through the whole production process.

1

Always start from a strong foundation

Most great pieces of music - from orchestral compositions to pop songs - have a memorable feature that makes them stand out.

The technical and methodical approach that audio engineering tends to require makes it easy to start thinking of musical composition as being the skilful or technical arranging of notes

2

Make sketches

Get into the habit of recording all of your ideas and making short sketches. Before the days of computers, composers and songwriters kept notepads or books of manuscript paper full of all the little musical ideas they came up with during practice or just when experimenting or doodling. Most of their works would eventually come from these sketches: more interesting ideas would be revisited and developed, and eventually turned

"One reason people find it difficult to feel inspired is an inability to write distinctive musical phrases"

Going live

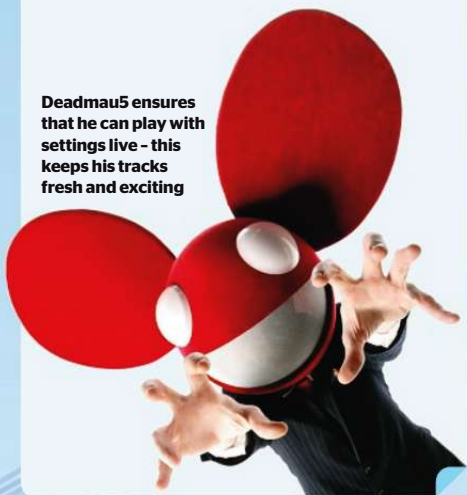
It's always worth considering how you can incorporate more live elements into your studio sessions. These can delineate the feel or direction a track takes, as well as being a fun and very encouraging way to interact with our music at those times when we're bored of rearranging grids and poking away at things with the mouse.

Joel Zimmerman (AKA Deadmau5) makes laser-tight house productions, but he still manages to include a lot of live elements in his work. Synths filter and envelope settings are almost always manipulated live and recorded as either MIDI data or directly from the instrument as audio, while an array of MIDI controllers enable the mighty 'mau5 to perform and experiment with track arrangements on the fly, rather than relying on established dance protocols.

Another idea can be to leave the strings or pads in your track until near the end, then record them all live for the duration of the track without any quantising. The contrast of natural and metronomic timing is an important – and sometimes overlooked – aesthetic in many modern genres.

Otherwise a simple egg shaker, miked up and recorded for the duration of a track, can add a natural, live element to an otherwise tight, metronomic electronic production.

Deadmau5 ensures that he can play with settings live – this keeps his tracks fresh and exciting



into the rhythms, chord progressions and melodies that were the backbone of their works.

A lot of us do this already when making beats and drum loops, as they're a common starting point in many genres today; but building up a library of basslines, synth leads, strings and short tracks can give us a much broader selection of starting points and ideas to dip into when inspiration is required.

3 Harmonic composition

In harmonic composition, the track starts off as a chord progression, onto which melodies, rhythms and basslines can be added. The chords dictate what the music does and keep things locked to a certain pattern. It can be a good idea to change the chord progression as the song progresses to avoid things feeling stale.

A lot of people find harmonic composition a very effective way to get started, as it

immediately gives you a framework upon which to structure the rest of a track.

Writing a good chord progression doesn't require an in-depth understanding of music theory. One easy way to string chords together is simply to move chord shapes up and down the keyboard. Although this usually involves hitting a lot of out-of-key notes, there's nothing wrong with this practice, which is commonly known as 'parallel voicing'.

4 Melodic composition

This method involves starting off with a strong, identifiable melody, then working out what chords fit around it. It gives you a lot more freedom than harmonic composition, as not being locked to a chord progression enables you to go anywhere with your melodies and write in a much looser way. Finding chords to smoothly harmonise with a melody often requires a little more musical knowledge than the previous approach, however.

A simple way to think of melodic composition is in terms of arches, inverted arches and ramps – a melody usually either goes up then down, down then up, or just up/down. Thinking like this emphasises the importance of movement and direction in a musical phrase, hopefully avoiding it sounding like a random combination of notes.

5 Creating tension in melody

Tension is central to creating memorable and interesting music. There are two fundamental principles that can make a piece of music resonate with us: it can be original, daring, exciting and unusual; or it can feel familiar, nostalgic, homely and grounded. Tension is created through the contrast and balance of these two elements. Put simply: the predictable should be balanced or contrasted with the unpredictable.

Scales contain both expected and unexpected notes. The expected notes are usually chord notes. In the key of C minor, the expected notes would tend to be C, E^b and G. D, F, A^b and B would be unexpected notes. The balance and relation of expected notes to unexpected notes give a melody much of its identity.

To create even more tension, you can use non-key (chromatic) notes. Some of these will sound much more natural than others, but they often need to resolve immediately to a more predictable (generally a chord) note. Check out our regular *Easy Guide* to music theory (p75 this issue) for more on the fundamentals of using non-key notes to create melodic interest.

Another way to create tension is to use leaps. These are when a note makes an unexpectedly large jump up or down the scale.

6 Rhythm in melody

One method of breaking down composition into more manageable elements is to separate the rhythm of a part from its pitch. This is particularly effective when adding melodic or more experimental lines to a basic

“Music can be original, daring, exciting and unusual; or familiar, nostalgic, homely and grounded”

track structure. Say you've got a few bars of drums and a bassline, and you want to add a lead. Consider first what you want to add to the track at this point – is it a high-energy track that needs something to push it forward and add a sense of urgency, is it a laid back or downtempo song that requires a chilled-out melody, or has it already got enough energy and needs something more subdued to bring it down or create a contrast?

Instead of going straight to the keyboard, try drumming a rhythm part with your fingers on the tabletop that might add the quality you're after as you listen to the track. This method can bring interesting and dynamic rhythms to light.

The next step is turning this into a musical phrase. Go to your MIDI keyboard, select the sound you want and play the rhythm you've decided to go with on a series of single notes. What's going to give this a musical identity will be where, and by how much, you elect to shift the pitches up and down.

For a dance track, we might use the placement and pitching of the drums and percussion to help us decide where the high and low notes of the phrase should fall. Refer to the earlier sections on melodic and harmonic composition, too.

7 Call and Response

One way many musicians learn to break down the structure of a musical phrase is to consider it as being divided up into a question part and an answer part – or a 'call and response'.

The call might be a bar or a few bars long, and will set something up musically that feels like it needs to be resolved. This line will sometimes resemble the pitches and timings that a human voice might follow when asking a question.

The response part of the line resolves the question (call) posed earlier. Sometimes it will follow a similar rhythm – it might simply involve transposing the call line down a few tones, or just changing the last note – and sometimes it will bear little relation at all. Call and response lines can alternate, forming a hook, or a call line might be repeated a number of times and either ended or interjected with a response. Sometimes the answer might be repeated.

A simple way to write these lines is to start on the root note of a track and find an interesting way to transition up or down to another. Listen to the melody a few times so that you become familiar with it, then try to imagine what the response should be. If you find this difficult, try saying or singing the call as an actual question, phrased somewhat musically, then do the same when saying the answer. Listen to jazz and blues and identify which phrases sound like they're asking questions, and which sound like they're answering them. Call and response lines are also often used in soulful and deep house tracks.

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Look around you

Our setting and environment can play a huge role in how we feel and think musically. Sometimes the feeling that we're stuck in a creative rut can actually stem from an over-familiarity or boredom with our studio space. We've all experienced that short burst of enthusiasm and creativity that comes when we buy a new piece of software, but a cheaper and often more effective route can simply be to rearrange our setup every so often, and perhaps redecorate our studio. Never underestimate the creative surge that a few coloured bulbs in a few table lamps, a clean workspace or some pot plants can help to bring on.

If you want a light bulb moment, try making your studio a little comfier

On the same note, think about visual distractions in your studio space. A television is one of the worst things you can have in a place intended for music, because of its power to divert attention - it's an accepted rule in theatre never to use a working TV set as a prop on stage. Sean Booth of seminal Warp Records act Autechre even recommends having regular periods where you turn your computer monitor off and work more intuitively, as seeing a track represented visually all the time can distract you from hearing it properly.

Get into the flow

We all tend to develop certain protocols in the studio to help us move from a blank slate to a finished track. 'Workflow' is the system we develop to break down and divide up the process of writing and engineering a track into manageable elements. While generally evolving through nothing more than habit, workflow can be the place where creativity either flourishes or shrivels. So it's always worth taking a fresh look at our working methods to make sure that we're regularly giving ourselves the space and perspective on what we're doing to make imaginative, thoughtful or spontaneous decisions where appropriate.

It's very easy to develop workflows that keep us stuck making the same mistakes over and over. For example, if we start 100 tracks a year but never finish anything, perhaps half of our workflow works really well but we find the other unappealing. If that's the case for you, try taking some old, unfinished tracks right through the arrangement and mixdown stage just for the experience of developing a more complete workflow. The results might surprise you!

Richard James (AKA Aphex Twin) is known to regularly rearrange his studio space and change the gear and software he works with just to avoid getting into familiar habits and to keep things feeling fresh. That's a trick that you could try yourself.

Utah Jazz on inspiration

DnB DJ, producer and remixer Utah Jazz (AKA Luke Wilson) has been clocking up critically acclaimed releases on numerous labels since 2001, including Good Looking Records, Liquid V and React. He took some time out of his hectic schedule to share with us his methods for finding musical inspiration and structuring his studio workflow. "Since my tracks are heavily sample-based, I'd say I probably spend more time finding sounds to use than I actually do laying tracks down," he reveals. "I have a hierarchy of folders on my computer that contain sounds or samples from different sources. If I find something that really stands out, it moves into a special folder that's most important to me. Sometimes samples will sit in different folders or get moved back and forth for a couple of years before I feel like it's the right time to use them.

"Once I've found a sample that I'm itching to work with, I'll quickly chop it up using ReCycle and import it into Battery 3. After that, and once the sample's repeating on a loop, I open up a folder with hundreds of breaks in and audition them over the top to hear if any of them will work.

"At this stage, assuming everything's going well, I tend to solo the drums and start building on them with a few other hits and percussion sounds to beef them up a bit. What I find key to making sample-based music is that the pattern or groove of the drums sits perfectly with the main samples - especially if these samples already have drums on them.

"So I'll sit for a while and play around with the kick and snare MIDI blocks from the break I've chosen. I'll structure them in as many ways as possible around the sample until I find one I'm happy with. Now I've got a decent 16-bar loop with, hopefully, a 'killer' sample and some drums that are working too. At this point, I'll solo the original sample and start trawling through more to see what else I can find to work with it. It's usually still just sounds at this stage, with vocals being added right at the end. A tip Alex Reece taught me was to always get a track sounding as good and as interesting as possible without vocals, and see them as the icing on the cake at the end, rather than adding vocals early on and letting them carry an otherwise average tune.

"I deliberately forced myself into the unknown and got my hands on music I'd never heard before"



Performing live can be an inspiration in itself, as it gives you the freedom to quickly try new things

"Once I feel I've found enough sounds for the track and I'm happy with it, I'll move on to the arrangement stage. The process from start to finish for a whole tune would generally be six to eight hours. This is assuming that I've had a good day and that the samples are coming out to play and fitting together! Many of my tracks have been written over years because I've found a decent sample and some interesting drum work, but then I'm at a loss as to what to use with it. I have yet another folder of unfinished sketches and I always audition decent new samples I find over the top of these half-written tunes, just in case it's the missing ingredient I'm looking for."

Into the unknown

So it's the samples themselves that provide the inspiration for many of Luke's tracks. "I do often play keys, strings or basslines on many of my tunes, but even they tend to be worked around a sample," he explains.

"For *Vintage* [Luke's most recent album], I deliberately forced myself into the unknown and got my hands on music I'd never heard before from sources that that aren't associated with drum 'n' bass. For example, a friend of mine is a big prog rock fan, so I asked him to hook me up with some examples and then spent hours delving into his collection for sounds to use.

"The samples for my first album came pretty much entirely from my brother's 70s soul and funk collection. When I start work on my next, I'll be changing again and looking elsewhere for

sound sources. This keeps me interested in what I'm creating, while also pushing forward my sound and forcing me to try different things.

"Since I have a busy DJ schedule, I take long breaks from the studio and I think that keeps me from feeling uninspired or unenthusiastic. But sometimes I'll be sitting down wanting to get some new tracks done and it's just not working. When this happens, I switch off Logic and listen to music samples from films, or whatever other sources I can find, and keep building folders and folders of interesting sounds.

"In fact, I'm always doing this - while on tour or back at home - which means that when I do finally get back into the studio, I've got more than enough material to be getting on with."

Luke's music has been featured on a number of TV shows, including last year's *Gumball Rally* series, and on top of that he's also a highly sought-after remixer. When making music for other people, his approach to writing is much the same as when working on his own tracks - although he explains that with tight deadlines, it becomes critical not to get too hung up on minor details or on trying to force things to work. "The key is to know when something's

"I switch off Logic and listen to music samples from films or whatever sources I can find"

not working and swiftly move on. All great producers exercise decisiveness and can quickly judge whether something's working or not, and whether it's worth spending time on.

"Up-and-coming producers often say to me that they've spent hours and hours on certain parts of a track that generally people wouldn't care about or even take any notice of. I'm not sure whether this comes from lack of inspiration or just over-attention to detail, but I'd suggest that if you feel like you're not progressing, take a step back and listen to some other music.

"If you're making DnB, don't take a break and just listen to more DnB! Perhaps read about your favourite artists and who their inspirations were and then start listening to some of their tracks and then their inspirations and so on.

"People often comment on the 'non-standard' arrangements of my tunes, and this has definitely come from listening to other genres of music. It's definitely possible to follow a dance music template and still push the boundaries with atypical sounds and arrangements. Not every tune has to start with 48 bars of drums followed by 16 bars of breakdown, then build-up and drop!"



Utah Jazz takes inspiration from a wide range of musical genres and deliberately pushes himself out of his comfort zone

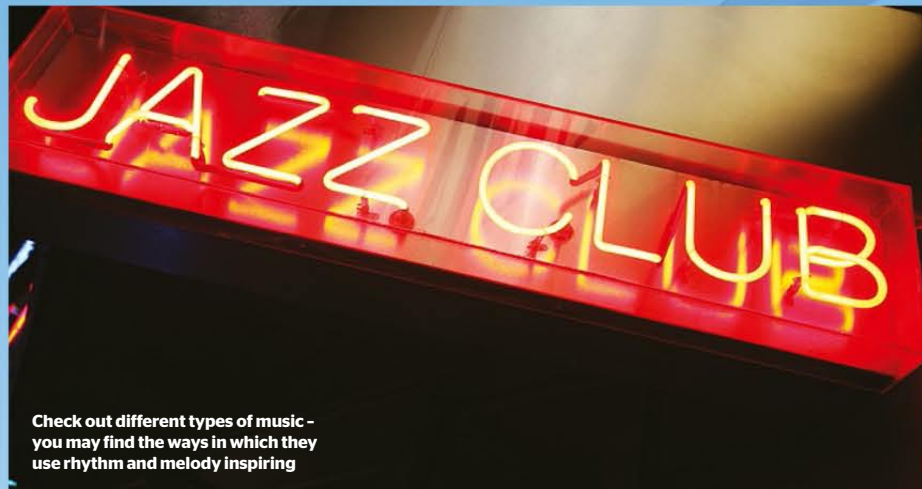
Inspiration bites – essential tips

EXPLORE DIFFERENT MUSICAL GENRES

Try exploring different musical genres. A great deal of successful music leaves its influences fairly obvious to hear, and there's nothing wrong with wanting to incorporate or recreate ideas from other artists in our scene. Many modern genres of dance music particularly are really collective efforts and rely on a free exchange of ideas and sounds. But on that note, a lack of inspiration can often stem from a need to change or broaden our listening habits. Legendary drum 'n' bass producer Photek once said in an interview that all you are as a producer is what you listen to outside of dance music. Many successful producers wind up rarely listening to much music from their chosen genres at all, instead seeing the time they spend exploring and discovering music from other movements and eras as being equally or even more important than the hours they clock up in the studio.

BE SPONTANEOUS

Sometimes all the conceptualising in the world just doesn't lead us anywhere interesting. For times like this, a spontaneous or random approach to composition can be extremely effective. Gary Cobain (of Future Sound of London and Amorphous Androgynous) mentioned in an early interview that one of his favourite methods when working with a synth was simply to scrawl the first thing that came to mind into his sequencer, and mess around with the notes and timings until he got it sounding about right. Although this may seem unmusical and an unlikely way to produce an instant hit, what we're actually doing by



Check out different types of music - you may find the ways in which they use rhythm and melody inspiring

working in this way is breaking up the normal thought process and making lots of tiny decisions on a much smaller scale. As such, it can often lead to interesting and unexpected results - which can inspire many later decisions.

BREAKING OUT OF 4/4

Try working with different time signatures. While dance music tends to be pretty locked to the 4/4 beat - partly so that DJs will be able to mix with, and therefore play, different tunes - there's actually a whole world of different time signatures out there that we could be writing in. Breaking out of 4/4 instantly offers us a wide new range of different ways to break up a rhythm, and therefore also to break up our melodies. For example, a 5/4 beat could be divided up into a three-beat phrase followed by a two-beat phrase, or four beats followed by one beat. A 7/4 beat could be divided up into 3, 2, 2. If you're not used to thinking in different time signatures, practice breaking them up in this way and counting, for example: 1-2-1-2-3 for a 5/4 beat. Even if your tunes are destined for the dancefloor,

learning to write in different time signatures can broaden the way that you think about rhythm and melody, and often help as an exercise to get us out of creative ruts.

Gary Cobain composes his tunes in an unusual way - simply jotting down the first notes that come into his head

TRY DIFFERENT DIVISIONS

Try dividing your tunes up into different bar groupings. While 4/4's a safe beat for the dancefloor, there's no reason why we should have to divide our tunes up in sets of four, eight or 16 bars all the time. Try writing a 4/4 bar of drums with a bassline, as usual, but instead of adding a two- or four-bar synth line, try writing one that spans three bars and then repeats. If done well, this shouldn't sound unusual, and by breaking out of the regularity of everything happening in multiples of four, you can create an interesting effect where the beginning and end of a musical line is less clearly defined. Aphex Twin's *Fingerbitch* is built on loops of five bars - with the feeling of four bars played in a row then an extra one added on - and this gives the feel of a track that's constantly leading into itself, rather than simply looping from start to end. It's up to you whether you use this method to divide your whole tune up - into blocks of three or five, say - or if you simply have one part that loops this number of bars, while the rest of the tune sticks to multiples of (perhaps) four.

ENJOY THE PROCESS

Stop focusing on the end product and learn to enjoy experimenting. Back in the early days of electronic music - before there were clearly defined genres, style guidelines and production protocols - almost every recorded work would have started life as a short experiment with sound. This attitude was prominent right from the early days of the synth up to the heyday of Detroit techno. Modern, computer-based music production setups offer so many possibilities that we're almost compelled to fall back on clichés and protocols just so that we have some manageable boundaries to work within. But every now and then, a bored music producer decides to try something a little different with his/her sequencer and inadvertently creates a whole new trend or genre. So don't feel that your studio time should always be about 'production'. That simple fact can be an inspiration in itself. **cm**



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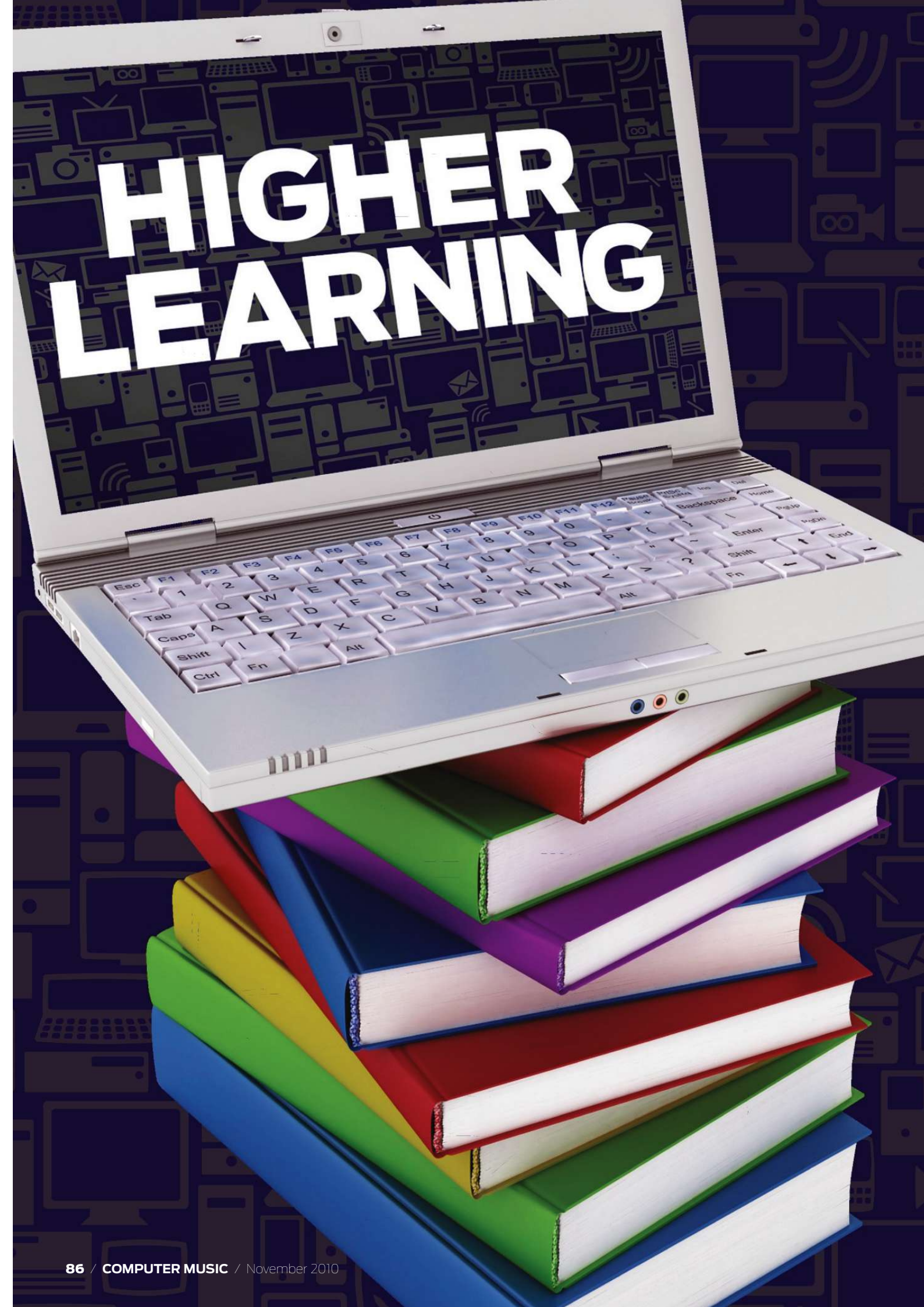
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HIGHER LEARNING



Learning music production online has never been easier, but with more and more courses appearing every month, where do you start? Here's our lowdown

> **The road to music production prowess is a long one, and it's filled with false horizons, dark forests that are easy to get lost in, and featureless plains where the immediate future seems bleak and unexciting.**

Here at **cm** we've long provided the budding producer with accurate and detailed information to make the road less wearing and flatten those particularly irritating obstacles - and you'll be glad to hear that we're not about to stop any time soon! Of course, the fact that you're reading this article means that you're well aware of this, so we won't bang on about it any longer. However, beyond your four-weekly fix of **cm**, there are other educational resources out there for those prepared to splash out a bit more than that regular six quid a month.

Over the last decade or so - and especially since it became possible to deliver videos over the internet at decent speeds - online courses have become a viable option for those interested in gaining a formal education in music production. These courses offer a much more accessible - though sometimes not much cheaper - route to a qualification or just expertise than attending a bricks-and-mortar school or college. And, of course, because we live in the age of 'in-the-box' solutions and plug-in instruments, all of the musical tools you need to 'attend' such a course are also available online.

"With online courses now catering for all subjects, levels, styles and software, there are a wealth of options"

So, if you fancy having a crack at an online course, read on - because chances are you're going to need to some help picking one!

Information overload

With online courses now catering for all subjects, levels, musical styles and software - at an almost granular level - there are a wealth of options available for the music production newbie. This can be confusing! The key to safely navigating this minefield of diversity and getting the most out of your learning is to be very clear about your ultimate goal, and to achieve that there are many things to consider.

The very first thing to understand is what exactly you want to learn. You might think you need to improve your mixing skills, when in

reality it could actually be your approach to arrangement that really needs working on. Or you may be right at the beginning of your musicianship, simply thinking, 'I want to learn production techniques'. This may sound perfectly reasonable to the novice, but production is a vast and varied topic, and some techniques will be far more immediately appropriate to your work than others.

This question isn't just applicable to the beginner, either: in many ways it's worse for the intermediate. No one wants to part with hundreds of their hard-earned pounds only to spend 12 tortuous weeks learning how to open their DAW or being told what a MIDI file is. Many courses for the beginner and expert abound, but gauging whether something is right for the 'in-betweeners' can be a tough call.

Fortunately, most courses worth their salt will give you a breakdown of the syllabus and explain in depth the topics covered. If the course you're thinking about doesn't do this, consider contacting the company directly and asking them to provide a breakdown for you. Some courses provide free sample lessons on their website, enabling you to get a feel for the course first-hand. Ultimately, an honest assessment of where you're starting from will reap the most profit when you come to make a decision.

Course compatibility

Once you know where you are and where you're going, the journey can begin. What to study isn't the only consideration, though: the course structure and provider are also important. Ranging from full-blown academic institutions to small and personal operations, each company provides a different take on learning. You must identify which type suits you best.

While teaching methods may vary, almost all of them will centre on learning through video tutorials. This approach provides direct visual

guidance and often lets you work at your own pace (most courses will let you complete the lessons at your leisure). The majority of courses will also expect you to complete course work or an ongoing project. Many courses offer more than these core components: other helpful benefits include a dedicated tutor, video feedback, group chats, sample packs and other useful resources.

One of the best things about learning online is that there really is something to suit all pockets, from free to thousands of pounds - so be prepared to pay for what you get. Before you pay up, though, make sure that the course really does provide value for money. It's your cash, so don't be afraid to ask questions before parting with it.

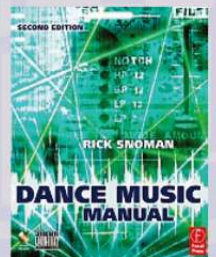
Back to the old school

Because you make music on a computer, we assume that you're not a ham-fisted Luddite. That said, some people still prefer well-thumbed tomes to moving pictures. If you want to learn at home but don't find video tutorials helpful, want to supplement your online course with some old-fashioned paper and ink, or just fancy a bit of reading material for the train, what are the best options?

Fortunately for the more technophobic producers out there, books have historically done quite well at helping people learn. Putting **cm** aside for one moment (we did promise that we wouldn't bang on!), here are some good titles to get you started on your quest.

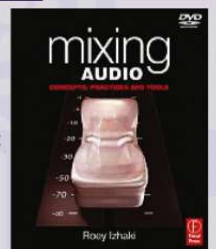
Dance Music Manual by Rick Snowman

This seminal text by recording engineer Rick Snowman covers pretty much every topic of music production that you could imagine, regardless of what DAW you use or whether you're running a hardware/software setup.



Mixing Audio by Roey Izhaki

Much more focused in its scope, thus affording it more detail on the topics it includes, *Mixing Audio* is successful at making explanations of this mysterious and ultimately subjective art engaging and informative at the same time. If you've ever spoken to a mixing enthusiast, you'll appreciate that this is no mean feat.



The Secrets of House Music Production by Marc Adamo/David Felton

Brought to you by the people behind Sample Magic samples, this book takes a more familiar walkthrough approach to an extensive list of essential skills, ranging from making your own drum hits through vocals to song structure. Despite its title, it contains a wealth of knowledge relevant to computer music production in a range of genres.



> higher learning

National Curriculum An overview of online courses in the UK

It's widely acknowledged that some people learn better in a group environment, while others prefer to study alone. Some might benefit from visual guidance; others excel in a more formal classroom approach. Whichever is your preferred method, there is a course for you out there. If Google searches have left you unsure of the merits of certain establishments, read on for our opinion of some of the course providers out there, and their approaches to teaching.



Sonic Academy

Belfast-based Sonic Academy offer a wealth of different online training courses, available individually or as a complete subscription package, at competitive prices (£30 per quarter). You can study specific musical styles such as minimal house and drum 'n' bass, or get stuck into universal techniques through the Tech Tips video tutorials. Sonic Academy also has a friendly online community for sharing tips and ideas, which is open to everybody, even if you don't subscribe. www.sonicacademy.com



Quantize Courses

Quantize teach students on a one-to-one basis with the emphasis firmly on content and quality. A preliminary chat with the tutor ensures that the course is tailored specifically to your requirements. All lessons are in HD and include detailed personal weekly feedback videos, one-to-one chats and unlimited email support. Competitively priced (from £160 to £270), their aim is to turn your ideas into releasable tracks. Quantize also publish free video tutorials online. www.quantizecourses.com



Berklee

The famous Boston-based College of Music also has an offshoot online. A solid range of high-level music production courses are on offer, as well as many more traditional music-based subjects. Berklee boast an active online community, dedicated tutors and personal feedback on your work. Of all the courses out there, Berklee most closely mimics the conventional school model. The courses aren't cheap, with prices usually over \$1000. Keep an eye out for their scholarship offers - you might be able to learn for free! www.berkleemusic.co.uk



SAE

SAE have been a leading force in creative and media education for some time. Their online learning courses are just as diverse as their traditional classroom range. The music and audio courses provide training in all of the major DAWs and also cover more traditional audio skills such as mixdown techniques and music theory. The short courses are packaged by skill level, enabling you to learn at a pace that suits your specific needs. Prices are fair at around £375 for each course. online.sae.edu



Producertech

Initially specialising in Ableton Live but with courses on Logic in the pipeline, Producertech offer a complete production course split into two levels - beginner and advanced. Each course can be bought separately for £149, or together at a discounted price of £225. The course comes as a set of high-quality videos that you can follow at your own pace. In addition to the videos, you're provided with comprehensive course notes, free samples and ongoing support via email or their forum.

www.producertech.com



Point Blank

After many years teaching music production in their successful London-based college, Point Blank have launched an online offering. The courses cover a comprehensive range of subjects, styles and software, and typically last between four and 12 weeks. As well as providing a dedicated tutor and personalised video feedback, Point Blank encourage student interaction via web chats and their online community. Impressively, their alumni include big names such as Leona Lewis and Tayo. Prices are fair, with a four-week course costing £325 and a 12-weeker weighing in at £645.

www.pointblankonline.net



Free online tutorials provide amply for those who are strapped for cash, or who've had it with formal learning!

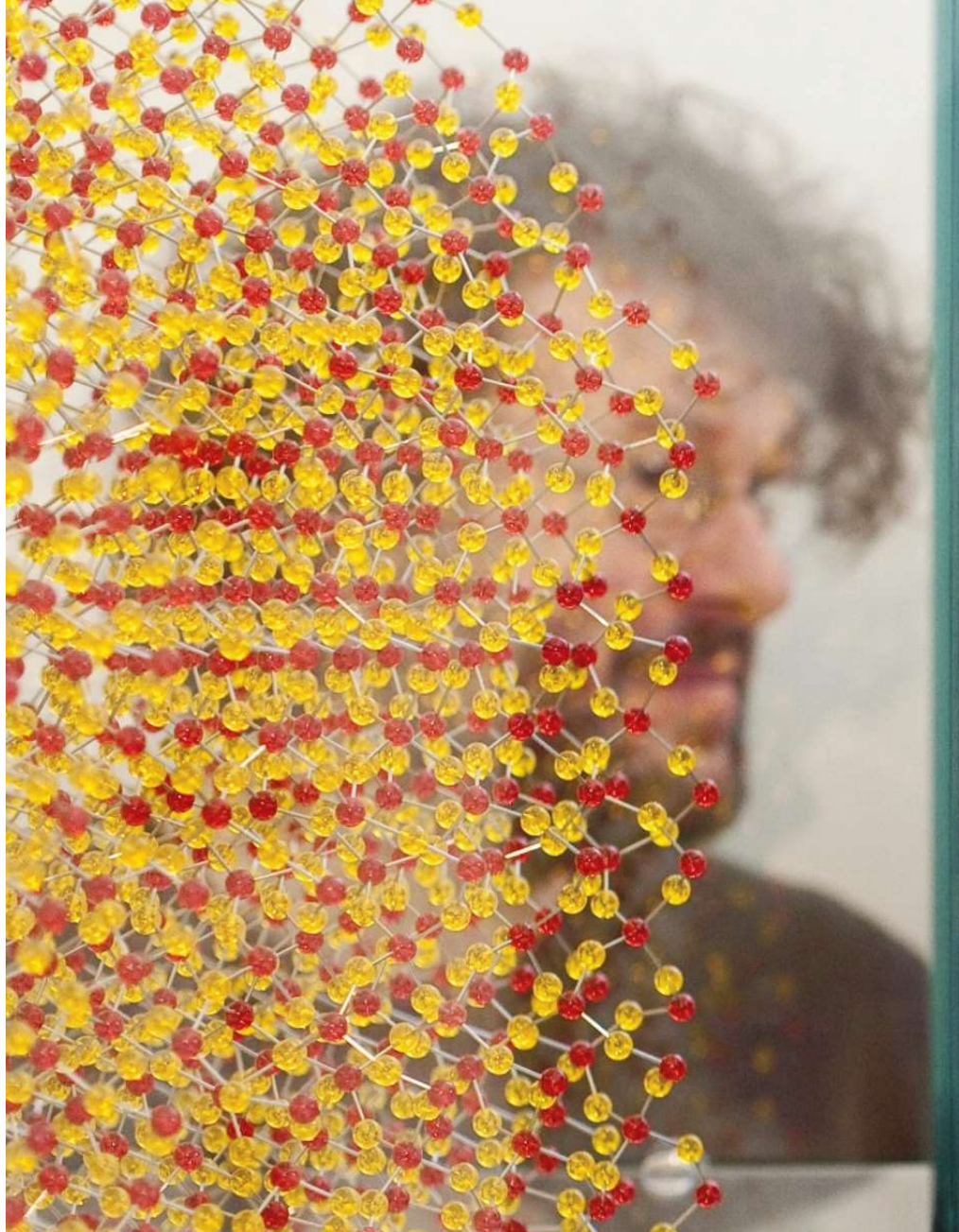
Student debt

If you aren't looking to enrol in a full-blown course, or you promised yourself you'd never be part of an academic institution again, there are still plenty of options. Many kind souls dedicate spades of their free time to creating tutorials and sharing techniques via mediums that don't cost a penny. If you know where to look, you can get your education for free - leaving more money for the student bar.

A good starting point is Tom Cosm's fantastic collection of videos at www.cosm.co.nz. A certified Ableton trainer, Tom has amassed a sizeable community of students and followers through his excellent tutorials. Naturally, they're all for the one DAW, but many of the principles he explains are universal, and Tom's laid back and imaginative style makes them a fun watch. Visit his website and you'll find a friendly forum as well as other resources - such as incomplete songs - to help you on your way to mixing mastery. While most of the videos are free, the complete archive can be bought for a small fee to help Tom fund their continued production.

Another shining star in the world of free tutorials is Dave from www.boyinaband.com. Using Reason, Dave tackles a broad set of musical styles through his 'seven-day song' format, where he makes - that's right - a song in seven days. Those who don't use Reason needn't avoid the site, as most of the techniques discussed aren't DAW-specific. Dave's unique discourse sets these videos apart.

The richest source of online tutorials has to be YouTube, however, and usually a simple search for your subject of choice will return a healthy number of responses. Over time you'll find the users that produce the best and most consistent resources for your needs. The social nature of video sharing sites means that often you can engage with other users directly and suggest topics for them to cover. Many of the paid courses looked at here also offer sections of their courses for free via YouTube, so some careful research can pay dividends when you're deciding whether or not to shell out. cm



LALI PUNA

> For well over a decade, Berlin-based record label Morr Music has kept the flag flying for electronic music and ethereal pop. You could argue that many acts on the label sparked the 'laptronica' revolution at the turn of the millennium. Artists weren't afraid to take their Macs out live, press play and stare at their shoes for a while. It was the acts from this scene - Styrofoam, Ulrich Schnauss, Herrmann & Kleine et al - that helped to sell tens of thousands of laptops as musicians across the globe realised that they could make all the music they wanted within those four sleek walls and then - what the heck - take it out on stage. Easy! For them, anyway...

For the audience, these shows weren't quite the spectacle that a new century in music making had promised to usher in. Watching a physics student seemingly write a dissertation on stage

- albeit while great music played in the background - wasn't exactly stimulating. To keep the crowds happy, laptops on stage were quickly bolstered by intricate light shows and (whisper) people playing real instruments.

One band that realised this from the off was Lali Puna. While inherently linked to that whole shoe-gazing scene, they wisely knew that playing live was the key to longevity, and so have always put on a show, despite their sound not always lending itself to obvious performances. A dozen years, 800 shows and four albums later, it's clear that they made the right choice. Not only has the musical landscape shifted so dramatically that playing live is arguably the only way to link with your fan base (and make money), Lali Puna's wispy acoustic synth pop is also back in vogue.

Lali Puna was formed when lead singer Valerie Trebeljahr left her old band, LB Page, in 1998.

She replaced them with a four-track but soon came to the conclusion that a human element would be nice - so Markus Acher, drummer Christoph Brandner and keyboard player Florian Zimmer soon joined. Their debut album *Tricoder* was a success, but it was the follow up - 2001's *Scary World Theory* - that led to more commercial rewards, including a European and an American tour. This period was a transitional one for the band, with Christian Heiss joining in place of Florian.

In 2003 Lali Puna hit the big time again with *Faking The Books* and once more took the show on the road around the world - but after the curtains closed on the tour, little was heard from them for seven years. 2010 sees them return with album *Our Intentions* and single *That Day*, showcasing just how upbeat, fey electropop should be done. The band have been writing this

For 12 years now, Lali Puna's strategy of blending style and technology seems to have paid off. *Computer Music* unearths the perfect mix of high and low tech, and learns how to not look like you're answering emails while performing on stage...

style of music for more than a decade, reflecting the output of Morr Music, who have steadfastly refused to compromise on their sound and lasted longer than many because of it.

It started with punk... kinda

Christian Heiss is responsible for much of the Lali Puna sound, and he's also the man tasked with transferring the bulk of it to the live arena. That can present all sorts of problems - but today's technology has the answers, and he's well versed in it through years of experience.

"I guess some people are just thrown into music," he says. "I started making punk music at around 12 or 13 when I swapped the piano for a guitar and amp and started writing songs with three chords! Then I discovered that computers had a lot of potential. There was Cubase - I think version 2.2 - on the Atari, and MIDI was the big

thing, with maybe just two audio tracks. It really was the start of a lot of different possibilities."

Christian threw himself into technology, and that decision would hold him in good stead. The opportunity to join a successful band soon came his way, and it was his technological skills that were the reason for his invite.

"I joined Lali Puna in 2001 when Florian left," he recalls. "He was doing the electronics and they asked me if I could do the job. So we rehearsed for the first US tour. First of all I joined to help bring their sound out live, and then, in 2003, we recorded *Faking The Books*. My job was to bring in the material that sounded electronic - the synth stuff or sequenced or sampled sounds, things like that. When we finished that record it was clear that we would stay together - so then I had the job of bringing the sound of that recording to the stage as well."

Christian has now been with the band through the writing and recording of three albums and subsequent worldwide tours. His role within Lali Puna is fairly fluid - as are those of all the band's members - although his own setup is fairly distinct and streamlined.

"My main setup is a MacBook Pro with Ableton Live on it," he says. "Software-wise, Ableton Live changed everything for me. It was the first time you had an opportunity to jam with people and have live control over your sequenced stuff. Everyone has tried it, but Ableton did it and made it work on stage, and made it safe on stage. They really did it!

"Within that I have sampler instruments and MIDI and audio tracks, which I shape externally with a Mackie 1404 analogue desk, with several outboard delays and bit crusher effects. Plus I have a big MIDI controller to access Ableton."

Lali Puna: Christoph Brandner (left), Valerie Trebeljahr (centre) and Christian Heiss (right). Fourth member Markus Acher is not pictured

"We want to play around with a song and edit it later, not throw MIDI dots around a screen"

Measuring success

After 12 years and so much touring, Lali Puna can certainly hold their heads up high when measuring their success next to their early peers. They have seen the industry change dramatically: making music today isn't anywhere near as much about making money as it once was...

"Don't expect to make a lot of money [as a musician]," says Christian. "Do your thing - perform live, as it's the only way you can reach people. Watch other people play, decide what you think is good and take things from other people's performances, because you have to perform with a computer, but, overall, don't expect anything! Do it because you want to, and don't overdo it!"

You can make money in other ways besides selling records and performing, though. "We had some tracks cleared for use on an Italian movie and an Austrian film. They asked us to do the music. We'd never done anything like that before and would love to do more. It certainly helped us sell tickets in Italy as well!"

This is our first introduction to Lali Puna's marriage of digital music making with the outside world - a combination of more traditional studio technology with state-of-the-art recording techniques that has kept them ahead both in the studio and on stage. In this case, Live triggers not only its internal effects but also an unusual range of external effects via the Mackie: "We add guitar pedals like the Electro-Harmonix Micro Synth and the Ibanez Tonelok DE7 delay pedal. I use this setup a lot when we're playing live."

No rules in the studio?

This combination of Ableton Live control and hardware pedals is unusual, but it clearly offers Lali Puna some great options for performance on stage. With their live setup disregarding the rules, would you expect anything different from their song writing process?

"[A track] may come from one person's idea, or from all of us - it varies a lot," Christian reveals. "It may come from Markus or Valerie or me or Christoph in the beginning - it doesn't matter. So we might have four tracks of rough drum loops and a melody, or just harmonics or whatever. And then everyone goes home with these four tracks or ideas and tries to add new material like chord changes or maybe some samples just to make it interesting. After that, we meet again in the studio, compare ideas and make the track."

Christian makes all this sound very simple - but with four band members working on the same idea simultaneously, don't they end up with four very different results?

"Well, yes, often we do - but then I guess that is the point," he says. "Markus, for example, might find ideas and samples from old records, while I usually do the beat programming and maybe change chords or whatever."

But doesn't that present the band with the considerable problem of gelling four very different ideas together in one track?

"No," he explains. "The ideas are never that different, as we all know what we want from Lali Puna. Even if there is not a strong concept for a

track, there is a strong idea for the band. So there may be ideas that come along that not everyone likes, but that is very, very rare. It's hardly ever that we say, 'There's no place for that!'"

The band use Logic Pro to record their ideas, and they have a wealth of plug-ins and real instruments that they jam with. "It's this working process that makes us different from other bands or projects," Christian notes. "Valerie has a very strong idea for melodies, and we try to make them complex but also include pop ideas. We also try to mix digital with analogue: we use a lot of analogue synths like the Korg MS20, the ARP Axse and Moog Prodigy, and we'll mix the plug-ins with the real hardware as well as real instruments like vibes or lute or whatever."

So the synths that Lali Puna use are real rather than plug-ins. But as Logic users, they will have surely been tempted by the many great software equivalents, right?

"Well, the plug-ins sound different - not as dirty," says Christian. "Plus you also get mistakes from the analogue synths - stuff that they're not supposed to do, which we really like. We want to play along with a song and edit it later, not throw MIDI dots around a screen."

Falling into place

It all sounds a little random at this point. We have Christian contributing beats from Ableton Live, Valerie singing and writing melodies, and Christoph and Markus adding more electronics and beats into the mix. But this is where Lali Puna's compositional process starts getting even more creative! Logic's plug-ins enter the fray to help gel everything together.

"We use Logic like a recorder, really, and we use it with all the Waves plug-ins plus the Audio Damage suite," Christian says. "I love the AD plugs because they are so strange. You do something and you don't know what exactly you've done, but it sounds great! We don't use many plug-in synths, but I really like the G-Force M-Tron - it sounds dirty, even though it's a plug-in. Other than that, we use the EXS24 sampler in Logic a lot to load all of our own sounds in."

Mixed-up beats

Christian might use Ableton Live as his main source of beats, but he goes to great lengths to make sure the results are unusual, to say the least. His drum tracks are among the most diverse pick 'n' mix collections of beats, loops and samples imaginable...

"I use the Korg Electribe as a step sequencer, often with the Vermona drum machine," he says. "I then record that and edit it in Ableton Live or in my DAW to make it interesting. After that, I'll maybe mix it up with real drums, like an analogue snare or ride cymbal, or perhaps I'll take a mono recording or a loop chopped to pieces and put that underneath the electronic Vermona loop."

And so we get around to the more interesting aspects of using computers live and how Lali Puna have really stayed the course. Nowadays there are a wealth of options to liven things up when using laptops on stage.

"I still use my MacBook live," says Christian, "and I have never had a crash in more than 800 shows, so there is no need to change my system at all. But there are some things I don't like about Apple, and one is the control. The user interface on the computer is the most interesting thing, but that is also the biggest problem. You have a keyboard, a mouse or a trackpad, but the best thing would be for a user to really be able to play with a MacBook and how you interact with it."

So Christian has explored all sorts of options. "I've had a chance to use the Jazzmutant Lemur, but you need a lot of time to get into the Live controller side. So now I'm looking at the iPhone and iPad apps for Live, which seem to do most of the things I want really cheaply and very easily. I've also done a lot with the Wii controller, which makes it easy to do things like moving the filter by tilting the control down. Martin [Gretschmann from the band Console] is a pioneer in that area and has done lots of stuff with the Wii control, and he really does it great. He did it before me, though, so that's why I don't do it!"

"You need something like that to make it a performance with a laptop on stage, otherwise what's the point?" he continues. "I couldn't tell you if [such performers] are checking their emails or playing music! It is boring to watch and there is no reason to go to a 'live' performance these days and just stare at an Apple logo on stage."

Lali Puna are working on an EP plus a full album for next year. "We have always had a lot of time between albums," says Christian of the band's future plans, "like six years between the last two. Everyone has other projects - Christoph is playing with Console and I run a studio - so everyone needs to do other stuff to make Lali Puna work. But we're working on music and also touring around Europe and the UK now." For more details and tour dates, check the website: www.lalipuna.de/tour.cm

Selected Kit List

Apple MacBook Pro
Apple Mac Pro
Apple Logic Pro
Ableton Live
API 7600 channel strips
ARP Axxe synth
Audio Damage plug-in suite
Electro-Harmonix Micro Synth
Korg Electribe
Ibanez DE7 delay
Neumann 184
Steinberg Cubase ("Occasionally, as it does some things Logic doesn't!")
Vermona DRM1 drum machine
Waves plug-in suite
Westlake BBSM10 monitors



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COMPUTER music

> competition

Slate Digital are relative newcomers to the plug-in game, but they've immediately established themselves as one of its premier players. In conjunction with UK distributors Sub6, we're offering three killer prize packs, each containing Steven Slate Drums and your choice of one Slate Digital plug-in: Trigger, FG-X or VCC.

The Trigger Platinum (£149) drum replacer received a 10/10 score in **cm153**, where we ordained it "the new gold standard" in triggering.

FG-X (£149) is a mastering tool with a smooth compressor and a loudness maximiser that delivers volume without sacrificing clarity or punch. It landed a massive 10/10 in **cm156**.

VCC (£149) - that's Virtual Console Collection - consists of channel and bus plug-ins that model six classic analogue consoles. It's not out at the time of writing, but if you'd like it as your prize, you can have it when it is.

Lastly, Steven Slate Drums (£149), is a renowned set of drum samples.

HOW TO ENTER

To enter, send a text to **87474** containing: the keyword **SLATE**, followed by a space, then **A**, **B** or **C**, then another space, then **your email address**. Alternatively, you can go online and use the form at www.futurecompetitions.com/cm158 to enter the competition. Entries must be received between **October 20 2010** and **November 16 2010**, and only UK residents aged 18+ may enter.

The question

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cm/reviews

The latest computer music gear tested and rated!

98 _ URS CLASSIC CONSOLE STRIP PRO 2

Ace multi-emulation plug-in CCS gets some tasty new features



102 _ PSP AUDIOWARE PSP 85

Updated delay plug-in with a superb sound and impressive feature-set

105 _ NOVATION DICER

This colourful controller for Serato Scratch Live brings well thought-out functionality at a great price



This month

- 98 _ URS Classic Console Strip Pro 2
- 100 _ Waves CLA Artist Signature Collection
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Our promise

We bring you honest, unbiased appraisals of the latest computer music products. Our experts apply the same stringent testing methods to all gear, no matter how much hype or expectation surrounds it.

What the ratings mean

- 1-4 _ A seriously flawed product that should be avoided
- 5 _ This product's problems outweigh its merits
- 6 _ A decent product that's only held back by a few flaws
- 7 _ Solid. Well worth considering
- 8 _ Very good. A well-conceived and executed product.
- 9 _ Excellent. First-rate and among the best you can buy
- 10 _ Exceptional. It just doesn't get any better than this!



Awarded to products that challenge existing ideas and do something entirely new



A product has to really impress us with its functionality and features to win this one



If the product exceeds expectations for its price, it will receive this gong



In the opinion of our editor, the best product reviewed in the magazine this month

METERS

The VU meters show compressor gain reduction

INPUT STAGE

The knob allows for input drive, while the horizontal slider sets the 'intensity'

SIGNAL FLOW

These bypass buttons change order to reflect the signal path

FILTER SECTION

Shape the audible signal or the compressor's sidechain feed



EQ

Four bands of parametric EQ with shelving options on the top and bottom ones

COMPRESSOR

Note the new Wet/Dry fader and Fast Attack switch

EQ STYLE

For each band, choose a different EQ model - here we've gone for '1980' (SSL) across the board

URS Classic Console Strip Pro 2 \$480

PC MAC

System requirements

PC Windows XP, VST host

Mac Intel/PPC CPU, OS X 10.3.9, AU/VST

> The first URS EQ plug-ins quickly acquired a fanatical following and much praise for their sound. Like some Waves and UAD plugs, the URS EQs were surprisingly close to the analogue gear on which they were modelled, proving a viable 'stepping stone' for producers yet to make the transition to working fully in the box.

Given the studio and R&D experiences of developer Bobby Nathan (he and wife Joanne ran the legendary Unique Recording Studios in New York), it really was only a matter of time until he made the conceptual leap that led to the Classic Console Strip 1. Some virtual channel strips (notably Metric Halo's) had already established themselves. What marked out the URS version as something even better was the obsessive modelling of each stage of the strip, and its dedicated input stage, which - in Bobby's own words - "sets the mood of the compressor". CCSP2 offers even more. If you've never used

CCS before, let's first run through what you've been missing out on.

Console yourself

There are many hardware devices prized for the sonic enhancement they provide. For instance, Neve, SSL and API consoles imbue a distinctive tonality, as do tape machines, whether they be 1/2" mastering machines or 2" multitrackers. CCSP2's input stage offers a stack of choices emulating the likes of these classics, and some offer combinations - ie, the sound of transformers *and* tape. So if you want your drum overheads to sound like they're coming back from a 1/2" tape machine running at 30ips through a Neve 1073 transformer input, you can have it.

Importantly, if you've never used any of this archaic equipment or don't care for the slight nerdiness it encourages, you can still flick through the settings until you hit upon something

“Don’t be put off by CCS’s apparent complexity – just tweaking the defaults yields great results”

that works for you. Apart from the input level control, the character of the input stage can be adjusted with the horizontal slider. This module of CCS alone would be a fantastic thing to use on every channel, but there’s so much more to it.

You can also choose your compressor: SSL, Fairchild, Distressor, LA2A, tape compression and more. They’re all here, disguised under different names due to the usual legal/licensing issues. Select a compressor and the controls move to suitable ‘starting point’ positions. The most appropriate input stage model is automatically selected by default, though this can be disabled.

By now, you may be thinking that you’ve been out-gear, and that you’d rather have a simple two-knob compressor and be done with it. But don’t be put off by CCS’s apparent complexity – just calling up the presets and tweaking the defaults will immediately yield great results.

Join the band

Get ready for the nerdiness to ramp up even more. You can choose between several models of EQ, and while the original gear modelled isn’t named, some of our educated guesses are Pultec (1951), API (1967), Neve 1073 (1970), Neve 1081 (1972) and SSL 4000E (1980). Each model has a definite character and you’ll quickly come to know which you need. But here’s the clincher: for each of the four bands of EQ, you can choose a different model. So you can use a 1951 Pultec-style band to add some smooth air up top while clinically zoning in on a problematic frequency in your lower mids with the SSL. There’s also a section offering high- and low-pass filters, which can be placed before or after the compressor or used for the internal sidechain. The compressor can be placed pre- or post-EQ, and a signal flow diagram offers an overview of the current routing.

This plug-in is a simple yet very powerful way of introducing warmth and character to your mixes. Running through the compressor presets alone offers real sonic alteration before you even touch the EQ. If it had a gate, you really could get by with this as your only EQ and dynamics machine. How about it, URS?

The CCS Pro comes bundled with a DSP-efficient cut-down version, the Strip, and given

that the Pro version isn’t greedy in this respect, you could have Pros on all your key tracks and master busses and Strips on everything else without maxing out your system. Both plug-ins work at up to 192kHz and there’s also an external sidechain option for CCS Pro.

If you’re a V1 owner, it’s a free upgrade, and if you’re not, then we highly recommend the CCS Pro 2 for adding top quality analogue warmth and character to your mixes. **cm**

Web www.ursplugins.com
Contact sales@ursplugins.com
Info TDM version, \$960



Bundled with the CCS Pro comes the Strip, a more CPU-efficient, less modular strip that maps nicely to popular hardware controllers



Snaazzy new compressor parameters make Classic Console Strip Pro 2 even easier to work with

New for v2

So what’s changed since v1 of CCS Pro? There’s now an Input Stage Bypass button in the Signal Flow section, making it easier to A/B the subtleties of the flavours. The input stages have also been updated, with their characteristics now more obvious and distinctive. The new Input Stage Modelling Lock/Unlock button enables you to use different input stages with different compressor styles, whereas in v1 the two were intrinsically linked.

The compressor has two very welcome additions. The Fast Attack switch changes the attack time range from 0.1-250ms to a fast 10µs-25ms, allowing Fairchild-like super-quick attacks. These are great for brickwall mastering settings, where you want transients eradicated completely, and also good in moderation for more transparent general mastering compression.

Second, the new Wet/Dry fader lets you parallel compress within the plug-in, so you could mix your super-compressed drum sound with a little of the natural sound to restore some of its transient character, while upping the level of the general kit sound and ambience. This single fader saves you the hassle of creating a pair of parallel auxiliaries (ie, one clean and one compressed) and having to worry about phase or latency-compensation issues.

Alternatively

iZotope Alloy
cm146 >> 8/10 >> \$249
Super-flexible channel strip capable of an enormous range of sounds

Wave Arts TrackPlug 5
N/A >> N/A >> \$150
Great value strip with gate, dual compressors and 10-band EQ

Verdict

For Simple to use
Sounds excellent
Huge range of emulations
Blendable compressor mix
Super-fast attack option

Against No gate
LMF band could extend below 200Hz

URS’s flagship processor hangs on to its ‘classic’ status with this solid update

9/10

SND LONG DLY
Short for 'send long delay',
hit this to apply a momentary
long delay to a word/phrase

MORPH
Determines how the
four Sources' audio
output is mixed

EQ
Has three
settings: Top,
Filter and
Telephone. Turn
the fader up
for 'more'

RE-AMPLIFY
Engage the built-in
amp simulator and
select the amp type

INPUT SENS.
The small LED
changes colour to
aid you in setting
the optimal
input level

REVERB
The two reverbs
each have
adjustable predelay
and both can be
active at once

REVERB FLAVOUR
Offers three different reverb
styles: Arena, Hall and Club

DIRECT
If you want to hear the dry
signal too, enable this. Turn it
off for auxiliary use

BALANCE
Adjust the stereo balance
of the incoming signal

Waves PC MAC The CLA Artist Signature Collection £646



System requirements

PC P4/Athlon 2.8GHz, 1GB RAM
(XP)/2GB RAM (Vista/7), Windows
XP/Vista/7, VST/RTAS host

Mac G5 Dual 2GHz/Core Duo 1.83GHz,
1GB RAM, OS X 10.4.11, AU/VST/RTAS host

> The Artist Signature Collection series of plug-in bundles brings you easy-to-use, application-specific effects characterising the favoured sounds of certain mix engineers. Chris Lord-Alge (aka CLA) is famous for his classic American rock sound, and this range of effects broadly covers his trademark tones for rock instruments. It includes six plug-ins: Drums, Bass, Guitars, Vocals, Unplugged and Effects.

Fader way

Each of the plug-ins consists of five or six controller faders sandwiched between input and output level faders. Each controller is assigned a specific sonic attribute, so in the case of the Drums plug-in, you get Bass, Treble, Compress, Reverb, Gate, and the faders simply dial in 'more' or 'less' of that effect. It's not always clear what's going on under the hood and you don't get precise control. The idea is

that you don't need to worry about that - just dial in what you want to hear.

Buttons above each fader toggle through effect variations, and clicking the chosen colour bypasses that effect. For example, on the Drums plug-in, the variations for the Bass fader are Sub, Lower and Higher. Some of the plug-ins feature extra controls in the top-left corner. Sticking with Drums, you can switch between fundamental drum types: kick, snare, toms, room, overheads and cowbell. These give you CLA's classic effects approaches for the different drums.

There are all sorts of limitations with this style of plug-in, but that's kind of the point. The idea is to get immediate results without faffing around with various plug-ins chained together. It's an instant time-saving fix, and in the case of the Drums, it really does work well. You can get powerful, punchy, weighty kicks and cracking snare sounds in no time at all. And if you want to

“The idea is to get immediate results without faffing around with various plug-ins chained together”

refine it with, say, additional EQ, you can always add one in later. We'd like the plug-ins to be modular, so that it would be possible to drag the faders into a different order. Anyway, we've talked plenty about the Drums plug-in so far. Our verdict? Big tick.

Rip-roaring bass

Getting a good bass sound is always hard: the weight, the cut and the drive all have to be just right. The CLA Bass plug-in provides a range of immediate setups for a powerful rock bass that would translate effectively into other genres, especially hip-hop and electronic styles. The three distortion settings are great: Growl, Roar and Rip speak for themselves! The Sub settings and three low-frequency curves put the areas you want to tweak right at your fingertips, and the brick wall limiting keeps the sound rock solid. Bass verdict: Even bigger tick.

On to the Guitars plug-in. You can select between Clean, Crunch and Heavy amp styles. If your guitars are DI'd, you can flip the Re-Amplify switch to apply a built-in amp sim, otherwise the processing is tailored for an amped signal in the chosen style. There are also compression and EQ settings, and some stereo effects. The size and crunch of the thing is impressive and the delays are synchronised to the host tempo. Again, the instant gratification is a knockout, though you will need further plug-ins to refine your sound. Guitars verdict: Tick.

The vocal is the focal point for most listeners, so the 'instant fix' of the Vocals plug-in is only really appropriate when you're in a hurry to get a monitor mix together. Even so, the quality of results is surprising considering the limitations. The choice of compression curves and the top-end EQ are both good. A 'body' or mid control might have been a worthwhile addition but then CLA isn't known for his forward mid-range! Vocals verdict: Small tick.

The Unplugged plug-in offers a range of EQ, compression, reverb and delays designed specifically for acoustic instruments, but also useful for roughing up clean DI signals. It has two different reverbs, each with pre-delay, so



The Vocals plug-in delivers nice results, but we wouldn't recommend using it for a finished track



The Drums plug-in will give you CLA's favourite sounds - mix quickly so you don't get a headache!

Lord of the mix

Whether or not you like the American rock sound of Chris Lord-Alge, you can't deny his domination in that field of music. He's been at the forefront of rock mixing for around a quarter of a century. His sound is characterised as full-on yet light on mid-range tones. The masses love it and it undeniably comes across well on the radio, sounding 'loud and punchy' when heard alongside other mixes.

Such all-out sonics can become tiring on the ears, however - the Lord alone knows how he manages to stick with it for a whole day's mixing! Chris will tell you that part of his secret is listening at low levels on simple

reference systems such as his Sony boombox. He'll also tell you that he finishes a mix in one to five hours. That's quick! To work on that sort of timescale, you have to know exactly how you want the mix to sound before you start and be instantly decisive throughout your mixing session - there's no time to 'um and ah' about whether you like the hi-hat sound.

Whatever you think of CLA's mix aesthetic, you can't deny the calibre of his CV, with artists like U2, Avril Lavigne, My Chemical Romance, Nickelback, Green Day, Paramore, Rod Stewart and Celine Dion being just a few of his clients over the years.

you can get a good range of spaces for your mix. Unplugged verdict: Tick.

Effects is a general-purpose multieffects module with some distortions and stereo modulations along with EQ, delays and reverbs. One useful feature is the Throw button, which is for dubbing momentary long delays on specific words or phrases using the host's automation system. It's a big time-saver, being simpler to set up than the normal send automation process. So, the Effects verdict: Big tick.

What's your flavour?

It's clear that a lot of thought and research has gone into this bundle. It could easily have gone very wrong because of the inherent design limitations, but each of the plug-ins effectively encapsulates Chris Lord-Alge's sound within a specific window. All you have to do is pick the 'flavours' you want and give yourself 'more' or 'less' of each. The plug-ins have uses outside rock too: a synth part could easily benefit from Guitars and electronic drums should sound less tame when driven through Drums. Overall, this is a simple but very effective collection. **cm**

Web www.waves.com
Contact Sonic Distribution, 0845 500 2 500

Alternatively

Toontrack EZmix
cm153 >> 7/10 >> £45
Stripped-down auto-mixing plug-in

Waves JJP Artist Signature Collection
cm157 >> 8/10 >> £646

If you'd prefer the sound of Jack Joseph Puig, try this bundle

Verdict

For Instant gratification
Excellent combination of effects
Good instant EQ and dynamics settings
Simplicity is refreshing

Against Inherently limited
No option to rearrange the effects chain
Vocals plug-in is too basic for most uses

For instant CLA on tap, these plug-ins deliver. Good job, Waves!

8/10



PSP Audioware

PSP 85 \$149

PC MAC



After seven years of itch, PSP have finally scratched off the '4' in PSP 84 and replaced it with a '5'. Cue 'long delay' jokes...

System requirements

PC Windows XP SP2/Vista/7,
VST/RTAS host

Mac Intel/PowerPC CPU, OS X 10.5,
AU/VST/RTAS host

> If there's one effects processor that we never get tired of tinkering with, it's the delay processor. Whether we use it to add a dash of chorus-like character, create an unexpected musical riff, fill out some space in a mix as an alternative to reverb or simply make things sound utterly bonkers, a good delay unit is your trusted production partner.

Seven long years have passed since we first tried PSP 84. Too often dismissed as simply a dual-channel version of the PSP 42 (which is based on the classic Lexicon PCM42 delay unit), PSP 84 was actually a far more powerful beast, with a plethora of additional features. Highlights included the vastly enhanced filter section, which offered a powerful filter (band-, high- or low-pass) that could operate on either the input, the feedback section or just the delay effect section. The resonance could be cranked up to self-oscillation, and five different types of tempo-syncable LFO waveform were on hand to be added to the already pretty crazy proceedings. The ability to switch the filter to process the input, feedback or overall signal was always worth trying too.

Bolted onto this was a reverb section, offering plate and spring modes, which could be placed on either the entire signal path or just the effect signal. This was closely followed by some saturation features to offer a warm-to-squashed effect. Oh, and one of PSP 84's best features was its ability to adjust and modulate the 'speed' of the delay line, just like a tape delay - enabling the production of everything from subtle wowing to crazy pitchbending effects.

New for 2010

All of these features are present in PSP 85, and they still all sound pretty amazing, are in no way obsolete and should constitute part of PSP 85's appeal to new users.

Of the new features, one of the most interesting is sidechain ducking. PSP 85 can use either an external source (host permitting, which most do these days) or the input signal as a key to attenuate the effect signal. Thus, the echoes will become quieter whenever there is input, but will rise in volume to 'fill the gaps'. In theory, you could achieve this in other ways, but having it built right in is a great convenience.

"PSP 85 feels and sounds like a robust, old-school bit of kit – but one with futuristic innards"

Another neat new feature is the delay line panning, which is independent for each channel, as is the delay gate, which mutes the delay when it drops below a certain level. The latter is great for taming runaway delays, or simply making them punchier and more obviously rhythmic. And the pre-delay at the delay input stage offers yet further sonic control.

Again, these features are all things that can be achieved (after a fashion) without these controls, but the convenience makes them an excellent addition.

Some of the new features can't be achieved by other means, though, such as the filter resonance modulation and the track-position LFO synchronisation. The latter function means that with some of the crazier evolving effects, you can be sure that things will always sound the same upon each playback. This is most welcome, as some plug-ins have reduced us to tears when the best effect sequence we'd ever heard suddenly popped out of the LFO-driven chaos, never to be repeated.

As you'll have gathered, PSP 85 isn't your average delay, and to really get a grip on what's going on under the hood, we recommend taking a look at the manual (included on the **cm** DVD), which includes a block diagram of the signal path.

Only skin-deep

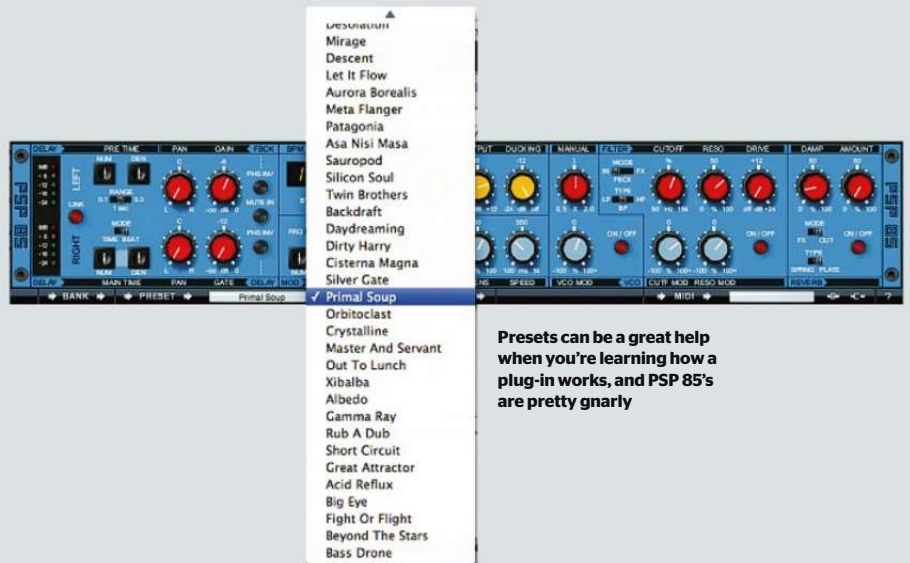
Some of our favourite enhancements are very much on the surface. Each section of the GUI is divided up and labelled, with its own On/Off switch. We highly recommend disengaging each section in turn when working through the presets as it can really transform them (and some presets are a little heavier on the reverb than we'd like).

While the slightly cluttered and confusing interface remains as busy as PSP84's (even busier, in fact), the new Help section (marked by a question mark) enables you to hover over a section for a complete list of all the parameters and a brief description of their function.

PSP 84's success was down to the clever interaction of its individual sections. It was described by many at the time as being more than the sum of its parts, and this new version really picks up where the last one left off. There's nothing radically new here – just lots of great refinements. Anybody who's got the previous version should at least try the demo of PSP 85 – we suspect that you will quickly see the value in upgrading.



The Help section offers easy-to-access explanations for all the main controls and an overview of the different sections



Presets can be a great help when you're learning how a plug-in works, and PSP 85's are pretty gnarly

Preset destiny

With a plug-in that's home to as many interactive parameters as there are on PSP 85, getting the exact results you're after can often be a bit hit and miss. So much so, in fact, that even experienced engineers can sometimes need to take a step back and partake in a thoughtful head scratch as they try to get the most out of a good complex delay unit.

This is where the presets come in. PSP have done a really great job of offering a hugely broad selection, with patches suitable for mangling a drum loop, phatening a synth riff, creating crazy breakdown effects from the sound of one hand clapping and loads more besides.

Whatever your musical bag happens to be, we'd recommend trying out PSP 85 on some random elements using random presets, just to see what it can do. Pretty soon you'll get a sense for what they're all for and thus be able to make some informed decisions about which presets to turn to in the heat of the moment.

We won't lie to you: it can take a while to get a good grip on PSP 85. But our golden tip is to try it out on each track of the next project you make, and try five to ten presets each time. Just taken from this standpoint, we were amazed by how much we ended up using it on our tracks.

PSP 85 feels and sounds like a robust, old-school bit of kit – but one with futuristic innards. It's capable of some astounding next-gen results, but there is a solidness to the sound that feels substantial and vintage. It can produce flanging effects, phasing effects, delay effects, swirling/squeaking effects and everything in between or on either side. It can be a creative tool, an inspirational tool or just a workhorse. Most importantly, it doesn't sound like just another delay. Even if you have ten other delays fighting each other for space in your plug-ins folder, we guarantee that you'll get something fresh out of PSP85 – and that alone makes it well worth the asking price. **cm**

Web www.pspaudioware.com
Contact contact@pspaudioare.com
Info Crossgrade from PSP 84, \$59

Alternatively

FabFilter Timeless 2
cm142 >> 10/10 >> £84

This super-flexible delay features a mind-blowing modulation section

Audio Damage Ricochet
cm125 >> 10/10 >> \$49

Stellar results on a budget. It can't match PSP 85's power, though

Verdict

For Great presets and fantastic sound
Sidechain ducking
Help function
LFO track position synchronisation
Great filter section
Highly flexible

Against Slightly cramped interface
Hard-to-read legending

If there was space left on the GUI, we'd slap the following on this super-powerful effect: "Warning: Serious delays ahead!"

9/10

ArtsAcoustic BigRock €79

PC MAC

A classic phaser pedal is brought into the 21st century with this swish emulation

> The Electro-Harmonix Small Stone has a sound so desirable that hardware-happy engineers use this humble pedal effect at the mix stage in preference to fancier rack-based processors. German software developers ArtsAcoustic decided to develop their own plug-in emulation of this classic, dubbing it BigRock. It goes beyond the original design by adding plenty of extras, turning it into a kind of big brother – hence the crafty name.

The original design's continuously adjustable LFO rate and two 'colour' (resonance) options remain, and when you load up the plug-in, these are the only controls you'll see, besides the bypass switch. In this form it operates as a mono effect, and aside from the LFO's red LED and footswitch LED, this is how the original MkII pedal looks.

Select the Advanced tab and a bunch of extra features are revealed. Importantly, the plug-in now operates in stereo. The colour option becomes a continuous control (0-100%) and this control extends beyond the original high resonance setting (which you'll find at 88.5%). Because the original setting also influenced the filter structure, this control morphs between those two designs.

Next up are three controls that affect LFO behaviour: Amount, Centre and Offset. Amount selects a modulation range for the LFO (0-3 octaves), Centre adjusts the modulation centre frequency (40Hz-4kHz), and Offset adjusts the left/right phase offset of the LFO (up to 180° either way). In Advanced mode, you can sync to host tempo, with the Rate knob setting note divisions rather than frequency. You can also apply an offset to the LFO cycle using the Phase control. Things are rounded off with high- and low-pass filters and a dry/wet mix control.

Rocksteady

BigRock's sound is instantly likeable, and in basic mode, the Jean Michel Jarre pad preset delivers loads of thick, resonant swirl.



As expected, though, it's the advanced features that take this to another level. A small tweak of the Offset control and you find yourself surrounded by a smooth stereo swirling effect – push it too far, though, and the out-of-phasesness can be disorientating! Factor in the low- and high-pass filters and centre frequency setting, and tailoring slow, evolving tempo-synced pad effects is very easy. We were surprised by how powerful the colour option could be at its maximum setting, and also with the variety of flavours that it achieves in other positions. Also rather useful is the LFO Phase Offset knob, as

you can position it so that the sweep starts where you want it to within its cycle.

So, any frustrations? A couple. First, we noted that a new instance of the plug-in always launches in basic mode. More limiting is the fact that you're stuck with just one LFO with a fixed shape. Even so, if you're interested in BigRock, your primary concern will be with whether it delivers that classic rich tone, and this it certainly does. **cm**

Web www.artsacoustic.com
Contact sales@artsacoustic.com

System requirements

PC Pentium/Athlon 800MHz, 128MB RAM, Windows XP/Vista/7, VST host

Mac G4 or Intel Core Solo, 128MB RAM, OS X 10.5 or later, VST/AU host

Alternatively

D16 Group Fazortan cm131 >> 7/10 >> €35

Great-sounding Small Stone-alike, with several 'missing' features added since our review

SoundToys Native Effects V4

cm152 >> 10/10 >> \$495

Contains the PhaseMistress phaser, also available to buy separately

Verdict

For Captures essence of the original

Brings modern flexibility

Excellent for adding swirling stereo width
Useful starter presets

Against LFO is rudimentary

Always loads in basic mode

Even Jean Michel Jarre couldn't fail to be impressed by the glorious whooshing of this little gem of a plug-in

Stoned in love

Since its first appearance in 1974, the Small Stone has been produced in various guises, including three variations under the Russian-built Sovtek name. Originally designed by ex-EMS synth engineer David Cockerell, the Small Stone uses OTAs (operational transconductance amplifiers) rather than regular op-amps or the FETs (Field Effect Transistors) used in MXR's Phase pedals. These components impart third harmonic distortions and, combined

with its complex filter design, shape that distinctive rich swirl.

Although the Small Stone's features have remained the same, component choice and circuit board designs have varied over the years. Of the eight variations manufactured, the first two models are the most sought after, and the most recognisable edition has to be the silver-and-orange-faced one. This US second revision (MkII) is the one ArtsAcoustic have modelled for the BigRock.



Novation Dicer

£79

PC

MAC



The controller kings hit the DJ market, but is this streamlined offering a cut too far?

> Dicer offers hands-on control of three key performance features of Serato's Scratch Live: autocue points, looped rolls and looping. Setup could not be simpler. In the Dicer box you'll find two identical controllers, each offering five main pads and three mode selection buttons. They slot snugly into the 45RPM adaptor holes on Technic SL1200 turntables. Alternatively, you can unscrew the attachment and stick them to a pair of CDJs or a laptop using the included 'DJ putty', which is a sticky, reusable substance. Connection is via USB: connect one controller directly to your computer, and use the included 1/8" jack cable to link the two units together.

Operation is simple too. When used as a Serato Scratch controller, there are three modes: hot cues, loop roll and auto loop. The buttons light up in red, green and yellow to indicate the mode.

In hot cues mode, you can set, erase and replace up to five trigger points, and it's very easy to do this on the fly. The buttons are very responsive, too. Next comes the outrageously fun loop roll mode, which offers five different speeds of rapid-fire loops, triggered by pressing and holding the five buttons. Speeds range from rhythmic repeats to all-out stutters. When you release the button, the track continues in exactly the place it would have been if you hadn't triggered it - perfect for live edits and builds.

The final mode - auto loop - deals with longer loops and is designed more for mixing and extending tracks as opposed to performing. You can trigger loops with ease - simply hit a button again to unloop.

Roll the dice

We were underwhelmed when we unpacked Dicer; but the moment we began using it, we'd have happily mixed for a day. Within minutes we were pulling off complex combinations. Used judiciously and creatively, it's no gimmick and will really enhance a set.

If you do get bored, Dicer's functions can be mapped to MIDI functions in Serato, plus it works as a plain old MIDI controller for any software. The colour intensity of the LEDs can be controlled via MIDI (this is how we conjured up the colour combination shown above), so there's potential for two-way interaction with software.

Dicer doesn't do anything you can't do in another way, and it's not as flexible as most controllers. However, we've never used anything that makes it all so easy and so fun, and at the same time is so exquisitely compact and convenient for the gigging DJ. It's a hit!

Web www.novationmusic.com

Contact Focusrite, 01494 462246

System requirements

PC USB 1.1 connection, Serato 2.1

Mac USB 1.1 connection, Serato 2.1

Alternatively

Novation Nocturn

cm124 >> 10/10 >> £69

Enough controls to do the same job but not as suited to loops/hot cues

Native Instruments Traktor Kontrol X1

cm150 >> 10/10 >> £175

Lots of controls, but pricier and takes up more space

Verdict

For Fits perfectly on SL1200 turntables
Buttons have a nice feel
Simple, sensible layout
Coloured backlighting
Can really enhance a DJ set
There's currently nothing as convenient

Against Can make CDJs cluttered

Simple yet effective: that's Dicer's mantra and one that should resonate with a good many DJs. Great price, too.

9/10

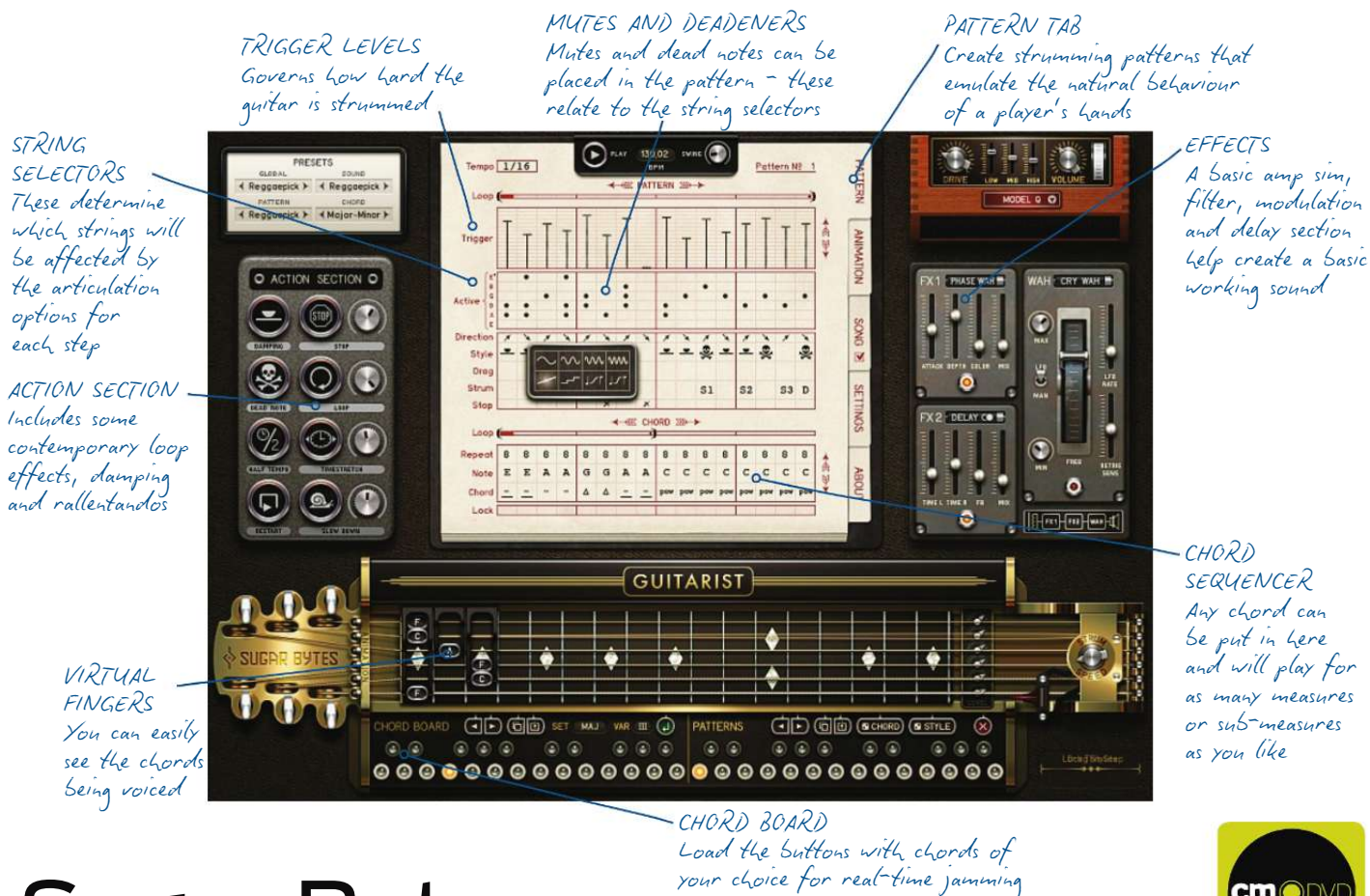
Sensible software

There's an uncommonly large amount of common sense, pragmatism and public spiritedness in the DJ controller industry. For example, the recent Native Instruments Traktor X1 was not only well suited to Traktor's natural foe, Scratch Live, but even came with a printed template overlay for it. Similarly, the Serato-centric Dicer comes with templates for Traktor users, too.

Of course, the Dicer units are designed for Scratch Live's looping and cue-point

features, but Traktor has plenty of similar tricks up its sleeves. And while a large number of Traktor users don't use the Scratch (ie, 'virtual vinyl') version, they too can take advantage of Dicer for easy control of performance functions, attaching the control units to a laptop using DJ putty.

One more thing: many digital DJs already have a controller, but the neat thing about Dicer is that it can make a nice adjunct, and so needn't be seen as a straight alternative.



Sugar Bytes Guitarist €199

PC MAC



Sugar Bytes plug-ins are known for being hugely creative and high on fun factor. Does their latest, Guitarist, have a serious side, though?

System requirements

PC 2GHz CPU, 1GB RAM, Windows XP/Vista/7 (32-/64-bit)

Mac 2GHz CPU, 1GB RAM, OS X 10.4 (32-/64-bit)

> Billed as "the most complete guitar software of all time" and "the perfect guitar emulation", Sugar Bytes' Guitarist had our expectations running high. If the claims are true, we should be able to create the sound of any type of electric guitar with it, played in any style, running through practically any amp/effects rig - oh yes!

The jury's out

The attractive GUI is dominated by its central work window, with the guitar neck at the bottom. Pressing the Play button kicks off the default song: the strumming machinery springs to life, the robotic 'fingers' jump around the fretboard, and you can see the step sequencer working through its pattern in the main window. The built-in sequencer plays the guitar, using its own bespoke controllers for the different articulations. Alternatively, you can also trigger chords and strumming via MIDI.

We first ran through a few presets to get a feel for what Guitarist can do. The results are mixed. Generally, the cleaner riffs are more successful, with some surprisingly good picking and strumming action. Some of the rock efforts,

on the other hand, are embarrassingly robotic. Oh, and it seems that there's no way to change tunings. This *isn't* the most complete guitar software of all time!

OK, let's back up a bit. This isn't quite what we expected, so what is it? It's a virtual guitar that's played by a pattern sequencer and is designed to emulate rhythm parts played on an electric guitar. It has the capacity to emulate nuance and expression, and you can also customise chords and fingering patterns. All of this can be played live or sequenced.

Expressive qualities like mutes, deadened notes, stops, slides, slower or double strums and up or down strokes are easily entered into the step sequencer grid. That strumming pattern can then play a series of preset or customised chords in whatever sequence you like, and in turn these sequences can be chained into a song. In addition, the Animation feature lets you change notes in each chord throughout the pattern to enable melodic parts with hammer-ons and pull-offs.

There's a choice of four sampled guitars: a Duesenberg Starplayer Special in both standard

"Guitarist falls far short of its claim of being the most complete guitar software of all time"

and bright varieties, a Stratocaster and a Telecaster. The guitar multisamples can be triggered in a random round-robin sequence that keeps repetitions sounding natural, and the mod wheel can be used to dampen/deaden. Patterns can be dragged and dropped into MIDI sequencer tracks and there are some fun extra controllers for looping and timestretching that bring a modern edge to a traditional instrument. There's also a nice Slow Down feature that gives natural-sounding rallentandos.

There are three amp options (two modelled amps and DI/bypass), a modulation box, a delay/reverb stomp and a volume/filter rocker pedal with which to shape your sound. These effects are in a fixed order and sound passable; far better results are achieved by putting Guitarist through a dedicated amp sim plug-in.

Guitarist falls far short of its claim of being the most complete guitar software of all time. An instrument that combined, say, Virtual Guitarist 2, Electri6city, Guitarist, VSL Guitar, AmpliTube 3 and Guitar Rig 4 would perhaps be able to make such a bold claim - but we feel that Sugar Bytes' wording is misleading.

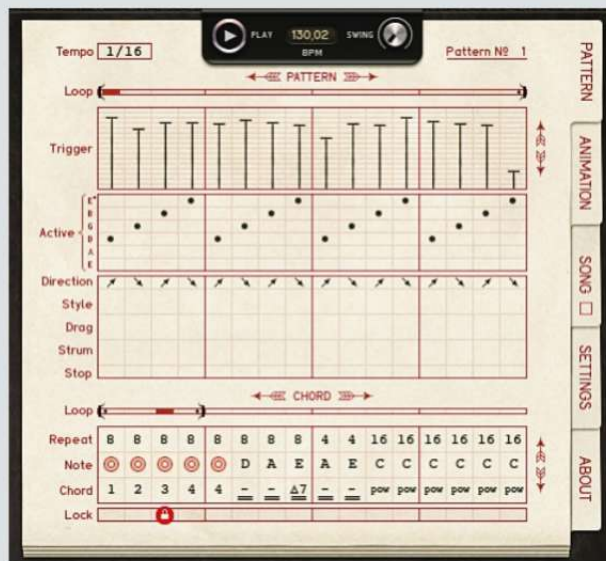
Taken for what it is, Guitarist is a nice customisable strumming and picking machine that's great for laying down super-tight funky wah parts. If you need electric rhythm parts in a hurry, it could get you out of a spot, and as a songwriting tool, it's awesome. But a 'must have' product should be able to do a lot more.

We noted a number of omissions and shortfalls in use. There's no semi-acoustic 335-type guitar, for instance - this would make Guitarist a jazz weapon! Indeed, acoustic guitars - and even ukuleles and banjos - would seem perfect for this engine. The existing axes have no pickup selection. Effects-wise, the amp sims are very rudimentary and there's no compression. We'd like to be able to freely move the 'fingers' and save the resulting chords - and create custom tunings and save them as presets. You can detune individual strings, but there's no global fine-tuning. Finally, we'd like to see a

global dynamics setting that controls the general picking hardness.

Sugar Bytes acknowledge these criticisms, some of which will be resolved in future updates, and we hear that a Gibson 335 is in the works. This is a disappointing yet promising start. We're looking forward to the updates, the first of which - v1.1 - should be out by the time you read this.

Web www.sugar-bytes.de
Contact info@sugar-bytes.de



Enter chords and choose from many different articulations in the pattern sequencer

Pretty patterns

The pattern sequencer tab is where you get your groove on. The Tempo field sets the resolution of the pattern - the actual tempo comes from the host sequencer, or the tempo dialog in the standalone version. This is a 16-step pattern and it's easy to see at a glance the level of each step, and which strings are played. Each step can be an up or down stroke, and can be muted or deadened via the Style editor lane.

There are several 'lanes', including the Style one we just mentioned, each of which enable you to add different articulations. The pop-up for the Drag editor lane is shown above, revealing vibrato options and slurs, which can

be either portamento or glissando (smooth or stepped, ie, bends or slides) between chords. The Strum lane enables you to insert slower or double strums, and the Stop lane kills ringing notes or creates a staccato note/chord. With careful programming, it can effectively be string-specific.

Below this is where you build the chord sequences, with Repeat showing how many beats each chord plays for. At the bottom are the chord variations or chord button assignments - Lock holds a chord in place for editing purposes. Sugar Bytes have stuffed a lot of power and flexibility into the interface without overcomplicating it.

Alternatively

Vir2 Electri6city

cm157 >> 9/10 >> £259

Eight superb-sounding sampled electric guitars, but no sequencer

Rob Papen RG

cm132 >> 9/10 >> £79

Sampled electric rhythm guitar with sequencing and funky effects

Verdict

For Good graphical interface

Simple to use

Great songwriting tool

Can sound lifelike...

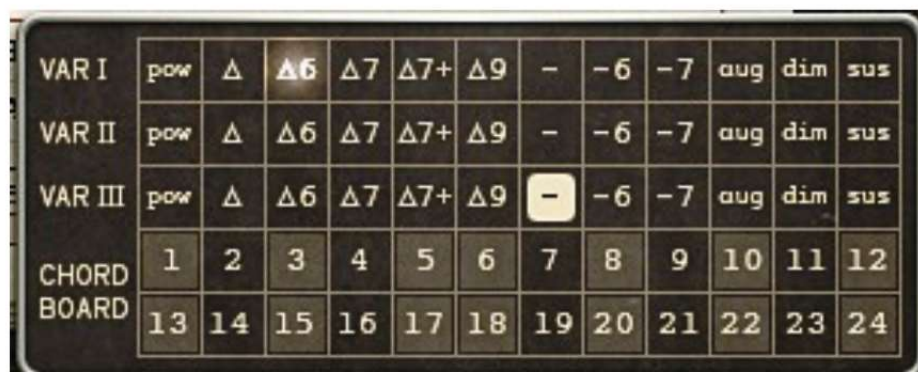
Against ...or terribly robotic!

Limited choice of guitars

No pickup switching

Effects are rudimentary

Guitarist falls short in a few key areas, but the fundamental concept is solid and the interface is likeable



Here's every variation of your root chord - that should keep the jazzers happy!

6/10

cm mini reviews

A rapid-fire round-up of apps, sample libraries, ROMplers and more

Uloops Labs

Uloops Music Composer Free/\$15 yearly

Web www.uloops.net
Contact info@uloops.net
Format Android

This is a one-stop music-making environment for your Android phone. It's a free download, but there's a \$15 yearly subscription to unlock limits on track number, render requests and more. We're reviewing the subscribed version here.

Uloops includes synths, drum machines and an FX instrument called Modulator. You can also record audio from the built-in mic of your device. Add reverb and delay as well as insert effects to realise complete tunes. The sequencer has a building-block approach: a Song contains a sequence of Loops, and each Loop can contain any number of the instruments mentioned above. Each instrument has a number of presets and numerous parameters.

To make all of this work on an Android device, a little trickery is involved: instead of audio coming from a built-in engine, it comes via a DSP server on the internet. Once you create a Loop, you hit a Render button and Uloops'

server renders an OGG audio file and sends it back to your device. Render times were under five seconds for a four-bar loop on the HTC Eris we were using. Obviously, you need an active internet connection (Wi-Fi or phone data) to use Uloops.

Working this way takes some getting used to. For example, the Synthesizer module uses an organ patch that you hear when programming patterns – only after hitting the Render button will it play back with the intended sound. The Drum module does use built-in drum samples: there are 14 kits with 17 sounds that have unique personalities but were often too lo-fi and short for our liking. We also noticed tiny gaps between loop sections.



However, minor complaints aside, stuffing this much power into a single application is an impressive accomplishment – especially for a platform that's not the friendliest for audio. An update should be out by the time you read this, promising sample support, a more robust patch library, and improved latency and audio quality.

7/10

MultiTrack DAW 2

Harmonicdog £5.99

Web www.harmonicdog.com
Contact hamilton@harmonicdog.com
Format iPhone and iPad

The original version of MultiTrack was one of the first proper multitrack DAW-alikes for the iPhone, with a clean interface, trouble-free operation and a whopping 16 tracks of audio. The most notable upgrades for v2 include non-destructive editing, copy and paste, looping and, of course, iPad support. Oh, and nowadays you can use up to 24 tracks in the app – not bad.

MultiTrack records at CD-quality 16-bit, 44.1kHz resolution with 32-bit internal processing. It only offers eight stereo tracks as standard, but an in-app purchase allows you to upgrade it to 16 tracks for £4.99 or 24 for £9.49. For rough demo recordings the internal mic can be used, but the best results are achieved by plugging in a quality iPhone mic like the Blue Mikey or a guitar interface like the IK Multimedia iRig.

The feature-set is basic in comparison to a traditional DAW, but options such as punch in and out, multiple undo levels and a bin browser make it a surprisingly versatile portable recording tool. The adjustable buffer size means round trip latency can be set as low as 11ms, and

latency compensation means overdub timing isn't a problem. The less cramped UI on the iPad makes things easier, but the smart design means the iPhone version is still easy to use.

UIPasteboard support enables audio to be copied/pasted between other apps, and audio can also be imported via iTunes filesharing and direct iPod library access. A bounced mix can be exported as a WAV or OGG and sent via email, Wi-Fi or uploaded to SoundCloud (MP3 support is in the pipeline). Overall, MultiTrack has advanced significantly since its first incarnation. There are still some minor weaknesses – the pop-up menus in particular



can be fiddly to use – but the simple workflow and good sound quality make it one of our top choices for mobile recording.

8/10

Soundware round-up

SoundOrder Electronic Drums Vol 1

€87

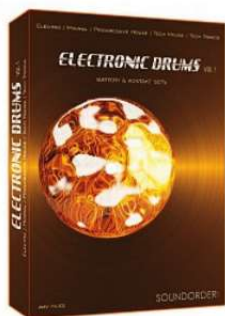
Web www.bestservic.deContact mail@bestservice.de

Format Battery 3, Kontakt 3 (and higher), WAV, MIDI

This pack comprises a compilation of samples taken from Soundorder's existing Battery sample sets, along with some brand new FX and two entirely new bonus kits. This amounts to 32 standard kits with the bonuses on top: very nice!

Various flavours of house drums are on offer here, and there's a decent trance kit thrown in for good measure, too. You don't need to own Battery or Kontakt to enjoy them because the raw samples are included. These are all instantly usable across the spectrum of EDM.

9/10



Loopmasters **Pete Lockett World Percussion** £30

Web www.loopmasters.comContact info@loopmasters.com

Format WAV, REX; Apple Loops available separately

This collection of top-notch world percussion is from professional session percussionist Pete Lockett. The 455 WAVs and 403 REX loops comprise everything from tinkly cymbals to thunderous Taiko drumming. Everything is recorded to a high standard, and there's plenty of expressive playing.

This is a sensible purchase if you're working on soundtracks or indeed in any genre that could benefit from unusual percussion: you get a lot for the price and there's some truly original work here.

9/10



Puremagnetik **Toybox 2** \$12

Web www.puremagnetik.comContact info@puremagnetik.com

Format Live 8, Logic 8 or Kontakt 3.5

Here's another brilliantly quirky pack from Puremagnetik, focusing on the raw sound of electronic toys. You get 11 multisampled musical toys, two 'menus' of sound FX and speech fragments recorded from speaking toys, and a small percussion set.

Quality recording combined with original sound choices (an Otamatone and Sonica number among the interesting melodic sources) mean that you won't get anything exactly like this anywhere else. Only you will be able to determine whether you actually need such a collection, but at a price this low, it's a profoundly fun bargain library of sonic oddness.

8/10



Detunized **Hamm and Eggs** €7

Web www.detunized.comContact contact@detunized.com

Format Ableton Live Pack

This Live Pack from Detunized features the legendary Hammond B2 Organ, a Leslie 251, and a Trek II TP-2B percussion module. There are two flavours: Type A and B. Type A gives you access to a set of commonly used parameters, with drawbars available via the chains' level controls, while Type B has the drawbars mapped to macro controls. Four organ-like mini-instruments are also included.

This ultra-affordable pack is perfect if you own Live and want a quick, easy way to add some decent Hammond vibes to a track. If you're after a comprehensive rock/blues organ collection, though, you'll need to look elsewhere, and no doubt fork out far more cash.

8/10



Fireloops **Dance Beats and Breaks** \$68

Web www.fireloops.com

Contact via website

Format REX, WAV, Apple Loops

A collection of 565 dance drum loops spanning genres from house to DnB. Glitch, electronica and ethnic loops all make an appearance. There's a lot on offer here; the problem is that practically none of it is that usable or inspiring. There's a lack of punch, generally poor use of compression, too much muddy low-end and few standout moments.

Despite containing a large number of samples, a pack in this price bracket - and one that offers only drum loops - is going head to head with the giants of the dance sample world. Unfortunately, this slightly amateurish effort can't really compete.

5/10



Dark Side of the Tune **Twisted Cistern** \$40

Web www.darksideofthetune.comContact info@darksideofthetune.com

Format WAV

Twisted Cistern features samples captured in a disused underground water storage cistern of two-million-gallon capacity. It "discharges a haunting 45-second reverb". You get 197 sounds as well as 30 drum samples.

After some time spent with these samples, it all starts to seem slightly pointless: there's noticeable background hiss in places and reverb tails are even cut off of some sounds. Without a top-notch recording and more exciting source material, better results would arguably be provided by a plug-in. And it's a real shame that no impulse responses were created of this fascinating real-world space. We love the concept here but the sound quality lets it down.

4/10



Loopmasters **DOWNLOAD**

DJ Mixtools 01 - Minimal Underground Techno £15

Web www.loopmasters.com
Contact info@loopmasters.com
Format WAV, Ableton Live presets



As the boundaries of conventional DJing blur into those of production, Loopmasters have jumped on the concept of 'filler' material. Consisting of loops and FX made to fill and bridge the gaps in your mixes, DJ Mixtools is perhaps the most perfectly non-descript house music we've ever heard.

Made up of 16-, 32-, 64- and 128-bar parts, each is ready-mapped for Ableton Live. It's hard to fault DJ Mixtools - the price is right and the material delivers without imposing its style too much on your mix. If you want to make better use of your C and D decks in Traktor, or need an extra beat to smooth transitions in Live, this could well be for you.

8/10

Prime Loops **DOWNLOAD**

Filter House Attack £22

Web www.primeloops.com
Contact info@primeloops.com
Format WAV, Live Pack, Apple Loops, Acid Loops, REX 2, FL Studio, Reason ReFill



Filter house means looping 70s funk samples, banging kicks and some of the best filtered breakdowns to ever rock the dancefloor. Thing is, if you're expecting Chic-like basslines or Chaka Khan chords, you won't find them here because this is literally house, filtered - it should be called *Filtered* House Attack! The synth loops are more Guetta and Deadmau5 than DJ Falcon or Daft Punk, which in itself is no bad thing. With 200 loops and 100 one-shots, there's enough to play with, and at 125-130bpm, you'll certainly find space for it in more modern dancefloor jams. Just don't expect that French touch. Non.

7/10

Big Fish Audio

Heart of the City £65

Web www.timespace.com
Contact Time+Space, 01837 55200
Format WAV, Apple Loops, REX, ACID, RMX



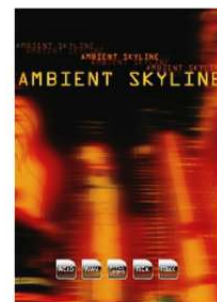
While the cover of Heart of the City might bring to mind a John Carpenter soundtrack, it's actually all about hip-hop, with almost 1000 loops at your disposal, stemming from 40 construction kits. Labelling all of the kits with a New York reference, this pack tries to bring the street to your studio, but makes numerous wrong turns. Stylistically, it's outdated and cheesy, with the sounds being 'cheap' and not far off General MIDI. Worst of all, there's a hamfisted attempt at groove, swagger and swing, the results being beats and synths that often just sound unfortunately out of time. While Big Fish Audio have done some great hip-hop libraries, this certainly ain't one of them.

3/10

Big Fish Audio

Ambient Skyline £86

Web www.timespace.com
Contact Time+Space, 01837 55200
Format WAV, Apple Loops, REX, ACID, RMX



This pack delivers substantially more than the usual ambient clichés, and it does it by packing in tons of instruments, from piano and guitar to saxophone and flugel horn. Of course, there are plenty of trippy synth sounds and spacious FX too. There's flexibility where you need it, such as melodic lines in multiple keys. It would have been good to have some of the reverbed sounds as dry versions too, but they do sound terrific and are ready to go.

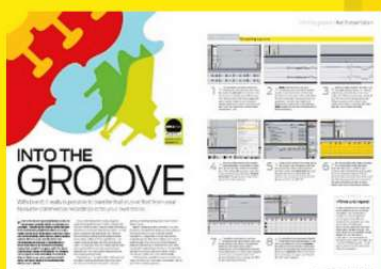
Let us be clear about this: this pack is best suited to those working on soundtracks. If that's you, then with 2266 well-labelled loops at your disposal, Ambient Skyline will help you to assemble the perfect ambient atmosphere fairly quickly. **cm**

8/10

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cm/recommends

The best new gear from the last three issues...



Steinberg Nuendo 5 £1531

Rating 9/10
Reviewed **cm**155
Contact via website
Web www.steinberg.net

What is it? Cubase's big brother is a DAW of epic price and proportions, being aimed primarily at post-production professionals. New features include an enhanced automation system, intuitive surround panner, better MediaBay, and a funky pitch effect. Some of Nuendo 5's improvements are already shared by Cubase 5.5, and - fingers crossed - hopefully we should see more of them making an appearance in Cubase 6.

Verdict "A solid and attractive update that's light on pointless 'whizz bang' additions."



Propellerhead Reason 5 £300

Rating 10/10
Reviewed **cm**156
Contact Sound Technology, 01462 480000
Web www.propellerheads.se

What is it? A self-contained virtual studio, Reason revolves around a rack that can be stuffed with synths, drum machines, effects and more. Additions for v5 include Kong, an awesome semi-modular drum machine; Blocks, a superb sequencing system; Dr. Octo Rex, which supersedes Dr. Rex and lets you load up to eight REX files at once; hardware-style direct sampling; and a generally slicker GUI.

Verdict "It's always been a superb app, but with v5, Reason finally feels 'complete', offering a highly satisfying musical environment."



Vir2 Electri6ity £259

Rating 9/10
Reviewed **cm**157
Contact Time+Space, 01837 55200
Web www.timespace.com

What is it? A Kontakt-powered collection of eight sampled guitars, this is like Superior Drummer or BFD but for guitars instead of drums. There's a Fender Strat, a Tele, a standard Gibson Les Paul, a P90-loaded 'Paul, an ES-335 and an L4, and even a Rickenbacker and a Danelectro. Electri6ity's clever under-the-hood humanisation makes programmed or played parts sound more like a real player, and there's surprisingly good amp simulation built right in.

Verdict "A superb solution for anyone seeking a broad palette of convincing sampled axes."

What we've been using this month



Ronan Macdonald
Editor

PSP AudioWare's PSP 85 might just be the ultimate sound designer's delay plug-in. Shame I'm not the ultimate sound designer, but at least I've now got the tool if not the wherewithall.



Lee du-Caine
Deputy Editor

112dB's Big Blue Limiter is seeing more and more action in my projects. Either its analogue modelling is so spot-on that it's taken three months for it to 'burn in' or I'm simply warming to it.



Tim Cant
Multimedia Editor

I'm far too busy to tinker with NI's Reaktor, but thanks to Reaktor Player, I've got the chance to mess about with some top-notch ensembles for free! Don't hate the Player - hate the game.



Caity Foster
Production Editor

I'm like a magpie but attracted to brightly coloured as well as shiny objects, so this month I'm all in a flap over Novation's funky Dicer, which is currently sitting pretty in my setup.



PRIME LOOPS

WE'RE IN THE MIX

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- This is the Remix
- Finger-drumming for beginners
- Gating and analogue warmth
- Producer Masterclass: S.K.I.T.Z Beatz
- Flux IRCAM Tools Trax, Voxengo HarmoniEQ, Audio Damage Axon and more reviewed



Issue 156 October 2010

- 1249 Time+Space samples and 2001 drum 'n' bass samples on the DVD
- The cm Guide to Reason 5
- Extreme envelopes
- Jamming in Ableton Live
- Producer Masterclass: DJ Fresh
- Cakewalk V-Studio 20, Steinberg HALion Sonic, Slate Digital FG-X and more reviewed



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- Troubleshoot your music computer
- iPad MIDI control
- Build electronic beats from scratch
- Producer Masterclass: Nick Thayer, Black Noise
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- Synapse Audio Junglist and 2001 Carnival Rave samples on the DVD
- Make a track for free
- Touch of genius (make music on your iPad)
- Hard times (integrating outboard gear)
- Producer Masterclass: Blame
- XILS-lab PolyKB, Line 6 Pod Farm 2, UAD Precision Enhancer Hz and more reviewed



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- Ambient masterclass
- Rhythm and stealth (videogame music)
- See the music (a visual look at sound design)
- Producer Masterclass: Jayce Lewis
- Xfer Records Nerve, FXpansion BFD Eco, UAD FATSO, Magix Vandal and more reviewed



Issue 152 June 2010

- Time+Space UVI Soundstation and 2045 dark dub samples on the DVD
- The beginners' guide to mixing
- Tricks with time
- ...And the kitchen sink (foley sound)
- Producer Masterclass: Bonobo
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>Your questions answered

Q&A

Whatever you need to know, we're here for you. Whether you're looking for buying advice, help with a technical problem or advice on getting a certain, specific sound, send your questions to cmhelp@futurenet.co.uk

Belly bother

Question I'm trying to record some belly gurgling noises for use in my tracks. I've tried placing a microphone near to my belly and recording but it always sound muffled. I'm after something a bit clearer. Do you know any way to get clearer recordings? I'm using an M-Audio Microtrack and the mic that came with it.

Dave Foam

Answer We can only imagine that recording belly noises is quite difficult. Not only do you need access to the requisite gurgling belly, but - depending on the stomach in question - the gurgles could be quite quiet.



The stethoscope: not exactly a studio essential, but if you're looking to record any form of, er, belly noise, you might want to consider investing in one...

COMPUTER music QUESTION OF THE MONTH

The Sample Boutique
Loopmasters
WWW.LOOPMASTERS.COM

The writer of our *Question of the Month* will receive their choice of two Artist Series sample libraries courtesy of Loopmasters. www.loopmasters.com



Ideally, you'd want to use the most sensitive mic and highest quality preamp possible, and while the Microtrack is a decent bit of gear, its default mic is unlikely to be ideal for this. A quality condenser microphone should yield better results. It makes sense to put the mic as close to the source of the sound as possible, though we'd hesitate to recommend trying to access your stomach internally, so you'll probably have to settle for pressing the mic against your flesh while your innards gets their rumble on.

As an alternative to a mic, consider a device that's designed specifically to pick up bodily sounds: a stethoscope. There are electronic stethoscopes out there with audio outputs for recording, though they can be pricey. Another option is to get hold of a regular acoustic stethoscope and modify it, as explained here: www.bit.ly/dxAMiO.

If you want your sound to stand up in the mix, consider using the art of foley to create a larger-than-life stomach gurgle. Stomach noises are created by oxygen moving through liquid. If you've used a bottle-style water cooler, you'll know that they produce a similar gloopy sound. Try experimenting with recording the sound of water (or other fluids) gugging out of various bottles, then manipulating the recording by changing the pitch, EQ and so on. The results may sound more like the sound you're after than a recording of the real thing.

Rollin', rollin', rollin'

Question I've been trying to add drum rolls to my tracks, but whenever I do, it sounds too computerised, like a drum machine. How can I make snare rolls that sound more realistic?

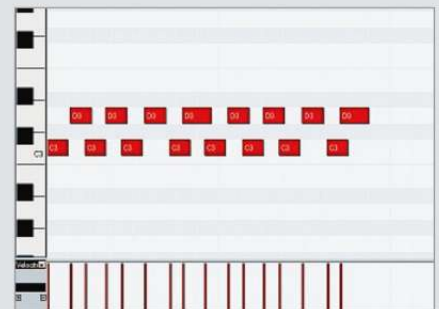
Callum Forster

Answer Getting programmed drums to sound realistic can take quite a bit of time and effort, which is why virtual drummer software

> Step by step

Sequence convincing
snare rolls

1 > If you've ever tried to program a snare roll using a sample or a sound from an old-school analogue-style drum machine, you'll know that making it sound 'realistic' is all but impossible. The key is to use a number of subtly different samples. Create a new patch in your sampler, then load **Snare1** and **Snare2** (from the **Tutorial Files/Q&A** folder on the **cm** DVD) onto separate keyzones.



2 > Program the drum roll to alternate between the two sounds, as shown. You might start off with the hits perfectly quantised, but if you really want it to sound authentic, turn your DAW's Snap function off and make slight adjustments to each hit's timing.



3 > Varying the note velocities is another way to give the sound a more organic quality. This is usually tied to the sound's volume level. Depending on the level of complexity you want to go into, you could also use it to subtly modulate the patch's EQ or filter cutoff to change the tone of harder hits. Here we've assigned the velocity to an EQ band's **Gain** level.



If you require more plug-in processing grunt than your extremely powerful new iMac can provide, a. we're impressed, and b. you have a few options, but all of them require a fair bit of money and/or setting up

such as EZdrummer and BFD is so popular. However, with a few tricks it is indeed possible to program snare rolls that don't have that artificial 'machine gun' feel. See *Sequence convincing snare rolls* on the right for instructions on how it can be done.

Go go PC power!

Question I have a new iMac and an old PC with a pretty decent processor and a nice amount of RAM. I was wondering if there is any way that I could use my old computer to boost the processing power of my iMac. I've heard about the Waves Sound Grid Server and noticed it is connected via an Ethernet cable or wireless hub. This inspired me to wonder if there is any way to combine the machines via Ethernet? Failing that, could I use a Mac mini in a similar way? I'm looking to maximise the power of the machine with minimal cost and use it in a DSP-type way for plug-ins, as my iMac suffers under the strain.

Christopher McClymont

Answer There are various ways to use networking in order to combine the power of multiple computers. Some are dependant on what software you use. For instance, Apple's

Logic has the capability to use distributed networking as long as you've got a fast enough network (specifically, Gigabit Ethernet). With this system, one machine runs Logic and the other runs the Logic Node application. The master then offloads effect and instrument calculations onto the other machine. This can work in near real-time depending on variables such as CPU loads and buffer settings. Here's the problem for you, though: this system will only work on Mac computers, and so you would indeed need to get hold of that Mac mini you mention.

Steinberg's Cubase and Nuendo have a similar facility called VST System Link, which works via digital audio cables over S/PDIF, ADAT, TDIF or AES, assuming that each computer is equipped with a suitable ASIO-compatible audio interface. This system is pretty flexible, and it enables you to share the load between different machines, or use one machine to run processor-intensive send effects. It also works cross-platform, but the downside is that you need to buy multiple copies of Cubase or Nuendo, as well as audio interfaces with the appropriate digital audio connections.

There are a few non-DAW-dependant applications that enable you to send data between DAWs, including the PC-only FX Teleport (get the demo at www.fx-max.com), and the freeware Wormhole 2. We reckon

"I was wondering if there is any way that I could use my old computer to boost the processing power of my iMac"

> Step by step

Make the *Every*
th synth stab



- 1 > Call up ZebraCM (on the DVD) in your DAW. This synth is ideal because its unison detunable oscillators make it easy to create fat textures. Start by turning the **Filter Cutoff** all the way up, and the **Volume** of the second oscillator all the way down.



- 2 > Set the first oscillator's **Voice** to **Quads**, and activate the **Voice Reset** mode. Set the **Wave** knob to **2.00**, and turn the **Detune** level up to **24.50**. That's pretty much it, programming-wise. If you're after an authentic early 90s feel, try sampling a short note to produce a consistent stab sound.



- 3 > Whether you're resampling or playing the sound straight out of the synths, you'll find it's a bit bassy. We suggest applying some EQ to cut out the low end. Here we've taken off **9.6dB** at **49Hz** and boosted it by **2.8dB** at **177Hz**.



It's well worth upgrading the original Mbox to the Mbox 2 or even 3, both of which are officially supported by Redmond's newest operating system, Windows 7

Wormhole 2 is your best bet - it's free and cross-platform, and it enables you to route audio between machines. The software has been made open-source, but development appears to have stalled of late, so it's probably not much of a long-term solution. Also, it doesn't facilitate the transmission of MIDI over the network - though software such as MusicLab's MIDloverLAN CP (www.musiclab.com) and the free ipMIDI (nerds.de) do. You could potentially use one of those programs in conjunction with Wormhole 2, but this setup is potentially more hassle than it's really worth.

One way you can squeeze more processor power out of your CPU is to set your audio driver to a larger buffer size. This will mean that your DAW doesn't operate quite so snappily, but in return you'll get a little more out of your CPU before it starts to choke. To find out how to access your audio driver's settings, consult your audio software's documentation. It's also good practice to try to be sensible with your plug-in usage, and make sure that all of the effects or extra tracks you're adding are actually making a difference to the song. You can bounce complex tracks to audio to conserve CPU cycles, and most DAWs offer a 'track freeze' feature, which enables you to bounce tracks, then instantly 'unbounce' them for further editing later.

Beta late than never

Question I have a follow-up question to the one printed in cm152 concerning a computer upgrade and my original Mbox.

You stated that the Mbox is completely incompatible with Windows 7, but then go on to say Avid released beta Windows 7 drivers, so I am a little confused as to whether this would help me use my Mbox on a new laptop with Window 7. If not, can you recommend a couple of inexpensive, good interfaces?

Also, I believe I am going to buy a Dell laptop with the new Intel Core i3-350M

2.26Ghz. Are there any issues or anything I should know about with this processor?

Evan Marx

Answer In our original reply to your question, we said that your original Mbox has been unsupported by Avid since the release of Pro Tools 8.0.3, and that no Windows 7 drivers have been released for it. We also said that - at the time - Avid only offered beta versions of their Windows 7 drivers for all their hardware, which you would have to bear in mind if upgrading to an Mbox 2 interface. So, you could use an Mbox 2 on Windows 7 by using the beta drivers, but you could not use your old, original Mbox.

However, since then, v8.0.4 of Pro Tools has been released and Windows 7 is now officially supported by both Pro Tools LE and Pro Tools M-Powered. The Mbox 2 drivers for Windows 7 are also official now. So it should be very straightforward to run an Mbox 2 with your Windows 7 machine. If you do decide to buy another Mbox, you should also check out the brand-new Mbox 3 line, which is covered on p15 of this very issue.

You ask for recommendations of another inexpensive interface, but you wouldn't be able to use a different audio interface if you want to continue running Pro Tools in any capacity: all of Pro Tools LE's audio input and outputs have to run through the Mbox, so its very much integral to using the software. If you want to continue using Pro Tools and are intent on running Windows 7, you're going to have to go for an Mbox 2 or 3 or look into getting one of M-Audio's M-Powered-compatible interfaces and a suitable version of Pro Tools M-Powered.

If you're choose to give up on Pro Tools and move to a different DAW, there are a wealth of audio interfaces out there to choose from. Interfaces with similar specs to the Mbox (ie, including 2x analogue audio ins and outs plus MIDI and headphone outputs) include the Roland US-25EX (RRP £189), Native Instruments Audio Kontrol 1 (RRP £242) and M-Audio Fast

"You wouldn't be able to use a different audio interface if you want to continue running Pro Tools in any capacity"



Track Pro (RRP £189). All of these interfaces can typically be picked up for less at retailers.

As for the machine you've chosen, the Intel Core i3-350M is fine, but we'd suggest that if you're intending to work on complex projects in your DAW, you'll get far more bang for your buck with a desktop machine. Still, if a laptop's portability is important to you, then you'll certainly find a PC with that processor to be a quite capable machine.

Prodigal son

Question I have been a fan of The Prodigy for a long time, and now I'm getting into music production I would like to be able to make some of the same sounds that they use. One in particular that I've been lusting after is the synth stab from the start of *Everybody in the Place*. How can I make this sound for myself with virtual instruments?

Ellis Bishop

Answer Thankfully you've chosen one of the simpler Prodigy noises to replicate, and getting fairly close to it is possible using synths in the **cm Studio** (which you'll find on the **cm DVD**). Check out the tutorial *Make the Everybody* in the *Place synth stab*, opposite, for a step-by-step guide to creating this awesome sound.

Piece of Cake

Question I use Cakewalk's Sonar 8.5 Producer Edition. I'm very happy with this DAW, but when I read your magazine and online forums no one ever seems to recommend it, with people talking more about Ableton Live and Cubase. Even in **cm156**, when you reviewed Reason 5, you listed Ableton Live 8 - which you gave 9/10 - and FL Studio - which you awarded 8/10 - as alternative pieces of software to consider rather than Sonar 8.5 Producer, which received a score of 10/10. Why recommend

Question How do I make an *Alien Girl*-style noise using Massive?
Elliot Hill



1 > Ed Rush and Optical's hugely influential *Alien Girl* boasts an awesome dark, funky bass groove. You can indeed get pretty close to this legendary sound using Native Instruments' Massive. Start by loading the synth up in your DAW and selecting **File»New Sound**. Select **1 Env** and turn the **Decay Level** knob up to full.



2 > Turn Oscillator1's **Wt-position** knob all the way down so it plays a square waveform. The first thing we want to do is apply phase distortion modulation to it. Activate the Modulation Oscillator and set the **Phase** destination to **1**. This instantly gives the sound a much harsher tone with more mid-range action. Turn the **Phase** knob down a bit to make this more subtle.



3 > Drag the **5 LFO** modulation handle to the first slot under the **Phase** knob, and set the modulation amount to the level shown here by dragging up on the slot. Now select the **5 LFO** panel, and move the **XFade Curve** slider up to the top so that the LFO is set to a pure sine wave. Set the **Rate** knob to about 1 o'clock.



4 > Drag the sine wave over to the left so that it starts on the downward slope. We're going to use this LFO to modulate several other parameters. Set the first filter to **Low-pass** and copy the settings that we've used here.



5 > Next, activate the first insert effect and set it to **Hard Clipper** mode. Turn the **Dry/Wet** knob up to 100% wet (fully right), and set **5 LFO** to modulate the **Drive**. Bring up the **Routing** panel and change the position of the insert to the last slot.



6 > For the final touch, set the first master effect to **Brauner Tube**. Set the **Dry/Wet** level to just under 50/50, turn the **Drive** up to full and add the **5 LFO** modulation handle to its first slot. This time, turn the modulation level down as much as possible. Layer this sound with a sub-bass and you're good to go!

these over Sonar? Also, is there anything you can do in Ableton Live 8, Cubase, Pro Tools that can't be done in Sonar 8.5.3 Producer?

Shaun Wallis

Answer

Let's tackle the recommendation issue first: Reason 5 is not your typical DAW, which is why we chose to recommend more groove-centric software like Ableton Live and FL Studio as alternatives. Reason, Live and FL Studio are great for making 'electronic' tracks, but don't excel at recording and mixing bands. Sonar's strengths are more in the area of multitrack recording, and we'd consider Sonar to be more in keeping with traditional DAWs such as Cubase and Logic. Indeed, in **cm149's** review of Magix's Samplitude 11 Pro DAW, we recommended Sonar 8.5, citing it as "another PC-only powerhouse".

Now, on to the question of popularity. Sonar doesn't seem to be as widely used as Cubase, Logic, Live or Pro Tools. It's perhaps an acquired

taste among computer musicians: some say that it's not as user-friendly or intuitive as other DAWs, while others fall in love with its flexibility, deep, powerful feature-set and superb plug-ins.

There are, of course, discrepancies between the feature-sets of the popular music software packages, but these days it's possible to do most things with most applications. Some have particular strengths in certain areas, but what it really boils down to is what you're comfortable using. While keeping abreast of developments in other music software packages is a good idea, if you're happy with Sonar, you certainly shouldn't worry about what your peers are using.

Speed freak

Question Is there is a way to speed up and slow down a record or track as you play it without it affecting the pitch? If this is

possible, can you do it with Traktor, Ableton Live, Serato or any of those type of music programs?

Nikki Golding

Answer

It is indeed possible to change the speed of a track while keeping the pitch constant, and you can in fact achieve this feat in all three of the programs that you've mentioned. It's easiest to perform this effect in Traktor - simply activate the **Key** mode for the track that you're playing back. With this mode active, you can change the tempo of the track without changing the pitch, and conversely, adjust the pitch of the track without affecting the tempo. Naturally, as a DAW, Ableton Live's pitchshifting capabilities are more useful when working in a music production context, but they are also a fair bit more involved. See the *Change the tempo of a track in Ableton Live* tutorial, right, for a step-by-step walkthrough.

Question

How do I program my own pads in Reason?

Jeff Card



1 > Reason's library features loads of great synth- and sample-based pad sounds, but it's always more satisfying to create your own from scratch. Arguably the best synth to make pad sounds with is Thor. Make a new Reason project and **Create** a Thor synth. Right-click the synth and select **Initialize Patch**.

2 > Click the **Show Programmer** button to reveal Thor's inner workings. Pads sound richer if they use multiple voices, so set Osc 1 to **Multi Osc** mode by clicking the button at its top left-hand corner and selecting **Multi Oscillator**. Straight off, this gives us a nice polysynth sound, but it's a little dull.

3 > The dullness is due to the low-pass filter on the sound. Currently this isn't set to follow the note played. Remedy this by setting the **KBD** (keyboard) knob to **65**. Turn the **ENV** (envelope) knob fully up while you're at it - this makes the envelope have a greater effect on the filter cutoff.



4 > Currently the envelopes are a little quick. Set the **A** (attack) time of the Filter Envelope to 2.43 seconds and the **Attack** of the Amplitude Envelope to around 1 second. Set the Filter **Cutoff** knob to just above **1kHz**. Play a chord and you'll hear a lush filter-swept pad sound.

5 > For the icing on the cake, activate Thor's Chorus and Delay effects to give the sound some stereo width and a sense of space. Develop the pad further to suit your needs. If you want to make the sound more weighty, activate the second oscillator by setting it to **Analogue** mode.

6 > Set the second oscillator's waveshape to triangle and enable it by clicking the **2** button on the left-hand side of Filter 1. Set the Oscillator's **Octave** knob to **3** to lower its pitch, and make it quieter by setting the Mixer panel's **Balance 1-2** knob to **48**.

> Step by step

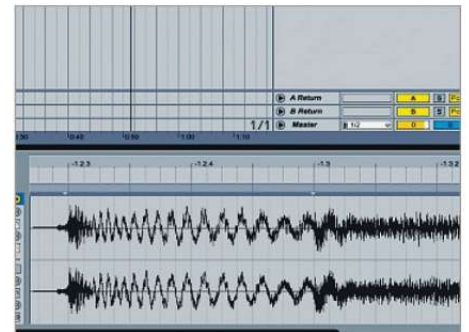
Change the tempo of a track in Ableton Live



- 1** > Load up Ableton Live (the demo's at www.ableton.com) and switch to the Arrangement view by pressing **Tab** or clicking the Arrangement View button at the top right-hand corner of the interface. Drag the audio file that you want to change the tempo of onto the **Audio** track. Live will begin to analyse the track. Double-click the clip to see its progress.



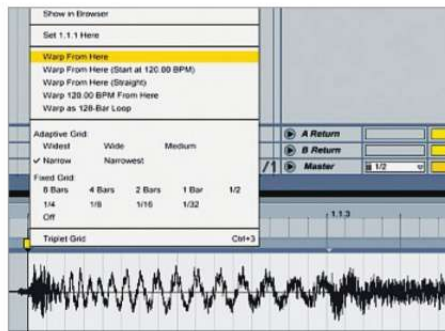
- 2** > Ableton Live has excellent analytical abilities, but it doesn't always get things quite right. To ensure that Live has correctly analysed the track, click the **Metronome** button (at the top left corner of the interface). The **downbeat** – the higher pitched tone at the start of each bar – should play in sync with the downbeat of the project.



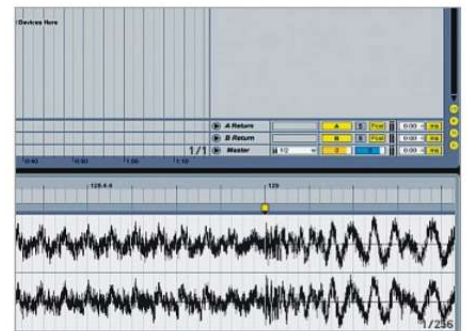
- 3** > If the metronome is off the beat or the tempo drifts during the track, you'll need to warp the track manually. Zoom into the waveform display at the bottom of the screen by dragging the time line. To play the audio back from a certain point, click in the lower half of the waveform display. Find the first downbeat.



- 4** > If there isn't a yellow-green warp marker there already, double-click the first gray bar above the waveform to make one. Right-click the warp marker and select **Set 1.1.1** here. This tells Live that this is the first downbeat in the track.



- 5** > Right-click the warp marker again and select **Warp from here**. Live will analyse the track again, hopefully more accurately this time. If the timing isn't perfect, you can create new warp markers for the sections that are out of time, then drag them onto the correct beats.



- 6** > Sometimes **Warp from Here (straight)** works better than the **Warp from here** option. If Live has got the tempo close but not quite bang on (the metronome gradually drifts out of time as the track progresses), find the start of a bar towards the end of the track and move that onto the correct beat. This will often put the track perfectly in time.



- 7** > If the first identifiable downbeat occurs a little way into the track (eg, there's a 30-second meandering intro before the beat kicks in), you may find that Live chops off the intro altogether, so that the clip starts 'on the beat'. To get the intro back, move the clip along on the track, then drag its left-hand edge...



- 8** > Listen to the intro with the metronome running and warp it manually so that it's also in time. When you're done, click the **Save** button in the Clip view to save the warping map as an **.asd** file along with the clip. Now, whenever you import the clip into Live, it will automatically load with the same warp settings.



- 9** > You can now set the tempo via the **Tempo** control at the top left-hand corner. Experiment with the different Warp modes to see which sounds best. When you're done, click the clip in the arrangement window to set the time range, then export the audio using **File>Export Audio/Video...cm**

When it comes to transforming vocal recordings in your DAW, the plug-ins world is your oyster. Here's our guide...



> For an awful lot of music, the importance of a good vocal part can't be overstated. Since the dawn of recorded sound in particular, the role of the vocal in music has become truly diverse. Unlike other lead parts, vocals, by their inherent nature, are uniquely human. The voice is undoubtedly the most expressive instrument there is, and lyrics provide an extra dimension to the emotional content of a piece. It's no wonder, then, that we can't help but respond to the personal touch that only the human voice can bring, and that popular music is dominated by the song format.

So, why would we want to deliberately process our lovingly recorded vocals away from their natural-sounding origins and obscure that instinctive connection? In a word: originality. Since we all have a voice, have probably had a go at singing ourselves (go on, admit it) and at some point have been wowed by a vocal performance or two, processing vocals represents the next logical step. If the sound of the regular human voice could be considered somewhat exhausted,

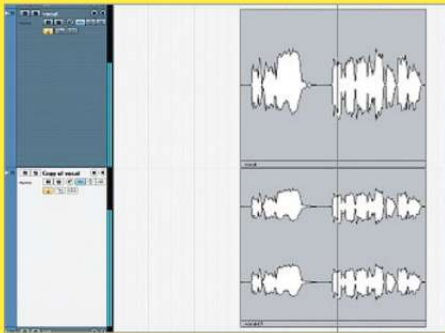
“Vocal processing has come full circle and is again about injecting that personal touch”

then technology serves a purpose in concocting the voice of a spacefaring superhuman from the future, if you see what we mean.

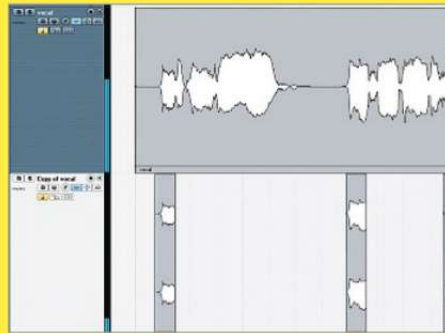
Looking at it from another perspective, a lot of modern music has become very electronic and technical sounding - perhaps undermining the relevance of the overtly organic vocal. Helpfully, the heavy processing of vocals can help marry a techy backing track to the spoken or sung message. Further, certain processing deforms vocals so drastically that the results might rather be seen as attempts to add subtle human elements to otherwise instrumental-based tracks, rather than to add an electronic element to an otherwise human-lead recording. This serves as an example of how vocal processing has come full circle and is once again primarily about injecting that innate personal touch we all love and relate to so effectively.

Read on, then, for our current pick of vocal processing tricks...

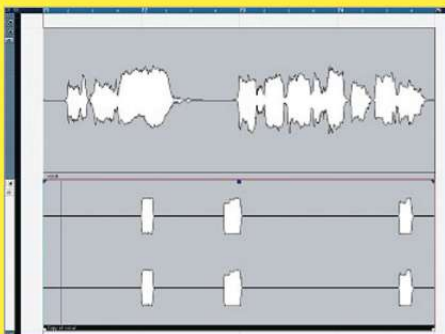
> Step by step Mad reversed vocal effects



1 > Let's begin on our road to vocal destruction with a nice, simple vocal sample. Make a copy of it on a separate track and make absolutely sure that the copy is a stereo file (even if the audio is identical in both channels).



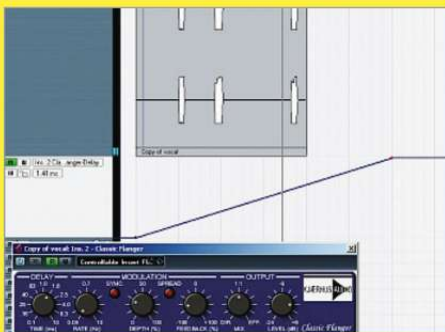
2 > Cut the duplicate so that you're left with only the key phrases that you want the effect to be heard on. Bear in mind that, being a reversed effect, it's going to sound before the actual word being processed. You might want to apply fades at the start and end of each slice to avoid unwanted clicks.



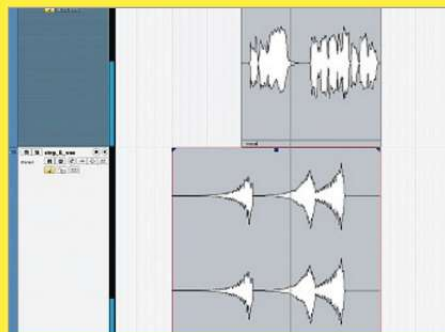
3 > Next, bounce the duplicate and process it with any corrective or dynamics-orientated effects you feel necessary. We've used a limiter to even out the dynamics (this will simplify the sound of the effect slightly, later on). Once that's done, bounce the audio and reverse it, ready for further processing.



4 > Insert a delay plug-in into the duplicate channel. You'll want something with a lot of character. Here, for example, we're using Kjaerhus Audio's gorgeous Classic Delay (which really is a classic), with the quality set low and a lot of low cut. It sounds very fluid.



5 > Next in the chain is Kjaerhus' Classic Flanger plug-in, on which we're automating the delay time to give a bit of extra interest and movement to the sound. It also contributes slightly to the stereo width of the effect, which will give it more separation from the dry part.



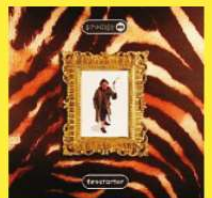
6 > Bounce the results from step 5 (remembering to readjust your locators to catch the tail end of the delay), then reverse the bounced audio back to its original orientation and align it with the dry vocals.

Four memorable vocal effects

Cher, Believe
For this landmark recording, producer Mark Taylor went out on a limb and punched in elements of extreme Auto-Tune on key phrases of the first verse, then gradually more and more towards the final chorus, which is utterly drenched in the effect. Controversy and huge sales ensued.



The Prodigy, Firestarter
Apparently the moment that defined this former rave outfit's transformation into electro-punk superstars, with crazy Keith Flint as frontman. Each of his menacing taunts is preceded by a reversed reverb type effect, creating the illusion of a residual ring on his voice that happens before he's even opened his mouth.



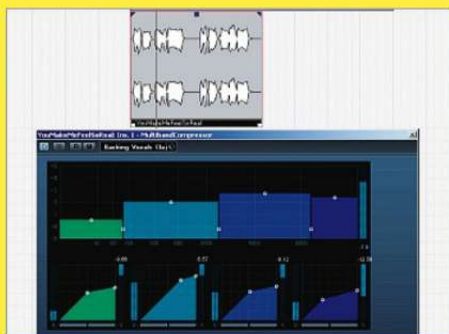
Wildchild, Renegade Master (Fatboy Slim Old Skool Mix)
Lanky big-beat legend Norman Cook took the rap sample from Wildchild's track and chopped it up in manic style in his sampler. The result is a hectic, stuttering, hyper-rhythmic headliner of a vocal, occasionally even performing machine gun rolls.



Beastie Boys, Intergalactic
Vaguely reminiscent of the theme from a certain 80s kids' TV show about robots disguised as vehicles, producer Mario Caldato used a vocoder effect on *Intergalactic's* main hook. Incidentally, the vocoded line is barely intelligible due to the heavy processing but it (semi-literally!) adds another dimension to the backing track.



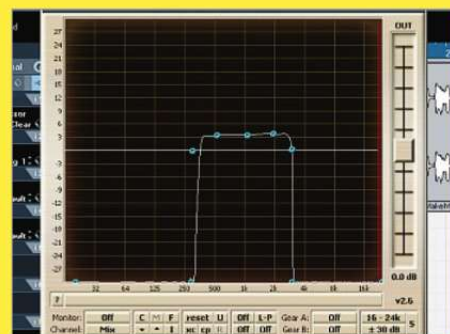
> Step by step Make a futuristic radio voice



1 > Let's make our vocal sound like it's coming out of some sort of 'space radio'. For this to work, we'll want a lot of presence in the original vocal part. So to start, we load up Cubase 5's Multiband Compressor, with the **Backing Vocals Clear** preset, to even out frequency range and tighten the dynamics somewhat.



2 > Antares' Warm from the AVOX bundle comes in handy here for a little extra squashing and saturation, and we follow it with a bitcrusher to give it some crunch. The sample rate divider sounds good as well – crispy and lo-fi, just how we want it.



3 > Next we need to get rid of everything below about 300Hz and above about 3kHz (leaving us with the approximate bandwidth of a telephone signal). You could use steep high- and low-pass filters, but we've used Voxengo's Curve EQ to similar effect.



4 > PSP Audioware's MixSaturator2 helps us put a bit of smoothness back into our now very thin vocal. Engage the **Low** processor, with its frequency set to **500Hz** (it doesn't go any higher) and **15% Warmth**. Some saturation might work too.



5 > We send the output of this heavy effects chain to an auxiliary reverb set to 100% wet. We only need the early reflections turned on for this trick – turn the reverb time down to minimum and make sure there's no pre-delay.



6 > Next on the send effects chain, use an eighth-note ping-pong delay, again 100% wet. This bounces the sound of the early reverb reflections from left to right. Mix this in gently with the dry signal on the main vocal channel.

Four great vocal mangling plug-ins



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Taking a modern, unique approach to twisting up audio using spectral processing, this modular effect is capable of totally transforming a voice into an almost unlimited surfeit of mangled derivative oddities – all from a beautifully clear interface. Add some funk to your vocal or make it unrecognisable. www.littleindian.com



Antares Mutator Evo (from AVOX Evo bundle) **\$499**

From the creators of Auto-Tune comes Mutator Evo (only available as part of the excellent AVOX Evo bundle). The concept is simple in theory: adjust the throat length and width to redesign the voice of an already recorded vocal part, pitchshift it, or disfigure it with the unique Mutate and Alienize tools. www.antarestech.com



Sugar Bytes Artillery 2 **€149**

AKA 'The Effect Keyboard', Artillery is deployed by triggering pre-programmed effects via MIDI notes from a controller or sequencer. Chop, vocode and rearrange vocals, scratch them in and phase everything at once. Check out the free CM Edition in the **cm** Studio on the coverdisc to get a taste of what it's all about. www.sugar-bytes.de



Loomer Sequent **£57.58**

Sequent is another multi-effects processor with modular routing. Produce unpredictable new versions of vocal phrases in a paradoxical 'controlled chaos' fashion. Distort and filter your vocal part, intentionally wreck it beyond reason, then fashion what remains into ear-catching new patterns. If your vocalist can already do this live, advise medical attention. www.loomer.co.uk

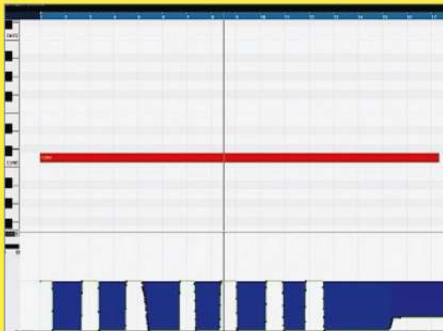
> Step by step Timestretching mayhem!



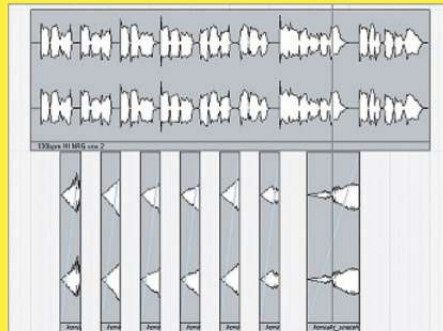
- 1 > We need a sampler that can timestretch samples without affecting their pitch, so we're using Kontakt in **Time Machine** mode. Load your vocal and, if need be, go into the sample editor and adjust the sample start time so that it immediately responds to MIDI triggering, with no hesitation.



- 2 > For a really cool vocal sound, use a large **Grain** size. We've gone for the full **100ms**. Now add **Pitch Bend** as a **Mod** source, setting its depth to **100%** and targeting the **Speed** parameter. This will enable us to slow down and speed up the sample using the keyboard's pitch wheel.



- 3 > Program MIDI notes for each of the vocal phrases you've loaded in and modulate the pitchbend to change the speed over time. Sudden jumps work nicely, but so do gradual changes. You can do this in a MIDI editor or live, using your MIDI controller.



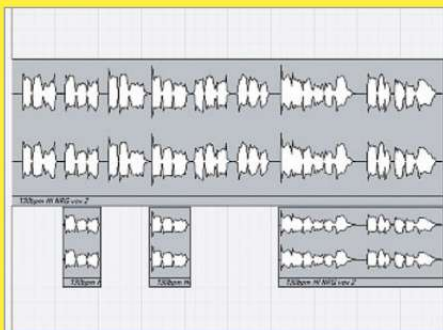
- 4 > Bounce the timestretching vocal as a audio file, then re-import it on an audio track next to the dry vocal. Cut out the stretched sections and arrange them so that they fill the gaps in the main vocal part. Fade them in as shown here.

Intelligibility

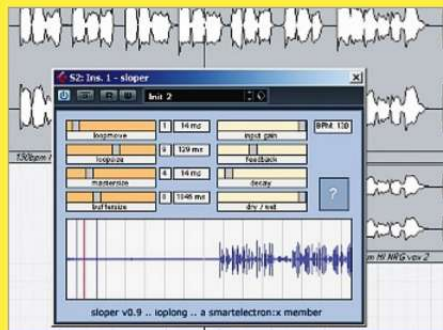
With all this phasing and stretching, tearing and bouncing, there may come a point at which you're forced to reconsider the actual role of your processed vocal. In some cases you might conclude that it's better if it doesn't bare any resemblance to its original counterpart, even if that means it's no longer recognisable as speech.

On the other hand, clear, intelligible words might be extremely important to the track/recording, so it's down to you to make some tough decisions. Sometimes you might need to choose whether or not to push the processing so far that the listener won't be able to understand the words. Other times you might prefer to figure out creative ways to fix the problem, through clever use of the dry vocal where necessary, or simply by rearranging the vocal part such that the full effect isn't used until the message has been clearly put across earlier in the recording. The big trap to avoid falling into is getting used to the effects and losing the perspective of a fresh set of ears. Try to imagine you've never heard the lyrics before and ask yourself honestly if you'd understand them if this was your first listen.

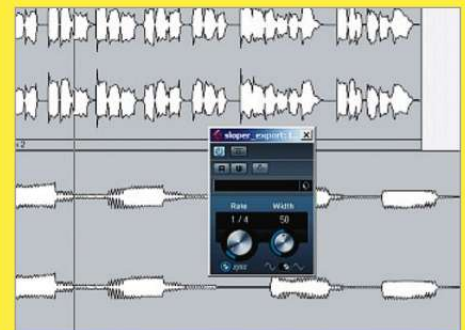
> Step by step Stutter insanity



- 1 > This is a fairly similar sound to the previous effect, but the differences in execution might well make it more useful in certain cases. Start with your dry vocal on an audio channel, and a sliced duplicate of that part with just the key phrases left in.



- 2 > We need a plug-in that automatically stutters audio. There are many out there and most of them are free. We're using Sloper by Ioplong (andreas.smartelectronix.com), which synchronises to tempo and lets you go into great detail with its parameters. We've upped the **buffer size** considerably to produce a glitchy sound.



- 3 > Bounce the results from the previous step and find the right spot for it to sit alongside the dry vocal. As an afterthought, you can use an auto-panner to add separation and improve the intelligibility (if that's what you're after) of the vocal part.

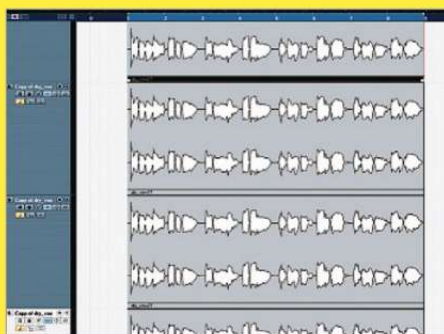
Building FX chains

When in search of that elusive vocal process that's going to sound out of this world and light up your song, there's a plenty of fuel for your creativity beyond the regular plug-ins that are designed for such jobs. If you really want to come up with something that's never been heard before, one way is to get creative with the order and settings of regular day-to-day effects in a sort of blind experimental adventure. In fact, the originators of some of the wildest vocal effects have credited their discoveries to a "happy accident" or two during the production process.

That said, there's probably no better way to increase your chance of discovering a new and useful effect than to recklessly chain and reorder plug-ins together, with a total disregard for what you think may or may not work. First, think about send effects. These days, most DAWs will let you set up an auxiliary bus for a reverb or chorus effect (for example) and then insert further plug-ins into that send channel. With that in mind, you might gate a reverb, or treat the wet signal of a chorus to a spot of auto-panning - but why be so predictable? Try more aggressive chains. You could distort a reverb and sweep it up and down with a resonant high-pass filter. This might not sound completely off-the-wall by itself, but it's the combination of such chains that makes all of the difference. For instance, you could group wet and dry signals into one buss and compress the lot. Maybe after that, a touch of automated ring modulation would be enough to create the otherworldly textures you're after.

These are just examples, of course. The real magic can only happen when you have the track you're working on in front of you and are listening to the lacklustre vocal part in question.

> Step by step The meta process



1 > For our finale we're going to mix and match the results from three different plug-ins, each one a tad more unhinged than the last, to create an almighty monster of a sound. To achieve this, we'll need four copies of OUR vocal. That's one dry and three duplicates to process.



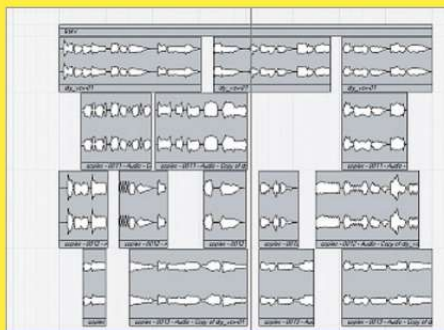
2 > First, solo the first duplicate and insert a SupaTrigga (bram.smartelectronix.com) plug-in on its audio channel. As soon as you load it up, it cycles through a random mish-mash of glitches and new permutations, with lots of stuttering and the occasional slowdown.



3 > Next, solo the second duplicate channel and insert Illformed Glitch (www.illformed.org). In a similar way to SupaTrigga, Glitch will microwave, rinse cycle and tumble dry your audio (metaphorically speaking, of course) into a random, schizophrenic sequence. It'll spin it up, spew it back out and then feed it to your sequencer.



4 > Continuing the process on the third duplicate channel, we add Sugar Bytes Effectrix, which is capable of creating many layers of nutter effects at once. Scrolling through the presets, we come across **DB Demo**, which suits our purposes nicely.



5 > After all that mayhem, we export each of the duplicate channels and re-import them as audio parts (Cubase 5's batch export comes in handy here). Now, with everything playing back, we cut out anything that doesn't seem to work.



6 > Finally, mix the levels of all four channels (remembering to include the dry vocal at the end). You might even want to use a little panning to give the composite a little extra dimension. Bus all four channels together and whack a compressor over the lot to even out the dynamics. Ker-frikkin'-razy! **cm**

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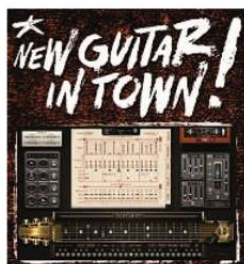
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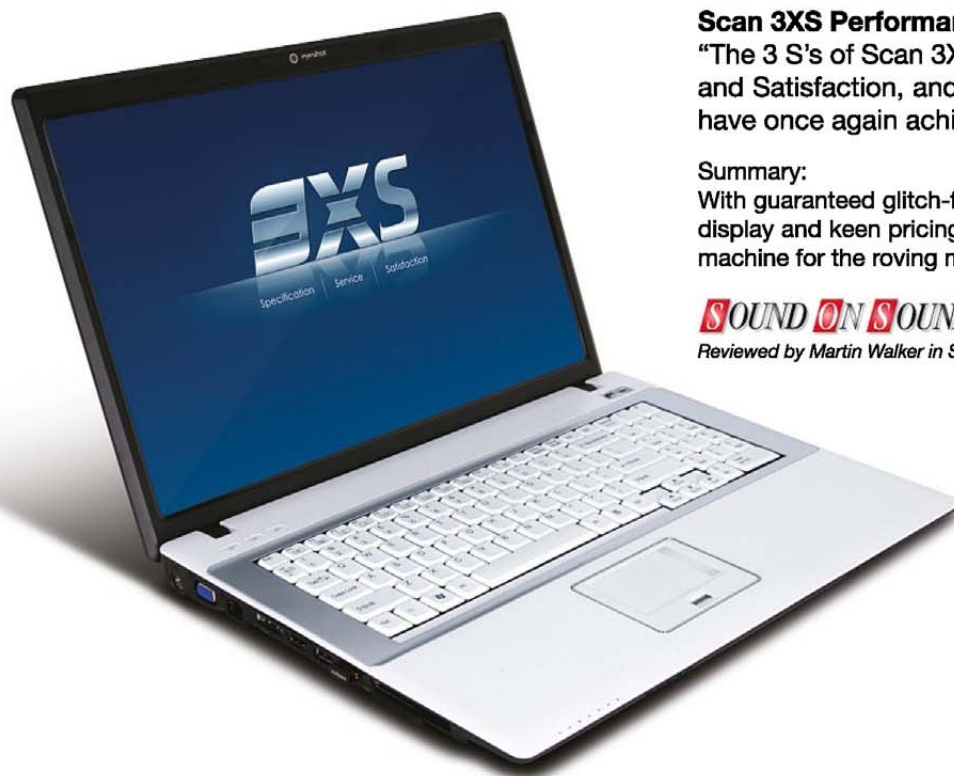


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