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welcome

This month, we're temporarily putting our soft synths back in their virtual boxes and cracking out the real instruments, with our complete guide to producing an acoustic band.

Now, you might assume that such an endeavour calls for hundreds if not thousands of pounds worth of mics, an acoustically perfect

"All the advice you need, no matter how big or small your budget"

recording space, a hardware mixing desk and all the rest of it. Not so! It's perfectly possible to make high-quality recordings and mixes of even the most sensitive acoustic material in the comfort of your

own home, using just a few affordable microphones, some improvised acoustic treatment (ie, duvets) and your Mac- or PC-hosted DAW. No matter how big or small your budget, our *Unplugged!* feature gives you all the information and advice you need.

Elsewhere, we've got plenty of action for the more 'electronic' producer, including tutorials on programming Korg's incredible iMS-20 synth, using a quintet of mad free plug-ins, making UK garage, and working with this month's exclusive free Loopmasters samples, the latter penned by none other than tech house guru Dom Kane. That'll be something for everyone, then!

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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cm/inbox



Fire your opinion our editor's way - email cminbox@futurenet.co.uk

Message of the month

I've just finished a track that used nothing but sounds made on my iPhone, recorded into Cubase on my PC for arranging, mixing and mastering. The experience was fun and interesting, and it got me thinking about what the future holds for computerised music production.

The music industry has been turned upside down by computer technology, from making the music to buying it, and now the PC industry is being challenged by mobile devices - *phones*, for Pete's sake! I'm not saying that it's possible yet to produce complete tracks on an iPhone to the same standard

that you can on a PC, but the day is coming when you will be able to do so, and only a fool would doubt it.

I for one look forward to the day when I can head down to the beach, plug a pair of headphones into my iPhone and use a

touchscreen version of Cubase - complete with effects, synths and samplers - to produce and mix a fully professional-sounding track from start to finish, ready to be exported directly from my iPhone to SoundCloud.

I'm very glad you've seen this potential too, and are taking mobile music-making seriously in the pages of **cm**. It's the future!

Ed Taylor, Brighton

I don't think desktop and laptop computers will ever be rendered completely obsolete by phones and tablets for serious music production, for many reasons - ergonomics, connectivity, screen size, etc. Clearly, though, they already qualify as incredibly useful music production tools, serving an array of purposes in the studio and making for an increasingly capable means of getting ideas, compositional 'skeletons' and even finished parts/tracks down on the go.

Ownership of an iOS or Android device is by no means essential for the computer musician yet, but it does open the doors to a fascinating array of powerful touch-controlled music apps, running on a platform that makes even the lightest laptop feel positively elephantine. Turn to p73 if you're not convinced. **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



Hole in one

The latest **cm** Freeware Special has proven to be a typically essential purchase, full of must-try bits of software all very much geared to stimulating creativity. In particular, the R.I.P. synth sounds fantastic, though its GUI worries me - it effectively reads "Computer Music R.I.P.!". I hope that's not an unpleasant foretaste of the future!

Moving on (and here's to many more years of **cm**!), one of the most difficult aspects of mixing for me (and others, I'm sure) is the idea of 'carving a hole' in the mix for a vocal or other sounds. On pro mixes, everything seems totally clear of everything else - there is no one sound stepping on another's aural 'toes'. I recently heard a massive wall-of-sound



Our recent 99 Free Plug-inscm Special featured the exclusive R.I.P. synth by Krakli and is still available at www.myfavouriteitemagazines.com

guitar track, yet in the centre the hole for the vocal was so sharply defined you could almost see it! Despite being surrounded by a racket, every nuance and little slapback echo on the vocal was clearly audible.

This is one aspect of music making that continues to elude me. Do I boost the most prominent frequency band of the vocal and cut the same on everything else? A feature on this with lots of audio samples would be greatly appreciated.

Daniel Paulo, Burnley

Funnily enough, the next **Computer Music Special** is all about recording, mixing, processing and generally working with vocals, and the subject you're asking about will certainly be covered. It

goes on sale on February 23, so look out for it in all the usual places. **RM**

Sample of joy

I just couldn't wait to share this with you and my fellow readers. As a subscriber to **cm**, I have always been impressed by and indebted to you for the tips and freebies that you supply. Well, no doubt you'll soon be covering IK Multimedia's fantastic SampleTank 2.5. I've just downloaded the Free version and it really is great.

I'm sure I'm not alone in my willingness to hunt for new sounds to inspire my creativity. To this end, the presets included with the free version were like missing jigsaw pieces lost down the sofa! The quality and depth



We featured SampleTank 2.5 in last issue's *Freeware News*, and were just as impressed as Gary by the ROMpler's extended library of top-class sounds

of sound were surprisingly generous, in my opinion.

Keep up the excellent work, **cm** – you've provided me with many tools to make my compositions more credible, and for that I am truly grateful.

Gary Todd, Bradford

SampleTank 2.5 has actually been around since 2007, despite the "New 2.5 Version" flashes on the IK website, but SampleTank Free has only just been upgraded to 2.5, which is indeed great news. It featured in *Freeware News* last month and is, as you rightly say, a very impressive freebie indeed. **RM**

Keen to compress

I've been getting into computer-based music production for the past nine months or so and have been a **cm** subscriber for the past

"Not covering these genres would be to ignore a big part of today's electronic music scene"

six. I can honestly say that this is one of the most rewarding and satisfying hobbies I've ever had. My only regret is that I never got into it sooner!

I find your magazine most informative (even though a lot of it goes over my newbie head), but one thing I would really like to grasp the concept of is compression. I understand the basic theory of it (ie, threshold, ratio, attack, release) and what it's supposed to achieve, and I have used it in a lot of my compositions, but I really don't know whether I'm using it correctly. Having only been a reader of your magazine for a

while, I was wondering whether you could point me in the direction of one of your back issues that had a beginners' guide to this essential production technique. Or better still, publish another one! Anyway, keep up the good work with the mag!

Stewart Dutton, Stourbridge

Compression is a topic that comes up regularly in **cm**, as it's such a production staple. It also features in our *Beginners' Guide to Effects*, which is in the **CM Beginners** folder on the DVD every month. However, you say you understand the controls on your compressor and like the sounds it's making, so it sounds to me like you're already doing it right! **RM**

Psy matters

I have been a subscriber since 2005, and as much as I have enjoyed every single issue, I still ache for something like what was in **cm156**: Goa trance!

I have seen that a lot of people all over the place – from online forums to chat centres and even friends – would really love to see psytrance in the mag. It would be awesome if you could cover the main subgenres of psytrance, starting at the roots (as you already did) with Goa trance, moving to full-on trance, then to progressive psytrance and going all the way to dark psytrance.

Not covering these incredible genres would be to ignore a big part of today's electronic music scene. In my opinion, everyone would gain a great deal of knowledge in many regards from psytrance, which is why I ask you to include it in the mag.

Javier Mayora, Guatemala City, Guatemala

A comprehensive guide to trance production, you say? Watch this space... RM

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www.demogod.co.uk

cm/news

NEW RELEASES > COMMENT > INDUSTRY HAPPENINGS

Synth central

This month sees a pair of impressive-looking new synth plug-ins bursting onto the scene

> We've found ourselves in the midst of a synth-spllosion this month. Out of the blue, Synapse Audio have returned to the scene with Dune. Described by the company as "a massively deep, versatile, high-quality instrument that takes subtractive synthesis to the next level", Dune's selling point is that it enables you to modulate each of its eight unison voices separately. Synapse Audio claim that this "greatly extends the range of possible sounds, reaching deep into FM and Wavetable synthesis". Both individual

voices and voice clusters can be modulated via the modulation matrix in order to create multilayered sounds and textures with complex morphing.

Dune is home to two oscillators, with a 'fat' knob for each capable of producing an additional seven detuned voices. As well as sawtooth, triangle and pulse waveforms, there are 69 further waveforms that can be modulated for wavetable effects. You'll also find three FM modes; a sub-oscillator; a noise generator with brightness control; a multimode filter with low-pass, band-pass,

band-stop, high-pass and combo types; three LFOs; a seven-mode arpeggiator; and legato mode with glide.

The synth's effects section features distortion, two EQs, phaser, flanger, chorus, delay and reverb. Synapse are keen to point out that Dune's engine can multiply all of the basic synth features by a factor of eight, making it possible to have 24 oscillators, with up to 120 per note in 'fat' mode.

Dune comes in VST and AU flavours for PC and Mac and will set you back £99.

www.synapse-audio.com



Treat each of Synapse Dune's eight unison voices separately for absolutely huge sounds

Berlin sound-manglers Cableguys' synth Curve was once a freeware offering, but its latest update sees it go commercial. First, the nuts and bolts: it offers three oscillators, three envelope generators, two filters and four LFOs. The write-home feature is its "irresistible" oscillator waveform editor, which should provide "completely new possibilities for experimentation and detailed tweaking". That was possible in the free version, too, but now you can draw LFO waveforms as well.

Whereas the gratis edition had only four modulation slots, Curve now sports a full modulation matrix. All parameters are automatable, too.

Curve's shared online preset library is rather novel. This community-driven effort enables users to add their presets to a database that all other users can access, making it "a constant source of inspirational sound".

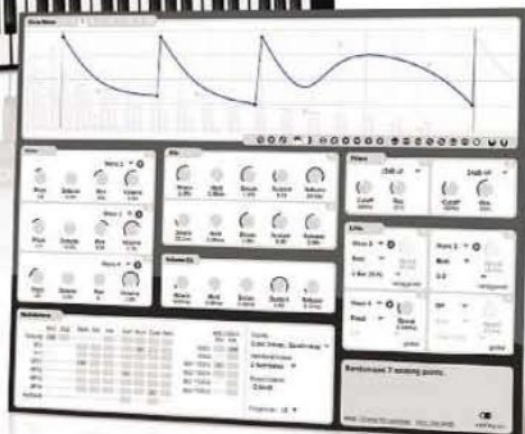
Curve is for Mac and PC, in AU and VST formats, costing \$159.

www.cableguys.de

Other recent synth releases of note include Tone2 ElectraX, Waldorf PGG Wave 3.V and Madrona Aalto, which we've reported on in previous issues. Join us next month, when we'll be looking in-depth at all three, as well as Dune, in what can only be described as a massive synth review blowout!

www.computermusic.co.uk

Cableguys Curve opens up its waveforms for you to edit, giving you the potential to wreak havoc



Reel convincing

Universal Audio release classic tape machine emulation

> Studer's A-800 24-track tape machine is classic hardware, but with this behemoth approaching the size, weight and appearance of a 1970s gas cooker, it's not something we'd want darkening the door of our oh-so-modern studios.

Good thing, then, that Universal Audio have released a software emulation. The officially endorsed Studer A800 plug-in "faithfully models the entire multitrack tape circuit path and electronics" of the original hardware, and UA claim that it's "the world's most accurate representation of professional analogue tape recording".

There are controls for the amount of harmonic saturation, tape speed (7.5, 15 or 30IPS), tape type (four options), calibration (four levels) and circuit path (Input, Sync, Repro and Thru). UA are bigging up the effect's Gang Controls setting as a "huge time-saver" - when enabled, it changes a parameter in all instances of the plug-in found in your project, so you can increase the input level on all A800s by the same amount, for instance. Secondary parameters, including "detailed tone-shaping controls", are hidden away behind the reel deck.

Combine that authentic tape sound with the versatility of digital using Universal Audio's Studer A800 plug-in

"The Studer A800 plug-in provides all of the original unit's desirable analogue sweetness"

Universal Audio

Studer A800 is available for UAD-2 DSP systems on both Mac OS X and Windows, and will set you back \$349.

www.uaudio.com



Mixdown



What's in store for computer music consumers? Our Deputy Editor contemplates

> Software pricing is a funny old game. Or perhaps I should say a funny new game, as things are now arguably less clear-cut than ever. Music software has always been a tricky case as prices can vary enormously within the same category of product. I'm very keen to see how the Mac App

"The Mac App Store could cause desktop software prices to crash"

Store (which should be live by the time you read this) fares. Apple have the knack for honing and subsequently popularising existing ideas (MP3 players, smartphones, tablet computers...), and if this new store makes the buying process as simple as with iTunes and the iOS App Store, it could create a whole new customer base.

With the iOS App Store, we've seen a 'race to the bottom', whereby rock bottom prices rule. Some have voiced concerns that this has warped our perception of the value of software and that the Mac App Store could cause desktop software prices to crash.

I'd imagine there might be uproar from existing users if titles they've invested hundreds of pounds in are suddenly available for a fraction of the cost. But this is business, and companies have to survive - if that's what they have to do to stay competitive, then so be it. For the kind of software that's 'collectible' rather than a one-off purchase (I'm thinking plug-ins here), it could make particular sense to exploit the malleable nature of an online app store's pricing. Sure, anyone who sells their software online can adjust the pricing as they please, but when you can do that within a dedicated marketplace, it can help to boost a product's popularity. Prices can be adapted to capitalise on trends, generate interest or for seasonal reasons. It could be just what the music software industry needs to drive sales and pull in new customers (and convert pirates, natch).

Some final food for thought: during a holiday sale at online games store Steam, knocking larger percentages off titles lead to even greater overall turnover due to the massively increased volume of sales. Read about it in detail at bit.ly/clC40R. Now, if one of the big-name DAWs was available for £50 for one weekend only, how many do you reckon they'd sell?

Wrap up warm

Get your tracks sizzling with audio tape plug-in Magnetic

> It might be chilly outside, but Nomad Factory reckon they've got just the thing to warm up your productions. Their newest product, named Magnetic, is an audio tape warming plug-in that claims to "inject sterile audio with the warmth and character of classic tube circuitry and analog tape saturation."

The effect is home to several tape-style features, including reel-to-reel speed adjustment (ranging from a cassette-esque crawl to speedier hi-fi settings), editable tape/tube saturation parameters, tape compression amount settings, a "vintage-style" EQ and a built-in limiter, Boost, that claims to "boost [your mix] to broadcast level". Nomad Factory bill Magnetic's results as "a creamy, warm sound". Sounds tasty!



If you want your tracks to sound like sonic hot chocolate, check out Magnetic

Magnetic is available for PC and Mac in AU, RTAS and VST formats, priced \$199.

nomadfactory.com



SSL's Nucleus is a three-part weapon for serious producers: it's a multi-DAW controller and audio interface that comes with an effects bundle included, too

Control issues

Control several DAWs, interface with your audio and more

> Hardware legends SSL are diving deeper into the computer music side of things with their new DAW controller and audio interface, Nucleus. Aimed at those who like to get hands-on, Nucleus can connect to up to three DAWs simultaneously, switching between them at the push of a button.

The compact desktop unit offers two banks of eight channels, with each providing 100mm faders, user-definable soft keys and V-Pots, dedicated Select/Solo/Cut buttons and 10-point channel level meters. These controls can be connected to both global DAW and plug-in parameters. A central DAW control section also provides transport buttons, a jog/shuttle wheel, bank/channel/layer selection, DAW parameter selection buttons, and loads more.

Nucleus is also an audio interface, with a stereo output, two XLR mic/line/instrument level inputs (with SSL SuperAnalogue mic pres), twin headphones outs, and digital I/O via S/PDIF. SSL have also included the Duende Native Essentials Bundle, making Nucleus something of a three-way smackdown. This bundle features the new native versions of the SSL Channel EQ & Dynamics and Stereo Bus Compressor plug-ins, which were previously only available via SSL's Duende DSP platform.

Nucleus is available for a hefty £3600, which SSL insist is "outstanding value". It works with PC or Mac, and the plug-ins come in AU, VST and RTAS formats.

www.solid-state-logic.com

Maschine 1.6 is near

> Native Instruments' hardware/software hybrid beatbox Maschine is soon to see an update to version 1.6. The big new feature this time around will be plug-in hosting for VST and AU instruments and effects, meaning that you can load your favourite plug-ins into Maschine and use them within the software. Elsewhere, there's an increased number of effect slots (three per sound, four per group/master), while the new Pad Link function will provide eight pad groups and a master/slave setting that's sure to delight the darkest of rhythmic deviants.

Those who like it funky will be glad of the addition of an individual Swing setting per sound, while clip naming, sample renaming improved scene duplication and reworked drag-and-drop functionality for samples, Maschine files and audio files aim to make working with the groovebox combo a more straightforward experience. In addition, the



Maschine 1.6 will be able to host VST and AU instruments and effects, as well as featuring more effect slots and the new Pad Link function

new version sees external audio I/O increased to 16 stereo channels.

NI reckon that Maschine 1.6 will surface in the first quarter of 2011 – so keep your ears to the ground.

www.native-instruments.com

Damaged



Chris Randall gets a shock as he returns to live performance after five years

> While I've done a couple of thousand shows in my career, I haven't played live in half a decade, despite being relatively prolific in the interim. The last two tours I did (in 2004 for Sister Machine Gun, and in 2005 for Micronaut) were both dismal, and it pretty much killed my desire to ever face a group of pasty-faced youngsters again – or at least, for a while. Yet lately I had been itching under my skin, in that way that can only be addressed by setting up a bit of kit in front of some people and performing.

As luck would have it, a club owner in Los Angeles that I have had a relationship with for years called, asking if I would play a Micronaut show on a day that I was itching. So, I accepted the offer, and settled down to build a performance from bare metal. Right then, I started to realise exactly how much technology has advanced in only five years.

"If you step back and look at even a short span of time, you'll be amazed at how far we've come"

In 05, using a DAW on stage was a risky proposition. Now, any modern laptop can be used, and all major DAWs are capable of running for an hour without crashing.

In 2005, I had to have a MIDI interface attached to the computer, and a fairly robust controller. Now, I'm using a Snyderphonics Manta as my main controller, which is a Human Interface Device that doesn't speak MIDI at all. In 2005, I had trouble controlling synths, because they were black panels in a rack. Now, I've got nice little desktop units that are covered in knobs.

In 2005, I could use maybe three or four plug-ins, total. In 2010, I can use several dozen with no perceptible strain. And that's only five years later. My point is thus: it may seem like things move pretty slow and we're always waiting for the New Hotness, but if you step back and look at even a short span of time, you'll be amazed at how far we've come. I wonder what a computer-based live rig will look like in 2015.

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



Overloud's new amp

Version 2 of the guitar amp sim is even more axe-tastic

TH2 features approved emulations of classic amps from Brunetti, THD and Roland



> Overloud have released a sequel to their TH1 guitar amp sim, cunningly titled TH2. There are 25 new amp channels, including manufacturer-approved emulations of Brunetti, THD and Randall models. The latter feature most prominently, and include models of rock guitar legend George Lynch's signature amp.

Providing tonal improvements across the board is an overhauled DSP engine that's said to give "a more dynamic simulation of the amplifiers". The new cabinet module uses v2 of Overloud's ReSPiRe cab/mic-modelling technology and provides rear and angled mics plus mixer. There are eight new cabs, too, bringing the total up to 29, and, as in the previous version, 18 mics in dynamic, ribbon and condenser flavours.

Among the 70 stompboxes, pedals and rack effects are five new ones. These include

official models of Brunetti's Taxi Drive (overdrive) and Mercury Box (distortion) pedals. There's also a new spring reverb module powered by Overloud's SpringAge technology (see p100). On the workflow front, the interface has been revised and there's a new preset management system.

Overloud TH2 is available for PC and Mac in AU, RTAS and VST formats, as well as standalone. It costs £199.

www.overloud.com

"TH2 delivers huge sound with flexible and intuitive control"

Overloud

Trackers & Demoscene



An amazing Wayfinder compilation podcast and the release of a sexy new tracker

> A long-time Buzz and Impulse Tracker user, German musician Sebastian 'Wayfinder' Grillmaier broke the mould when he created his fantastic soundtrack to Farbrausch's seminal *The Popular Demo*. The latest BitJam podcast #121, titled *Best of Wayfinder*, is a compilation of seven awesome pieces from the man himself. Pumping house beats feature heavily, but to try and sum this up in terms of genre would be tricky - it's far more complex than that. Download it at www.bitfellas.org/page.php?100.

"Pumping house beats feature heavily, but to try and sum this podcast up in terms of genre would be tricky"

There's always excitement when a new tracker comes along, and in the case of Pornotracker - a Windows tool for creating NES music - it's been more than four years in the making. Still, it's finally here, and although a fairly niche tool (NES music? Come on!), it's certainly a polished one, and the one demo song sounds truly great: www.bit.ly/gAI42J.

DEMO OF THE MONTH

Pulsatilla Vernalis

Gammel Opland af 1891

GO1891 are fresh arrivals on the scene and this, their first demo, is a superb start. Although stylistically *Pulsatilla Vernalis* appears to be a poor man's Andromeda Software Developments demo - right from the progressive rock soundtrack (which could do with a little work, particularly the out-of-tune vocals) to the visual style, lighting and effects - Gammel Opland af 1891 deserve huge credit, as this is their first foray into demoing. An encouraging sign of things to come - check it out on the **cm** DVD.



Pulsatilla Vernalis: a very impressive debut

cm Reason Special

> Calling all Reason users! Our brand-new **cm Special - Reason: The Expert Guide** - is your secret to making better tracks. Featuring 100% brand spanking new tutorials, the *Special* is stuffed with in-depth guides to Reason 5's top new features, masterclasses that'll get you working like a pro, and tips and tricks revealing the methods behind today's cutting-edge sounds. All that, plus an exclusive ReFill on the DVD!

If this sounds like your thing, don't delay - supplies are strictly limited. Turn to p88 for stockists and on sale dates, or buy one online at the website below.

www.computermusic.co.uk





Does copy protection work?

> In an ideal world, music software developers wouldn't need to use copy protection systems to combat piracy. Users would respect their rights, pay for the tools that they use, and everyone would be happy.

However, such a world doesn't exist, so developers naturally feel compelled to make life difficult for those who see it as a challenge to crack the latest music software and make it freely available online. Engaging in this battle can be costly and time-consuming, but ultimately, is it effective, and if not, how damaging is piracy to the software business?

These questions were brought into sharp focus recently when Slate Digital contacted their users to say that they were delaying the release of their (much anticipated) Virtual Console Collection specifically because of piracy. Slate

"Ultimately, is it effective, and if not, how damaging is piracy to the business?"

had been using iLok to protect their products, but having seen some of them cracked, they decided that they have no option but to switch to the new iLok 2.

"The audio industry's buying public doesn't seem to understand how a cracked version of a plug-in can damage sales," says company head

Steven Slate. "If we didn't take measures to stop further piracy, it would be difficult to maintain business knowing that future plug-in development and marketing costs might not be recouped."

Will these measures work, though? Slate seems pretty confident: "The previous iLok version went almost seven years with no problems, and the newer iLok technology is very intelligent. With the new iLok, I believe we will be able to develop exciting new plug-ins without having to worry about piracy."

We spoke to Pace, manufacturers of the iLok, and while they were understandably reluctant to tell us precisely how they've managed to make a more secure version of their product, they do feel that they've developed an improved system. "In short, iLok 2 provides more security but also will have additional features that benefit end users in the future," says Pace's Vice President of Business Development Andrew Kirk. "I cannot go into details, but the new iLok is a platform moving forward, much like the original iLok has been for ten years."

Looking back over that decade, does Kirk feel that the iLok has been successful in preventing music software piracy, then? "We have clear indication that over the last ten years the iLok has helped transform the pro audio software market," he says. "Our Macintosh solution was not cracked for eight years, while Windows crack cycles were limited to every 18-24 months."

"This year, some of our technology was

cracked, not the iLok but the software side. This happens. We've been working on a new security platform, and that's rolling out now. The new iLok isn't necessarily required but some vendors might choose to go iLok2-only. We will continue to add end user benefits and features for license management while offering easy-to-use scalable licensing platforms for software publishers."

Ditching the dongle

PSP Audioware are another company that have used iLok to protect their plug-ins (though only two PSP plug-ins have been iLok-only), but recently, they've gone back to their original serial authorisation system. We asked company head Antoni Ozynski to explain the reasoning behind this decision.

"We develop plug-ins in all native formats and we don't have TDM versions, so most of our users don't have an iLok and, more importantly, they don't want to have one," he says. "They asked us to un-iLok our Xenon limiter and we did it. We introduced a non-iLok version and some users without iLok bought it immediately, even though a cracked version was available. That is why I believe there is still a group of people who will pay for their tools and won't steal software."

This is heartening news and demonstrates that, when it comes to copy protection, the wishes of users can't be ignored. In a recent **cm** Facebook poll, some musicians said that they simply won't buy software that requires a dongle because of the inconvenience of having to have it plugged in all the time. Sure, our poll is pretty uninformed and far from definitive, but it's a viewpoint that we see time and time again on music technology forums across the web. While USB protection systems may help to prevent piracy, it seems they might also cost sales.

What are the alternatives, though? One man who's taken an inventive approach to protecting his software is u-he's Urs Heckmann. He uses a

serial number-based system with a difference: if you don't enter a legitimate one, the software may work properly for a while, but limitations will gradually start to appear, such as, er, the interface 'melting'...

"The idea is to unlock the demo limitations with only a partial check of the serial number when the software is started," explains Urs. "More parts of the serial number get checked later, and if the check fails, new 'demo limitations' come into place. Ideally, the late check happens only to people who use the software often (eg, have spent hundreds of hours with it) but not to crackers or people who just 'collect'.

"The primary goal is, of course, to turn warez [*cracked software*] users into legit customers. Someone who spent considerable time on a project using my software is quite likely to go legit if it's suddenly taken away from him. I do this in a nice and polite manner."

Targeting the heavy users of his plug-ins is smart, pragmatic thinking on Urs' part, but is it the case that he's been forced to take this novel approach simply because standard copy-protection systems don't work? Apparently not.

"Of course they can work. Crackers are not the mystical gods with unfathomable coding skills they're often said to be. They're only as good as the tools they use.

"After the initial success of the melting GUI, I started a collaboration with 60 other plug-in developers. We've analysed cracking tools and cracks and we've exchanged ideas. Thus everyone is refining their copy protection without reinventing the wheel over and over.

"Meanwhile, I get between two and five sales a month from people I can clearly identify as warez users. And that's just the ones who email."

Lower the Jolly Roger

Turning pirates into paying customers sounds like the perfect solution, but it's clear that there's still a long way to go, and that companies have differing ideas on how best to achieve this goal. What's more, the way in which software is bought and installed could be starting to change. Apple launch their Mac App Store in 2011, and developer guidelines for this state that "Apps that require license keys or implement their own copy protection will be rejected". We presume that there'll be some sort of proprietary Apple copy prevention scheme tied into all this. While it might not prove to be crack-proof, if it's bound into the roots of OS X itself (a bit like with iOS apps and its App Store), it could at least make using cracked software a lot more inconvenient.

The Mac App Store guidelines also state that "Apps must be self-contained, single application installation bundles, and cannot install code or resources in shared locations," which could initially rule out plug-ins anyway, but is Apple's copy protection stipulation a deal-breaker for devs? "We'll have to see what variables come into play," says Steven Slate. "If all the Mac apps get cracked, then developers will have to incorporate new ways of receiving revenue, such as advertising within the apps."

For now, though, music software developers rely very much on their sales revenue, so if you want the industry to continue as we know it, you need to give it your financial support. **cm**

Ins & outs

BIG SOFTIE

Some weeks ago, concept images of a new hardware synth design were doing the rounds on the web. Hardware's not our thing, but the exciting news is that u-he's Urs Heckmann is going to make a soft synth version, dubbed Tyrell N6. More info at bit.ly/dSJ9zz

HIS MASTER'S LOSS

Another month, another nail in the coffin of physical media. High-street retailer HMV have announced falling sales and greater losses, with CDs, DVDs and games all down about 10%.

GET YOURSELF KINECTED

Microsoft's Kinect has barely been out for a month as we write this, but it's already been bought by millions of touch-phobic gamers, and hacked to bits by conniving programmers. We're impressed with what the more musically-minded have been doing with it.

BLACK EYED THIEVES?

Popsters Black Eyed Peas have been called out by the likes of Deadmau5, Henry Wayne Casey (of K.C. and the Sunshine Band) and funkmeister George Clinton for the unacknowledged sampling of their tunes. George has even filed a lawsuit.

APPY DREAMS

We're loving the novel 'augmented sound' concept of the official *Inception* iPhone app. While it's not a music-making tool in any meaningful sense, it is a very clever use of music technology.

SOCIAL FAUX PAS

Once the site of choice for both social networking and music hosting, even MySpace's recent redesign isn't enough to tempt us back. We suggest that they ditch the (incredibly messy) social side and capitalise on the (still quite popular) music hosting aspects.



Busting jargon



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

The majority of audio effects are designed to bring out the best in a signal or transform it in a sonically pleasing way. The best results are generally had when the input signal is of high quality.

Sometimes we're lumbered with problematic audio signals, though. They might be contaminated with background hiss/noise, constant hum/buzz, or intermittent pops/crackles/clicks. These artifacts will be familiar to those who remember the bad old days of analogue, where hissing tape and crackling vinyl ruled! Clipping (distortion) can also ruin audio.

There are audio restoration tools designed specifically for these situations, generally in the form of separate processes for each issue, with names like denoiser, declicker, declipper and debuzzer. They're intended to reduce/remove unwanted elements, leaving just the 'clean' signal. While modern restoration tools can be scarily effective, sometimes the audio will be noticeably affected, particularly with more extreme cases.

Some restoration tools work as standalone software (eg, Adobe Audition 3), some are plug-ins (Sonnox

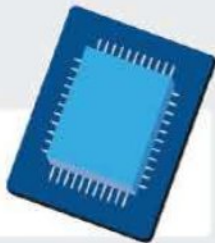
Restore), and some offer both in one package (iZotope RX2).

As well as the common types of noise (noise, hum, etc), unpredictable incidental sounds can contaminate a recording too, such as a creaky chair or passing car. Here, more general software needs to be used, often in the shape of a spectral editing tool - Audition 3, Photosounder and RX 2 all offer this facility. Some manual work is typically needed, but the results can be worth it.



The Denoiser plug-in from Sonnox's Restore suite is stunningly effective - as you'd expect, with the package weighing in at £1434!

System check



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



Microsoft Kinect: one to watch for performing music technologists

HACK TO THE FUTURE

If you're interested in non-conventional ways of interacting with your music software, you'll be excited to hear that hackers and musicians have already turned Microsoft's motion-sensing Kinect interface for Xbox 360 into a musical instrument controller.

Adafruit Industries, a New York-based DIY electronics kit retailer, offered a \$3000 bounty for the first coder to hack Kinect and create drivers for the hardware. The prize was quickly claimed by programmer Hector Martinand. Adafruit hosted the drivers on their site, and before long a video was released by software tinkerer Ben X Tan, demonstrating the MIDI capabilities of the device, using its motion-sensing ability to play a piano sound.

The most recent development is that PrimeSense, the firm behind the Kinect's camera sensor, have released open-source drivers for the device. You can find more details and the API download on the company's website. adafruit.com primesense.com

SHINY APP-Y PEOPLE

The app war is hotting up, and it looks like both Google and Apple are about to increase their potential markets.

Google's Chrome Web Store opened earlier this year, but its applications are currently only available to users running Google's Chrome browser. However, during the Add-On-Con 2010 convention, Google engineer Eric Kay revealed the possibility of "CRX-less" apps that can be installed into third-party browsers. There are no concrete plans afoot as yet, but we imagine Google will want to make their store as widely compatible as possible.

Meanwhile, the Mac App Store for desktop applications is set to launch imminently. While its arrival is a little controversial, with Apple taking a 30% cut of sales, it could well change the way Mac users buy software.

chrome.google.com/webstore
apple.com/mac/app-store/

NA-NO LIMITS

White suited boffins at the University of Maryland have unveiled a technology that uses a plant-eating virus to potentially increase the capacity of lithium-ion batteries ten-fold. The Tobacco mosaic virus is used to generate usable patterns of nanorods on the surface of metal electrodes, which vastly increases the energy capacity of the Li-ion batteries and also renders the bug inert.

More boffins, this time at Sandia National Laboratories' Centre for Integrated Nanotechnologies, used the tech to create the world's smallest battery. To be precise, they used a single tin dioxide nanowire as an anode, lithium cobalt dioxide as a cathode, with liquid electrolyte in-between. Sounds like a sort of science sandwich to us. umd.edu cint.lanl.gov

Get with the programmers

The co-founder of one of the most prestigious sample companies around talks shop



Sample Magic Sharooz Raoofi

cm How did Sample Magic get started?

SR We started in 2005. I'd previously done some sample collections for other developers, and saw that many of the dance libraries were way off the mark - they were badly produced and atrociously presented. There was a gap in the market for products that sounded authentic, were genre-specific and had great artwork, too. We initially produced all the collections ourselves, but quickly outgrew the workload and starting bringing in other producers, all of who are still with us today.

cm The market for sample downloads has exploded in recent years. How much of your business is downloads now?

SR The digital download market has exploded, and we'd like to think we were pioneers in the industry with the Sounds to Sample portal, which we founded in

2007. We still have a rapidly growing physical business, which continues to expand. With each release, our packaging and presentation aims to better the titles before it, to add value to the format. Our latest collection includes a feature film, a 24-page booklet and three discs!

cm What key elements make a great sample library?

SR As obvious as it seems, the quality of the sounds will always be foremost. Many artists are loathe to give away their best sounds or the tools of their trade. I respect that point of view, but I believe there is a lot to be gained by allowing other producers open access to your loops and samples. It reinvents genres and improves the loop creator's standing no end, in the same way as a big club track would.

cm Sample Magic doesn't provide emulations and samples from virtual instruments. Are the top-line examples still not as good as hardware, in your opinion?

SR There never will be any sensible comparison between virtual instruments and the real thing in my opinion. While there are some amazingly detailed orchestral and live instrument emulations around, I think that plug-ins and sample collections always work best if they aim to provide musical phrases or unique electronic timbres rather than emulate or multisample a real instrument. A dance drum loop has no hardware

equivalent, but a multisample of a grand piano will never sound as good as having access to the instrument itself.

cm You released the iPhone app Demogod. What gave you the idea for that? Do you have plans to do more with it in future?

SR Getting a demo into the right hands can still be a frustrating experience. We wanted to give these contacts away for next to nothing, so that the next generation of unsigned artists don't have to blag or borrow their way in!

cm What's next for Sample Magic? Will you be branching out into any different areas, eg, plug-ins? More iPhone apps? More books?

SR All of the above and more! Just as we sought to breathe fresh life into the sample industry, we will be branching out to do the same with another stagnant industry in 2011. You will all know more shortly!

"We will be branching out to breath life into a stagnant industry"

Back to bass-ics

> Studio Devil have got the horn for bass guitars, and they've taken it out on their new product, Virtual Bass Amp Pro. This tube bass amp sim is billed as a "breakthrough in vacuum-tube modelling technology", and Studio Devil claim that it produces a "rich, simple and inspiring" bass guitar tone.

VBA Pro has a split-channel architecture. Each channel has its own tube gain stage, tone network, compressor and limiter. VBA Pro can split the signal sent through these channels in two different ways: Normal mode feeds the same signal to both channels, while Bi-amp mode sends high frequencies to one and low frequencies to the other. You can also invert the phase of the second signal if you like, for "advanced control of harmonics, dynamics and tone."

"The dynamic gain structure reacts to your fingers and picking style, allowing expressive playing"

Studio Devil



VBA Pro enables you to send your bass guitar signal through two channels simultaneously, which are then processed separately and mixed as you like

An A/B mix slider enables you to keep control of how much of each channel you hear. If you prefer to keep things simple, you can disable either one of the channels at any point.

Whether you use one channel or two, the resulting signal is then fed through a number of optional processes, including compressors, limiters, a graphic EQ, three cabinets from the "highly acclaimed" Red Wirez library (all based on recordings of real-life 1x15, 4x10 and 8x10 models), and chorus and reverb effects.

Virtual Bass Amp Pro works with both Windows and OS X, and is available in VST, AU and RTAS formats. It costs \$99.

www.studiodevil.com

Soundware news

> Get the dancefloor bouncing with the beats, basslines, synth loops, vox lines, drum hits and synth one-shots of Samplestar's **Nu Elektrik**

(£24). The 24-bit sample bundle is billed as "a seamless fusion of French electro, Italo and indie disco".

Described as a "sledgehammer" of a collection, Best Service's **Production Tools Vol 1** (£59) mammoth bundle pack aims to knock electro, tech house and progressive producers "clean off their feet". It contains 3000+ loops, one-shots, instrument/synth presets and MIDI files across a whopping 35 construction kits.

In a slightly different vein is Crate Digger's **Cylinder Vocals: Singing & Operatics** (£15), which is chocka with 280MB+ of sung one-shots featuring choirs, quartets, musical topics and soprano/tenor operatics "laden with very old-school (early 1900s) flavours".

Roll with the rude boys using DigiNoiz's **West Coast Wave 2** (£13) as your palette - it's crammed with five "bright 'n' breezy" hip-hop construction kits.

www.soundstosample.com



Dance label Toolroom Records have teamed up with Sample Magic for **Toolroom Records Samples 01** (£40). The pack contains 535MB of loops and hits, including some from the collection of label bigwig Mark Knight.

www.samplemagic.com

Mess up your productions with **Clicks and Glitches Vol 1** (£11), which is filled with 553MB of "unobtrusive but not ordinary sounds that provide that certain dirt".

EarthMovements' **Electro Folk India** (£25) contains live recordings of India's various folk instruments, making up a "boutique" sound library of 176 loops.

Aiming to fill all your percussive needs, MIDI Focus' **Prog Tech Beats** (£20) pack of "sublime tech beats" contains 138 drum samples, 186 MIDI loops, 28 WAV loops and ten drum kits.

If you're after heavy-duty, "guerrilla" beats and breaks, check out Prime Loops' **Dubcore Assault** (£13), comprising 70 "armour-piercing" files.

www.loopmasters.com



News in brief

KEEPING THINGS SIMPLE

Kuassa have only just released their first commercial offering, Amplifikation One (see p106), but they've got no plans to sit back and relax. Their second product is Amplifikation Creme, and instead of featuring mix-and-match amps and cabinets like its predecessor, it features just one amp with three channels. It's also primarily aimed at heavy metal-heads. Find Amplifikation Creme online for \$34. www.kuassa.com



ONE TO WATCH?

Hit 'n' Mix is a software package that claims to strip a full mixed audio file into its component elements: guitar, voice, drums, etc. After the individual elements have been retrieved, you can edit the pitch and duration of the notes, and add effects like vibrato, slide, harmony and pitch quantisation. It's Windows-only and costs £80, and with a Lite version available to download for free, Hit 'n' Mix certainly sounds like something that curious creatives might want to take a look at. www.hitnmix.com



BACK FROM THE DEAD

Respected old-timers Sonic Timeworks have bounced back into business. Seemingly inactive on the development front for the best part of a decade, the company have suddenly announced that their classic Equalizer V1 plug-in is available in VST and AU formats for PC and Mac. This is great news, and we look forward to seeing what else they pull out of their hat - how about VST/AU editions of the 4080L reverb effect or Phaser Model 88? Equalizer V1 is available for \$99 (for a limited period). www.sonictimeworks.com

COMPETITION WINNERS

cm159's competition gave readers the chance to win three mind-blowingly good Vengeance-Sound plug-ins: Multiband Sidechain, Multiband Compressor and Metrum. The lucky trio of winners are: Alan Paget, Neil Dube and Ed Smith. Well done, fellers!

Now flip feverishly to p93 for your chance to win FXpansion Geist and DCAM: Synth Squad!



DJ the virtual way with Algoriddim djay – and for those times when you'd rather relax than spin some tunes, take advantage of its Automix playlist function

App watch

New music-making apps for iPhone/iPod Touch

> Deck deviants will be interested in Algoriddim's new DJ app. djay is the iPad version of the company's desktop software of the same name, and it "transforms your iPad into a fully fledged DJ system", integrating with your iPod library to give you access to all your tunes.

The interface is a "hyper-realistic" touch turntable that features super-low latency to offer "a true professional mixing experience". djay features recording functionality and an Automix mode that will "magically" mix one of your playlists. The app also enables you to transmit your mix wirelessly to Apple TV or Airport Express while in Automix mode. Mix controls including pre-cueing, BPM analysis with automatic beatmatching, waveform view with beat-synchronised scrubbing and high-quality scratching functionality, and mix, tempo, EQ and pitchbend controls are also onboard.

djay is available for the iPad only and costs £11.99 in the App Store.

www.algoriddim.com

Also exclusively for the iPad is Portastudio by Tascam. A recording app based on the classic 80s Porta One hardware, Portastudio



Pretend you're back in the 80s with Tascam's vintage recording app, Portastudio

can handle up to four tracks "with a vintage vibe". Each track must be recorded one at a time, using the iPad's built-in mic or a headset mic connection. Recordings are monitored on authentic VU meters, and a cassette transport with position counter tracks the position while you mix, with controls including level, pan and EQ. The final product is saved as a CD-quality WAV file that appears in iTunes when your iPad is connected to your Mac or PC.

Grab Portastudio for your iPad for £5.99.

www.tascam.com



Game overture

The sounds of two hugely popular games with very similar names

> First up, it's time for us to give some long-overdue props to Blizzard for the fantastically intricate soundtrack to their strategic opus *Starcraft 2*.

While many games that use multiple composers often end up sounding somewhat inconsistent, here Blizzard's choices of Glenn Stafford, Derek Duke and Neal Acree lend a unique flavour to each of the game's three races. The twanging guitar of Terran, rhythmic percussion of Zerg and ethereal synths of Protoss are effective contrasts and theme the game perfectly. Opting for traditional linear rather than dynamic music comprised of shifting mixes, the pieces are kept completely intact, leaving you able to enjoy them in their entirety while you're busy maxing out your army.

Next, the inimitable *Minecraft* – the indie title that's soared to mainstream success

"The twanging guitar of Terran, rhythmic percussion of Zerg and ethereal synths of Protoss are effective contrasts"

with over 700,000 copies sold at the time of writing. In an interview with *Keyboard and Mouse*, composer C418 described the motivation behind its sparse and intriguing soundtrack, and his unusual route into composing:

"One day, a couple friends of mine had a contest about making the worst song possible. I won the contest by just making noise with every MP3 I had on my computer. Well, eventually I figured out that music can sound good when I try to do some... I simply never stopped making stuff."

So, there you go, folks: just make horrible noises and fame will follow!



Starcraft 2's soundtrack was written by three musicians, giving each of the game's three races its own characteristic sonic flavour

COMPUTER music 10 years back

We backtrack to March 2001, a time when trackers ruled and MP3s were cutting edge

> Our cover feature for **cm31** tackled trackers, detailing their beginnings on the Commodore Amiga and eventual transition to PC platforms. Featured trackers included Jeskola Buzz, ModPlug Tracker and Psycle, all of which are still knocking about in some form or another. In fact, the tracker landscape hasn't changed enormously over the past decade, the big exception being the release of Renoise, which broke with tracker tradition by being a commercial app (or you could say it returned to tracking's roots, as the original Ultimate Soundtracker was at

"Steinberg's Houston was billed by us as the company's 'most exciting future release'"

first a commercial release).

Elsewhere, our *How to use MP3* was stuffed with now-quaint gems. Those were the days when you could make cash from **www.mp3.com** downloads - no sales necessary! If you got enough clicks, you'd get a cheque in the post.

Our *News* section, meanwhile, got the scoop on several now-classics, including Celemony Melodyne and NI Battery. We also had a preview piece on Cakewalk's then-new sequencer Sonar. Destined for somewhat less in the way of longevity, Steinberg's Houston controller was billed by us as the company's "most exciting future release". "Houston: There's no problem", we quipped. Sadly, once it made it to market, there were nothing *but* problems for Houston, and it turned out to be a fantastical flop. Shame.



Start tracking across the universe! That was the idea behind **cm31**'s tracker-centric cover feature



Drive time

Karoshi

Twisted electronic pop duo Karoshi reveal the software that's been rocking their studio

AVID PRO TOOLS|HD

"Mind-meltingly powerful software powered by a stack of three HD cards. Having the cards taking the load means we can still use our crusty old G5 that now strains a bit when apps are all host-based. The software is the real deal, very basic and extremely intuitive. People always used to beef on about how poor the MIDI was, but we always found it as easy and tight as the other big-name DAWs out there. For audio editing there is no equal."

MASSEY PLUGINS|THC

"We're not shy about slamming beautifully recorded audio through distortion, but it wasn't until THC came along that we could actually get decent-sounding overdriven sounds without it coming out all mushy. It's also a proper indie plug-in, created solely by that clever bloke Steven Massey, which is a refreshing change amongst all the other big-name plugs."

VSL ORCHESTRAL LIBRARIES

"Absolutely stunning sounds from the best in orchestral samples. The option to layer up instruments and switch styles at a flick of a MIDI note number means that you can work up nice passages of music very quickly, without the fuss. Really handy for those 'softer' moments. It's nice to have minimal

reverb on the patches, so you can add your own, unlike some other libraries where you get stuck with the factory verb, lost in some massive hall."

ABLETON LIVE

"This has totally transformed our live show. We managed to sectionalise our songs so that we can extend verses, choruses and other parts of the tracks. That way we can

"Ableton Live is a fluid, controllable and variable live system"

change things on the fly. We also decided to split the tracks up in stems, so that we can have more control over volumes, mutes and sends. The ability to trigger any of the song section clips (and any other functions you can possibly think of!) via MIDI means that we can remotely control the lot via drum pads. It's also great to use Roland drum triggers scattered round the stage for one-off samples. We call it Liquid Live! It is a totally fluid, controllable and variable live system with a computer as the brain. We use it for DJing, too, along with the CDJs."

Karoshi's new single, *Not Sitting*, is out now on Suitcase Records
www.karoshimusic.com

TAL-Filter-II

The latest release from the prolific Togu Audio Line takes their original straightforward filter effect in an exciting new direction

Developer **Togu Audio Line**
Format **PC VST, Mac AU/VST**
Web **kunz.corrupt.ch**

The original TAL-Filter from Togu Audio Line was a straight up multimode filter effect with a couple of useful if not exactly groundbreaking touches, namely MIDI-triggerable LFO and envelope follower-based modulation capabilities, and an Input Drive knob for getting a warm and dirty sound. Not a bad feature-set, but most DAWs have similarly decent built-in filter effects, and TAL-Filter had a limited collection of filter modes: just basic low-pass, high-pass and band-pass types.

Now, Togu Audio Line have released a new version of TAL-Filter, including a number of features from their excellent TAL-NoiseMaker synth, which was released earlier this year. Upon loading the plug-in for the first time, the most immediately obvious change is that the interface has been completely redesigned: the frankly hideous red and grey tones of the original version are gone, and the interface is now dominated by a large, flexible envelope display, like the one in TAL-NoiseMaker. The number of controls on the interface has been reduced and the new envelope is fundamental to the filter's functionality: you won't find any LFO or envelope follower controls, or even a cutoff knob - absolutely everything is now controlled by the envelope.

This is a little disconcerting if you just want to knock out a quick filter sweep (though this is possible - see boxout for details), and there doesn't appear to be any way to replicate the original version's envelope-following functionality, but the envelope itself offers a sophisticated and flexible way to create simple

It seems possible to add a practically unlimited number of nodes, for very complex filter patterns



The super-flexible envelope editor is the star of TAL-Filter II, lifting it far above simpler filter plug-ins

or complex filter movements. Using it is easy: click the envelope editor and a new node will appear, which can be freely dragged around. Each node has two curve points, which can also be dragged to change how steep the curve is on either side of the node. This makes it possible to really fine-tune the character of your filter movement, and it seems possible to add a practically unlimited number of nodes, allowing for some very complex filter patterns indeed.

The resolution envelope ranges from one bar to 1/32, and there are seven different filter modes available, including 6, 12, 18 and 24dB low-pass modes, 12dB high-pass and band-pass, plus notch mode. It's also possible to use the envelope to modulate the channel's volume and pan position, making it more than just a filter. The fact that you can use the effect to program your own rhythmic volume changes alone makes it a must-download, and the wealth of filter modes is a vast improvement over the relatively sparse choice offered by the original version. The one change we'd like to see is the ability to 'snap' envelope points to the grid, but even without that option, TAL-Filter-II is a fantastic and flexible tool that you should get your hands on without hesitation. **cm**

FREE ADVICE

AUTOMATION AND DUCKING

TAL-Filter-II might not have a cutoff knob, but you can still use it to create a quick automated sweep. Place the plug-in on a track, and drag one of the points on either side of the envelope down as far as it will go. This turns the filter level down as much as possible, and you can now change the cutoff frequency by automating the Depth knob.

Another useful technique you can use with TAL-Filter-II is volume ducking. Set the envelope to volume mode and draw in a curve that ducks the level of the signal to a certain rhythm, say, in time with the kick. This works much like sidechain compression, but without any complex routing and with the advantage of giving you extremely fine control over the shape of the volume curve.

Crystal tip

In a surprise move, Greenoak have updated their super soft synth Crystal for the first time since 2006! Crystal is one of the most feature-packed freebies around, featuring powerful multipoint envelopes, sample playback, FM synthesis and tons more. It's now 64-bit compatible on both Windows and OS X, and this update paves the way for the iOS version, which should be on the App Store by the time you read this, although presumably not for free. www.greenoak.com

iAm excited

In order to promote iAm-MS20 (see p111), sample-wrangers GoldBaby have released iAmDrum-MS20-free. This freeware sample pack exploits the Korg MS-20's ability to accept external audio inputs and use them to drive pretty much anything, resulting in some crazy filtered drum sounds and glitchy FX noises. 182 samples are included, along with patches for Kontakt and EXS24. You can find the link to the pack on GoldBaby's blog, goldbabysamples.blogspot.com. www.goldbaby.co.nz

Xhip it

Remember funky freeware synth Xhip by Aciddose? It's been around for years and has loads of exciting sound-sculpting capabilities, but still hasn't quite reached version 1.0 yet. However, Aciddose have released the instrument's effects as a separate suite. Xhip Effects v1.0 includes Clipper, Compressor, Gate, Limiter, mDelay (modulated delay), Phaser, Quantiser (time and volume quantisation for glitch effects), Reverb, Ringmod and Tremolo. All are in VST format for PC. xhip.presetexchange.com

Verb's the word

PSP Audiware's now-vintage PianoVerb has been rereleased and is now available for Intel Mac for the first time. It simulates the reverberation created by piano strings using 12 operators with adjustable damping level and decay time. You can also transpose over a range of two octaves, fine-tune and detune the reverb. Effects range from big, resonant room sounds to brighter harp-style effects. It's available now in PC VST/RTAS and Mac AU/VST/RTAS formats. www.pspaudiware.com

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Alesis ProTrack

Portable iPod recorder

records stereo audio directly to your iPod Classic (Gen 5/6/7), iPod Nano (Gen 2/3), iPod Touch (2nd Gen) or iPhone (only 3G/3GS and only with optional shell), 2 combo ins, 3.5mm mini jack headphone out, 48V phantom power, 16bit/44.1kHz/22kHz, onboard stereo condenser mics (XY configuration), switchable limiter, operation via 4x AAA batteries or AC adapter (included). **€ 58.-** **€ 49.-**
o. code 226585

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Mobile digital audio recorder

24bit/96kHz linear PCM, real X-Y mic arrangement, built-in monitor speaker, auto recording level, lo-cut filter, timestamp, 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. 2GB micro SD card. Bundle incl. the t.bone HP-66 headphone and 2m USB cable. **€ 85.-** **€ 80.-**
order code 253718

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. **€ 133.-** **€ 112.-**
order code 223287

Zoom H2 4GB Bundle

Mobile recorder

24bit/96kHz, USB interface, record 360° sound as 2-channel data or 4-channel data simultaneously, mic/line input, headphone output, perfect for interviews, podcasts, meetings and live recording. Incl. USB cable, stand, power supply, windshield and 1GB SD card. Bundle includes additional 4GB SD card. **€ 169.-** **€ 142.-**
order code 203048

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). **€ 175.-** **€ 147.-**
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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.-** **€ 234.-**
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 micro slot, limiter and low cut filter, 5sec pre-record buffer, manual or automatic recording level control, USB-2.0 connection. Includes power supply, Soundforge Audio Studio LE, cable remote, 2x AA batteries and cable. Finish: Grey. **€ 311.-** **€ 261.-**
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, provides 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. **€ 333.-** **€ 279.-**
o. code 232016

Zoom R16 Bundle

USB audio interface and DAW controller

16-track playback and 8-track 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. **€ 349.-** **€ 293.-**
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, 8x 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. **€ 499.-** **€ 419.-**
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, 4x line level ins, 2x XLR ins with gain and switchable 48V phantom power, high impedance guitar input, 2-channel EQ on mic ins, multicolour LED metering, main and headphone outs with independent level controls, incl. power supply. Dimensions: 15.2 x 19.6 x 5cm. Weight: 0.6kg. **€ 85.-** **€ 80.-**
order code 235244

Behringer Xenyx 1204 FX

12-channel mixer

4x mic ins with phantom and 75Hz low cut, internal 24bit multi FX, 2x stereo ins with 3-band EQ, 2x aux (pre/post), USB, peak LED and mute per channel, 2-track I/O, XLR main out, internal power supply. **€ 144.-** **€ 121.-**
order code 191262

Behringer Xenyx X1222 USB

16-channel mixer

6 mic ins with 48V phantom power, low cut, internal 24bit FX, 16 presets, 2 stereo ins, 3-band EQ, 7-band master EQ, weight: 3.7kg, incl. energyXT2.5 Compact music production software for Windows XP/Vista (32bit), Mac OS X and Linux. **€ 189.-** **€ 159.-**
o. code 243146

Behringer Xenyx X1204 USB

4 mic + 2 stereo ins. **€ 166.-** **€ 139.-**
order code 243148

the t.mix 1832 FX

Rack mixer

18 channels, 6 microphone inputs, 4 stereo ins, built-in USB/MP3 player, 24bit DSP effects unit with 256 programs, 9-band EQ, 3-band EQ mid 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. **€ 235.-** **€ 197.-**
order code 242617

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. **€ 289.-** **€ 251.-**
o. code 242913

Alesis MultiMix 16 USB

16-ch. USB mixer with iPod recording

8 mic/line ins with 48V phantom power, integrated limiter, 16bit/44.1kHz and 48kHz, aux sends and returns, 100 internal 24bit digital FX, shelving and band pass/reject filter, incl. Cubase LE and power supply, for Win XP/Mac OS X, dimensions: 33.1 x 48.3 x 8.3cm, weight: 5.6kg. **€ 344.-** **€ 289.-**
order code 256731

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 17.5 x 56.8cm (WxHxD). Weight: 5.5kg. **€ 345.-** **€ 289.-**
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Mackie 1402 VLZ3

14-channel mixer

New XDR 2 preamps, 6x mono mic/line inputs (XLR/jack), 4x stereo line inputs (jack), 2x stereo aux returns, 2x aux sends, 6X inserts, 3-band EQ, 18dB lo-cut filter, PFL, 48V phantom power, internal power supply, balanced master outputs (XLR/jack). Dimensions: 8.1 x 35.6 x 32.9cm (HxWxD). Weight: 4.5kg. **€ 349.-** **€ 293.-**
order code 112366

Alesis MultiMix 16 FireWire

16ch. mixer with FireWire interface

8x mic/line ins, 4x balanced stereo line ins, 3-band EQ per channel, 4x aux send/returns, 100x 24bit FX programs, headphone out. FireWire interface: 18 ins, 2 outs, 24bit/48kHz, ASIO/WDM drivers for Win XP SP2, Core Audio drivers for Mac OS X, includes Cubase LE. **€ 389.-** **€ 326.-**
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Mackie 1642 VLZ3

Compact 16-channel mixer

8x mono mic/line channels, 2x mic/line stereo channels, 4x subgroups, 4x aux (2x pre/post switchable), XDR2 mic preamps, 60mm faders, 3-band parametric EQ (mono channels), 4-band EQ (stereo channels), 48V phantom power. Dimensions: 42.5 x 13.1 x 42.1cm (WxHxD). Weight: 8.3kg. **€ 525.-** **€ 440.-**
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Mackie Onyx 32.4

Live mixer

28x mono ins, 4x subgroups, 3x outs, 4-band EQ with fully parametric mids and fixed hi/lo, 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. **€ 1125.-** **€ 944.-**
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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.-** **€ 1820.-**
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Yamaha 01 V96 VCM

Digital mixing console

24bit/96kHz, 24 analog inputs, 12x mic inputs, expandable to 40 channels, includes ADAT interface, 4 FX processors, parametric EQ, includes Studio Manager software. **€ 2222.-** **€ 1864.-**
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Digital open architecture mixing desk

72ch/96kHz (36ch/192kHz), 8 buses, 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! **€ 3666.-** **€ 3076.-**
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MIDI master keyboard
 25 touch sensitive keys, joystick for pitchbend and modulation, octave up/down, MIDI output, USB connection, includes USB cable and Magix SampleRate SE. Dimensions: 38 x 8 x 24cm. Weight: 2.3kg.



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 € 55.- **£ 46.-**

Miditech Midistart 3 USB

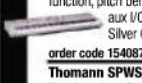
MIDI keyboard
 49 full-size touch sensitive keys, pitch bend and modulation wheels, USB port for direct connection to Mac/PC, MIDI out, includes USB cable and Magix SampleRate SE PC software. Finish: Silver



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 € 66.- **£ 55.-**

Thomann SP-5500

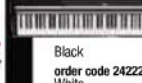
Stage piano
 88 hammer action keys, 559 sounds, 203 styles, 3 user styles, 100 songs, 64-note polyphony, accompaniment control (start/stop, sync start/stop, fill-in A/B, fade), dual mode, split mode, DSP, transpose function, lesson function, pitch bend, headphone out, stereo aux I/O, MIDI I/O, USB port.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



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 Thomann SPWS-5500
 Wooden stand for SP-5500
 order code 204071 € 46.- **£ 39.-**

Korg SP-170

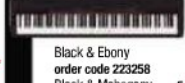
Stage piano
 88 natural weighted hammer action keys, 2x9W built-in speakers, 10 sounds, effects: reverb and chorus, key transpose and pitch control, 2 line/headphone outs, MIDI out, dimensions: 131 x 32.5 x 13.3cm, weight: 12.1kg.



Black
 order code 242228 € 468.- **£ 393.-**
 White
 order code 242231 € 468.- **£ 393.-**

Yamaha P155

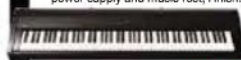
Stage Piano
 88 graded hammer action keys, pure CFIII piano sound, 17 voices, 128-voice polyphony, dual and split mode, metronome, 2x headphone outs, 2x 12W speakers, includes music stand, FC-4 pedal and PA301 power supply. Weight: 18.6kg.



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 Black & Mahogany
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Kawai ES 6

Stage piano
 88 keys, 32 sounds, 192-voice polyphony, 100 rhythms, transpose, infonation, 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
 € 1150.- **£ 965.-**

Kawai MP-6

Stage piano
 88 weighted keys with Ivory Touch key surfaces, 256 sounds, 256 memories, 12 tone wheel simulators, 192-voice polyphony, amp simulator, DSP effects, pitch bend wheel, modulation wheel, master volume, 4x zone volume, dim. WDH: 135.5 x 34.7 x 18.1cm, weight: 21.5kg, Finish: black, F-10H damper pedal included.



order code 246881
 € 1299.- **£ 1090.-**

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 € 1577.- **£ 1323.-**
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Roland RD-700 NX

Stage piano
 88 keys (PHA II Ivory-feel keyboard with escapement), super natural piano sound engine, 128 voices, USB audio recording function, audio playback (MP3, WAV, AIFF), 3 grand piano types with 15 variations, 10 electric piano types with 15 variations, 4-band EQ, 3-band compressor, DP-8 pedal included, dimensions WDH: 144.4 x 37.5 x 14.8cm, weight: 25kg.



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Rhodes Mark 7 73 A

Analogous electric piano
 73 keys, active version with preamp, EQ, tremolo, headphone output, incl. pedal, dimensions WDH: 118.1 x 20.9 x 58.4cm, weight: 43.5kg.



Black Glossy
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Korg Monotron

Analogous ribbon synthesizer
 VCO, VCF, LFO, VCO pitch, LFO intensity, VCF cutoff, VCF peak, LFO switch, assignable to oscillator pitch or filter cutoff, Ribbon controller, 1/8" stereo jack, headphone output, 1/8" stereo jack, power supply, dimensions: 12 x 7.2 x 2.8cm, weight: 95g.



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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.- **£ 315.-**

Akai MPC 2500 SE

MIDI production workstation
 Special edition with blue display, 128MB, 32-voice polyphony, 64 MIDI channels, 16 dynamic pads, 4 pad banks, Q-Link faders and knobs for real time control, optional hard drive, USB port, chop-shop loop-slicing, patched phrase samples, pad sample edit, 10 analog outs plus stereo digital I/O, 4 Q-Link controller (2 faders and 2 knobs), S/PDIF coaxial I/O, includes 32MB Compact Flash card.



a. code 240640
 € 1133.- **£ 951.-**

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
 € 2080.- **£ 1745.-**

Moog Minimoog Voyager Electric Blue

Electric Blue Edition V3.3
 Performance synthesizer, fractal blue solid ash cabinet, electric blue back lit panel, new blue LEDs, new killer patches, 7 banks of 128 presets, external mixer knob, MIDI enhancements allow you to send either 7 or 14bit resolution data from the mod wheel.



order code 188096
 € 2833.- **£ 2377.-**

Behringer BCF 2000 WH

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 (Win XP and Mac OS X). Finish: white.



a. code 119851
 € 125.- **£ 105.-**
 Behringer BCF 2000
 Finish: blue.
 order code 168766 € 155.- **£ 130.-**

Akai APC 20

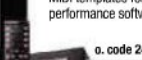
Ableton Live USB controller
 Exclusive bi-directional communication between the APC 20 and Ableton Live (no mapping required), USB plug-and-play, 40 triggers, 1 rotary control knob, 8 channel faders, 1 bus fader, compatible with PC and Mac, includes Ableton Live Lite Akai APC 20 edition.



order code 243147
 € 185.- **£ 155.-**

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



a. code 243915
 € 185.- **£ 155.-**

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
 € 479.- **£ 402.-**

Native Instruments Traktor Kontrol S4

DJ Audio interface and controller
 4-channel mixer with ergonomic layout and two high-res jog wheels, 2 analog inputs with phono and mic preamp for CD player or external audio gear, 4-deck-mixing and effects, loop recorder, 2 customizable FX, 24bit/96kHz, MIDI I/O, headphone output, Win XP or higher, Mac OS X 10.5 or higher (Intel), USB 2.0 bus power.



order code 253480
 € 869.- **£ 729.-**

M-Audio Fast Track USB

USB audio interface
 24bit/48kHz, 1x analog input, 2x analog output, input jack or XLR, headphone output, direct monitoring, for Win and Mac OS X, incl. ProTools M-Powered Essential Software.



order code 246876
 € 68.- **£ 57.-**

Alesis IO | 2 Express

2-channel audio recording interface
 24bit/48kHz, balanced master out, headphone out, 48V phantom power, mic ins, line level sources and instruments including guitars, MIDI I/O, plug-and-play, USB bus powered, incl. software CD and USB cable, for Windows and Mac OS X.



order code 247940
 € 88.- **£ 82.-**

Tascam US-122MK2

24bit USB 2.0 audio MIDI interface
 Supports 2 ins and outs, 2x XLR mic ins with 48V phantom power, enhanced high grade mic preamps, 2x analog line ins (1x switchable to Hi-Z guitar, bass in), MIDI I/O, 24bit/96kHz, latency-free monitoring with switchable mono function, USB 2.0, USB Bus powered, aluminium side panels, incl. Cubase LE4.



order code 235648
 € 129.- **£ 108.-**

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, AC-3/DTS surround sound compatible, MIDI I/O, compatible with both Mac and PC.



order code 184360
 € 149.- **£ 125.-**

ESI ESPI010e

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



order code 230632
 € 155.- **£ 130.-**

Tascam US-144MK2

24bit USB Audio/MIDI interface
 2x mic ins XLR, 48V phantom power, 2x analog line ins (1x switchable to Hi-Z guitar/bass input), MIDI I/O, S/PDIF digital I/O, 24bit 96kHz, latency-free monitoring with switchable mono function, USB 2.0, USB bus powered, includes Cubase LE4.



order code 235644
 € 159.- **£ 133.-**

Focusrite Saffire 6 USB

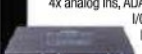
USB audio interface
 2 preamps with 48V phantom power, Hi-Z instrument input with -10dB pad, 24bit/48kHz, MIDI I/O, headphone output, 105dB, noise (mic in): THD+N = 0.0025%, 2x combo ins for mic/line/instrument, 4x analogue outs, includes Focusrite plug-in suite, Xcite+ bundle and USB cable, for Mac OS X or Windows. Weight: 1kg.



order code 236371
 € 166.- **£ 139.-**

Focusrite Saffire Pro 24 DSP

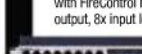
FireWire audio interface
 Virtual reference monitoring technology, real-time FX (EQ, compressor, comfort reverb), 24bit/96kHz, total I/O count of 16 ins (including internal loopback) and 8 outs, 2x mic preamps, 4x analog ins, ADAT optical I/O, 1x coax S/PDIF I/O, 2x headphone outs, MIDI I/O, 48V phantom power, LED meter, includes plug-in suite and power supply.



order code 233752
 € 349.- **£ 293.-**

Presonus Firestudio Project

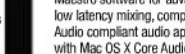
FireWire audio interface
 24bit/96kHz, 8x XMAX Class A mic preamps, 8x analog mic/line ins, 2x instrument ins, 8x analog line outs, S/PDIF digital I/O, MIDI I/O, balanced send/return, zero latency monitoring with FireControl mixer/router, headphone output, 8x input level meters, includes Presonus Studio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



order code 199889
 € 375.- **£ 315.-**

Apogee Duet Bundle

FireWire audio interface
 24bit/96kHz, 2 channels, Firewire 400 I/O, breakout cable with 2 XLR mic ins, 2x 1/4" jack instrument ins, 2x 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.



a. code 209773
 € 415.- **£ 348.-**

Focusrite Saffire PRO 40

24bit/96k FireWire audio interface
 20x I/O, 8x mic preamps, 8x analog I/O (2x mic/line/instr. combo I/O, 6 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
 € 458.- **£ 384.-**

MOTU Ultralite MKIII Hybrid

FireWire and USB audio interface
 24bit/192kHz, 2x mic/instrument ins, 6x bal. ins and 10x 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.- **£ 402.-**

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.- **£ 570.-**

RME Fireface UFX

USB/FireWire interface
 Up to 192kHz, 30 I/O channels, 12 analog inputs, 4x mic/instrument preamp (48V phantom power), 12 analog outputs, AES/EBU I/O, 2x ADAT I/O, Wordclock I/O, 2x MIDI I/O, FireWire 400, USB 2.0, TotalMix FX Software, built-in monitor controller, SteadyClock, DIGICheck, stand-alone operation with setup recall, 19"/1U, for Win XP SP2/Vista/Win7 and Mac OS X 10.5.



order code 255180
 € 1899.- **£ 1593.-**

Native Instruments Komplete 7

Complete package of software
 Contains: Kontakt 4.1, Absynth 5, Guitar Rig 4 Pro, Reaktor 5.5, Battery 3, FM8 and Massive, more than 10000 presets and sample libraries with 100GB, all instruments as stand-alone or plug-in usable, supported formats: stand-alone, Audio Units, VST, RTAS, ASIO, Core Audio, Core MIDI, DirectSound.



order code 252237
 € 429.- **£ 360.-**

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Fax: +49 9546 9223-24

The Thomann services

- 30-day money back guarantee
- free shipping to the UK and Ireland on orders above £159

Behringer UL 2000 B

UHF wireless system with headset
True diversity, 320 adjustable frequencies (798.850-805.800MHz), IRC compander, headset with Panasonic condenser capsule, cardioid, works with 1x 9V battery for up to 6 hours (not included), mute switch and low battery indicator on transmitter, scan function, pilot tone, 3 presets with 8 channels, 1 user preset with 8 channels, lock function, internal power supply, dimensions: 9.5" x 1U.
€105.-
£ 88.-

order code 139250

Behringer UL 2000 M

UHF wireless system with handheld mic
True diversity, 320 adjustable frequencies (798.850-805.800MHz), IRC compander, handheld transmitter with Panasonic condenser capsule, cardioid, works with 2x 9V battery for up to 12 hours (not included), mute switch and low battery indicator on transmitter, scan function, pilot tone, 3 presets with 8 channels, 1 user preset with 8 channels, lock function, internal power supply, dimensions: 9.5" x 1U.
€105.-
£ 88.-

order code 107376

Sennheiser Freeport Vocal

Diversity UHF wireless system
4 switchable frequencies between 863 - 865MHz, 10mW HF power, diversity receiver with LED for HF, diversity, peak, XLR & jack out, dynamic handheld transmitter, cardioid, 80Hz-16kHz, 1x 9V battery (up to 10hr). Includes 12V DC power supply.
€155.-
£ 130.-

order code 183508

Line 6 Relay XD-V30 Bundle

2.4GHz vocal wireless system
True diversity receiver, handheld transmitter with dynamic capsule L6-DC7, 6 switchable frequencies (all 6 parallel), audio frequency range: 10Hz to 20kHz, dynamic range > 115dB, up to 30m, DCL, world wide licence free use. Bundle incl. 6m Klotz cable and Ansmann maxE 2100 power set with 2x AA batteries + charger!
€299.-
£ 251.-

order code 254377

Line 6 Relay XD-V70 Bundle

2.4GHz vocal wireless system
True diversity receiver, handheld transmitter with simulation of 6 different capsules, 12 switchable frequencies (all 12 parallel), audio frequency range 10Hz to 20kHz, dynamic range > 115dB, up to 100m, DCL, battery power approx. 8 hours, world wide licence free use. Bundle incl. 6m Klotz cable and Ansmann maxE 2100 power set with 2x AA batteries + charger!
€488.-
£ 393.-

order code 254378

AKG C1000S MKIII Set

Condenser mic bundle
Cardioid/supercardioid, battery or phantom power, battery check LED, pattern switch, 50Hz-20kHz, 2000 impedance, 137dB max SPL. Weight: 275g. Includes K&M 27105 microphone stand, 10m Cordial XLR cable with Neutrik connectors, windscreen, clip and mic case.
€139.-
£ 117.-

order code 105776

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
€185.-
£ 155.-

order code 179393

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!
€279.-
£ 234.-

order code 165104
MK012-01 MSP2
Single mic, cardioid
order code 165103

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.
€285.-
£ 239.-

order code 154595

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
€1133.-
£ 951.-

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.
€93.-
£ 78.-

order code 203194

SC450 Stereo-Set - matched stereo pair in case (pop shield not incl.) €169.-
order code 174363 **£ 142.-**

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.
€179.-
£ 150.-

order code 235937

AKG C3000

Studio large diaphragm condenser mic
Cardioid, 20Hz-20kHz, 2000 impedance, -10dB pad, includes shockmount. Diameter: 53mm. Length: 162mm
€185.-
£ 155.-

order code 141408

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, 140dB SPL capabilities, frequency response 20Hz - 20kHz. Cardioid polar pattern, Thomann Edition in durable satin black finish including shockmount SM6, cable and bag.
€211.-
£ 177.-

order code 247421

Rode NT2-A Studio Solution Set

Prof. 1" large diaphragm microphone
Switchable between omni, figure of eight and cardioid patterns, variable high-pass filter - flat, 40Hz or 80Hz, PAD 0dB, -5dB or -10dB HPF and PAD, frequency response: 20Hz - 20kHz, max SPL: 147dB, 48V phantom power required, weight: 860g. Bundle incl. deluxe shockmount SM6, 6m cable and tutorial DVD.
€275.-
£ 231.-

order code 256707

the t.bone SCT2000 Set

Valve studio microphone
Truly warm sound, 20Hz-20kHz, omni/cardioid/fig-8 plus 6 intermediate stages, up to 130dB SPL. Includes case, shockmount and power supply. Bundle includes the t.bone MS180 pop shield.
€279.-
£ 234.-

order code 203196

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 windscreen.
€379.-
£ 318.-

order code 129929

EV RE20

Dynamic large diaphragm microphone
RE series, cardioid, switchable HP filter, variable D design, 1500, 45Hz-18kHz, includes clip and box, ideal for vocals, brass and bass drum. Length: 217mm. Diameter: 54mm. Weight: 737g
€449.-
£ 377.-

order code 128926

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
€555.-
£ 466.-

order code 119911

Brauner Phantom Classic

Solid state microphone
Cardioid polar pattern, pressure gradient transducer, equivalent noise <110dB, 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.
€985.-
£ 826.-

order code 139461

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.
€37.-
£ 31.-

order code 191529

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/instrument), 8x ADAT outputs (2x ADAT outputs (dual LightPipe), sync-to-wordclock input, JETPLL Jitter-elimination. Dimensions: 19"/1U. Weight: 3.6kg
€225.00
€389.-
£ 326.-

order code 236376

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
€425.-
£ 357.-

order code 123370

RME OctaMic II

8-channel microphone preamp
192kHz/24bit AD conversion with 8x mic/line channels, balanced TRS ins can be operated as real line ins., +21dBu max input level with gain range from 6dB up to 60dB, signal to noise ratio (SNR) ADC 107.5dB, 8x balanced line outs, 2x ADAT outputs (S/MUX, up to 96kHz), 4x AES/EBU outputs (D-sub, up to 192kHz), 1 AES/SPDIF sync in, phase, low cut and phantom per channel, clip hold memory.
€1219.-
£ 1023.-

order code 119911

Universal Audio LA-610 MKII UA-2 Duo Bundle

Classic tube recording channel
Based on the legendary Bill Putnam 610 tube mic pre and EQ, Authentic Teletronix LA-2A pre and EQ, 14 opto-compressors, complete vintage channel strip, mic pre with gain and level controls, tube bypass, large metering and improved signal output. Bundle incl. Universal Audio UA-2 Duo PCIe DSP Card.
€1480.-
£ 1250.-

o. code 252465

Behringer FBQ1502 Ultragraph Pro

2x 15-band graphic-EQ
FBQ feedback detection system, servo-balanced I/O (TRS & XLR), additional sub out, switchable low cut.
€77.-
£ 65.-

order code 167770

Behringer FBQ6200 Ultragraph Pro
2x 31-band graphic EQ with FBQ feedback detection system, sweepable limiter, additional sub out.
€166.-
£ 139.-

order code 172364

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.
€169.-
£ 142.-

order code 179985

RNLA 7239 Really nice levelling amplifier
10Hz-100kHz 0.5dB @ 0dBu clip point
+22.5dBu @ 3% THD.
€205.-
£ 172.-

order code 190166

dbx 266 XL

Stereo compressor/limiter/gate
Patented OverEasy technology (attack & release times), XLR I/O, -10/+4dB switch, stereo link, dbx sound.
€175.-
£ 147.-

order code 131808

dbx 166 XL
2-channel compressor/limiter/gate, stereo or dual mono, OverEasy or hard knee mode, PeakStop limiting.
€266.-
£ 223.-

order code 131035

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 DDx3216 or any interface/mixer with ADAT I/O.
€179.-
£ 150.-

order code 164573

Behringer DEQ2496 Ultra-Curve Pro

Digital mainframe
4 simultaneous EQ modules (31-band graphic EQ, 10-band parametric EQ, feedback destroyer, 3 dynamic EQs per channel), 61-band real-time analyzer with separate RTA in, 24bit/96kHz AD/DA converters and 32/40bit signal processors, 113dB dynamics, balanced ins & outs with gold-plated XLR sockets, AES/EBU and optical S/PDIF.
€249.-
£ 209.-

order code 162785

Lexicon MX200

Stereo FX processor
2 independent processors, 24bit converter, VST plug-in architecture with USB interface, MIDI interface, tap delay, legendary Lexicon algorithms: halls, chambers, plates, delays, chorus, flanger, tremolo, rotary, etc. dxx dynamic algorithm, 2 simultaneous FX, analog and digital ins and outs, internal power supply. Dimensions: 19"/1U
€219.-
£ 184.-

order code 180403

Boss VE-20

Vocal Performer
Vocal FX, dynamic compressor/de-esser, enhancer, delay, reverb, 2x harmoniser and pitch correction, LCD display, mono loop (38 sec), 30 preset + 50 user sounds, requires Boss PSA-230 optional power supply (order code 102842, not included).
€185.-
£ 155.-

order code 235812

tc Helicon VoiceLive Harmony Control Set

4-voice vocal harmony processor
Scale-based pitch-correction and effects (3-band EQ with low cut, compressor/gate, reverb + to echo), built-in mic preamp with 48V phantom power, 8 control switches, adjustable limiter, all ins and outs balanced XLR/jack, S/PDIF I/O, MIDI in/out/thru. Weight: 2.7kg. Bundle incl. tc Helicon Harmony Control.
€311.-
£ 261.-

order code 257149

tc Helicon VoiceLive Touch

Vocal harmony effect processor & looper
Effects by VoiceLive 2 incl. HardTune and more, 8 voices of NaturalPlay harmonies, MIDI or USB/aux input, 200 presets, 25 favorites, voicing buttons offer instant harmony arranging, VLOOP performance vocal looper, talk button bypasses all effects, XLR Mic in, Guitar in and thru, aux input, MIDI in, USB, headphone out, TRS and XLR output, incl. external power supply unit.
€469.-
£ 393.-

order code 250437

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, incl. power supply. Dimensions: 35 x 7.6 x 21.6cm. Weight: 2.3kg.
€699.-
£ 586.-

order code 225557

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AKG K 240
Studio stereo headphones
Half open, 550, 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.- **£ 75.-**

AKG K 141 MKII
Dynamic, half open, 550, 18Hz - 24kHz, 200mW. Weight: 225g

order code 206955
€ 82.- **£ 77.-**

Sennheiser HD25 BE
Dynamic DJ headphones
Impedance 700, SPL max. 120dB, frequency response: 16Hz - 22kHz (-3dB), closed system. Includes 150cm cable with 3.5mm mini jack and adaptor für 6.3mm jack. Weight: 140g.

order code 249403
€ 145.- **£ 122.-**

Sennheiser HD 212 pro
32Ω, 12Hz-19kHz

order code 161045
€ 38.- **£ 32.-**

AKG K271 MKII
Closed dynamic studio headphones
Circumaural design, 550, 200mW max input, 16Hz-28kHz, 104dB/V 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.- **£ 122.-**

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.- **£ 167.-**

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
€ 285.- **£ 239.-**

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.- **£ 76.-**

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
€ 139.- **£ 117.-**

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

order code 213090
€ 229.- **£ 192.-**

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.- **£ 142.-**

ESI nEar08 Classic
Active 8" studio bi-amp monitors
2-way bookshelf monitors, magnetically shielded, 70W LF & 70W HF amplifier power, 40Hz-24kHz, 1x balanced XLR input, 1x balanced/unbalanced jack input. Dimensions: 35.8 x 25.5 x 32.2cm (HxWxD). Weight: 10kg each. Pair price!

order code 222139
€ 215.- **£ 180.-**

Tannoy Precision 6
Passive 3-way studio monitors
6" dual concentric driver, frequency response: 62Hz - 51kHz, crossover frequency: 2.5kHz, nominal impedance: 6Ω, recommended amp power: 60 - 120W @ 8Ω, dimensions: 35.6 x 22 x 26.1cm, weight: 8.9kg. Pair price!

o. code 113056
€ 245.- **£ 206.-**

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.- **£ 234.-**

Adam A5X
Active nearfield monitor
2-way active bass reflex speaker, 6" carbon/rohcacell/glass woofer with 50W, X-A.R.T. tweeter with 50W, frequency response: 50Hz - 50kHz, crossover frequency: 2.5kHz, dimensions WHD: 17 x 28 x 22cm, weight: 6.4kg. Unit price.

order code 245572
€ 285.- **£ 239.-**

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
€ 309.- **£ 259.-**

Adam A7 Special Edition
Active nearfield studio monitor
6.5" Rohacell/Kevlar sandwich woofer, A.R.T. tweeter, 46Hz-35kHz, 100W (peak), 150W (RMS), XLR and RCA inputs. Dimensions: 18 x 33 x 28cm. Weight: 8kg. Finish: Black Piano Lacquer. Unit price.

order code 241073
€ 377.- **£ 316.-**

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 244787
€ 377.- **£ 316.-**

Adam A7X
2-way active bassreflex nearfield monitor
7" carbon/rohcacell/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.- **£ 360.-**

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
€ 468.- **£ 393.-**

Tannoy Precision 6D
Active 3-way studio monitors
Active assist, 6" dual concentric driver, frequency response: 59Hz - 51kHz, max. SPL 116dB, crossover frequency: 2.5kHz, amplifier output power: LF - 75W, HF - 35W, XLR/jack combo input, S/PDIF coax input with sample rate 44.1 to 96kHz, S/PDIF slave out, dimensions: 35.6 x 22 x 37.8cm, weight: 13kg. Pair price!

order code 184257
€ 469.- **£ 393.-**

Mackie HR824 MK2
Active 2-way studio nearfield monitor
8.75" low-distortion LF woofer, 1" titanium dome ferruloid 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
€ 519.- **£ 435.-**

Genelec 8040APM
Active 2-way studio monitor
48Hz-20kHz free field frequency response (±2dB), 115dB SPL peak per pair with music material @ 1m, 165mm high efficiency bass driver, 19mm metal dome tweeter with DCW (Directivity Control Waveguide), 3kHz crossover, magnetically shielded aluminium construction. Amp power per channel: 90W bass + 90W treble. Dimensions: 35 x 23.7 x 22.3cm. Weight: 8.6kg. Price per unit.

order code 171716
€ 744.- **£ 624.-**

Behringer VMX300 Pro
DJ mixer
3 dual-input stereo channels with gain and 3-band kill EQ, 1x mic in with auto-talkover and depth control, intelligent dual auto BPM counter, crossfader, PFL function. Dim. HWD: 8.8 x 24.1 x 33.2cm. Weight: 3.5kg.

order code 153735
€ 91.- **£ 76.-**

Behringer VMX100 Pro
2 dual-input stereo channels. € 48.- **£ 40.-**

order code 152139

Behringer DJX 750
5-channel DJ mixer
24bit digital effects, BPM counter with time and sync display, Ultragrid 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
€ 155.- **£ 130.-**

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.- **£ 251.-**

Allen & Heath XONE42
4-channel DJ mixer
2x turntable ins (RCA phono RIAA), 2x line ins, X-FX send, 3-band EQ, 6dB total-kill EQ on all channels, internal switch-mode PSU, 2 headphone outs (1/4" & mini-jack), VCA crossfader with curve control, VCF filter with independent V/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
€ 729.- **£ 612.-**

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 118995
€ 811.- **£ 680.-**
€ 811.- **£ 680.-**

Swissonic CDMP I
Compact CD/MP3-Player
40sec anti-shock, pitch ±16%, loop function, slot-in drive, balanced XLR output, direct headphone output with volume control, line output with master level control, IR remote control. Dimensions: 19 x 71U

order code 221521
€ 139.- **£ 117.-**

Denon DN-S I 200
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 text 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
€ 444.- **£ 373.-**

Pioneer CDJ-350
Single CD player
Plays MP3, AAC, WAV, AIFF, WAV (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
€ 599.- **£ 494.-**

Pioneer CDJ-850
Single 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
€ 895.- **£ 743.-**

Pioneer CDJ-2000
Professional multi-format 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 Tonic Pacemaker data, 24bit/48kHz soundcard, HID and MIDI controllable from USB, frequency range: 4Hz - 20kHz. Dimensions: 32 x 40.6 x 10.7cm. Weight: 3.9kg.

order code 238585
€ 1775.- **£ 1489.-**

Behringer B-Control DeeJay BDC2000
4-channel USB audio interface
24bit digital converter, incl. behringer B-DJ software, 2 scratch pads, pitchbend and cue function integrated audio mixer with mic preamp, 3-band kill EQ per channel, talkover function, 2x high-end phono preamps, cue section with PFL mix/split function.

order code 181179
€ 95.- **£ 80.-**

Behringer B-Control DeeJay BCD-3000
4-channel USB audio interface
24bit digital 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
€ 129.- **£ 108.-**

Numark Stealth Control
Complete prof. computer DJ package
Hardware controller with Native Instruments Traktor 3 LE and MixMeister Fusion Live software, extremely clean high quality sound, solid reliable knobs, faders, and buttons, Mac and PC compatible, supports MIDI over USB, plug & play, no power supply required. Colour: Grey.

order code 22914
€ 135.- **£ 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
€ 266.- **£ 223.-**

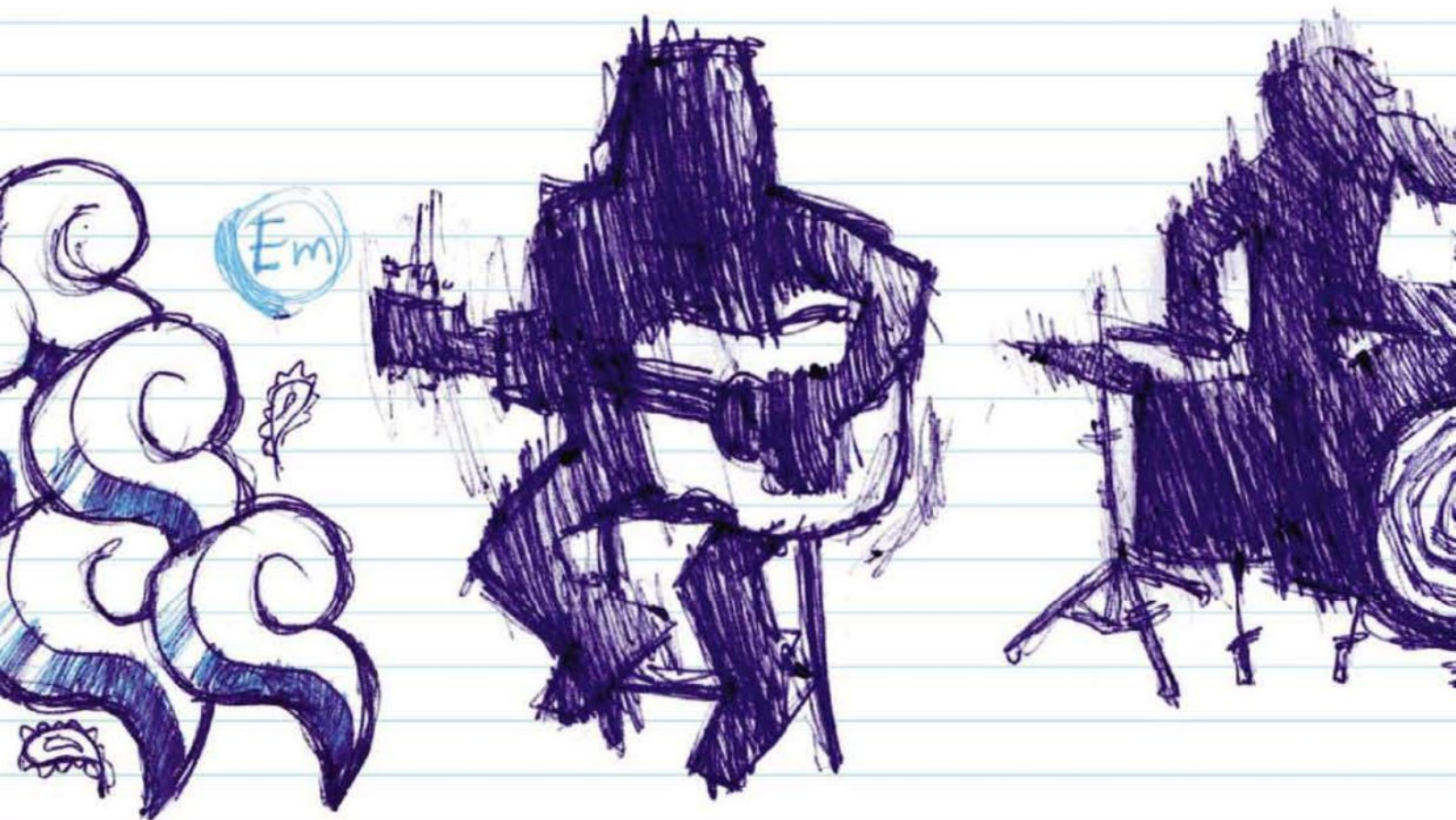
Numark Mixdeck
DJ workstation
With CD/MP3/USB decks, mixer, computer, MIDI interface, dock for iPod, mixer with EQ/rotary kills, effects with beat sync (echo, filter, flanger, pan, phaser), fader start, looping, sampling, tempo: 6, 12, 25 and 100%, controllable over MIDI software without timecode over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

order code 245624
€ 859.- **£ 721.-**

> make music now / unplugged!

UNPLUGGED

ACOUSTIC PRODUCTION



How to record, mix and master an acoustic band

> **The Acoustic Army are well and truly back on the march. From the indie rock of Vampire Weekend to the 'grass roots' antfolk of Mumford And Sons, there are a number of movements recontextualising the 'real' sound of 'real' instruments. And by the looks of the charts, the good old music-buying public are clearly down with the sounds of a group of folk belting out good, honest songs that you could actually sing around a campfire with your mates.**

The proliferation of acoustic bands in the Top 40 is matched by the fact that open mic nights

are enjoying a fashionable resurgence. This is great news for songwriters and those who have put in the effort to learn to play acoustic instruments; their craft is more appreciated now than it has been for quite a while. Whether you're an acoustic artist yourself, an engineer/producer or possibly both, this kind of music calls for some old-school skills when it comes to making your own recordings.

Beyond the one-man band

One man, a USB keyboard and a laptop running Ableton Live aren't going to cut it when it comes

to recording a fully acoustic band, especially if said group all want to play and record live – and all at the same time! Even if you're a outstanding multi-instrumentalist who's fully capable of overdubbing everything yourself, you're still going to need a certain amount of hardware and software and some audio engineering basics to get you through the recording process.

Of course, the kind of gear we're talking about can be stupidly expensive, but there are some fantastic solutions out there that offer unbelievable value for money if you do your

GGED!

DUCTION GUIDE



homework and know exactly what you need and why you need it. That's where we come in!

Do your homework

In this tutorial, we'll show you how to record an expanded acoustic band, centred on acoustic guitar and vocals, both live and using overdubs. We'll look at how to maximise the potential of whatever gear and space you have, point out some less obvious pitfalls, share some tips from the top, and point you towards some good buys.

Whatever your budget, and whether you're in a studio or at home, the process is the same.

We'll be discussing a lot of different things throughout, and we ask that you take note of the general concepts discussed rather than completely focusing your attention on the specific plug-ins themselves.

Remember, the song is king, and a badly recorded good song will always be better than a well-recorded crap one. Hopefully, though, after reading this guide, you'll have no reason to make a bad recording ever again!

So, to business. And let's start with an irritating but accurate cliché: if you fail to prepare, you prepare for failure...



Melo Park

The track featured in this tutorial and on the **cm DVD** is a specially re-recorded song from Melo Park's debut album, *Tara's House*, called *The Sun Is Always Shining*. Melo Park's core members are Sian Evans (also from Kosheen) and guitarist Simon Bishop. The album was produced by Steve Evans during a very mellow three-day studio session in Wales last year.

www.melopark.com

The recording environment

Recording a band fully live is a great way of bringing a little 'magic' into the room. The fact that everyone is performing together means that more adrenalin is present, and no-one wants to be the turnip in the rose garden. This sharper level of concentration can bring out something extra in a band.

Recording live is a double-edged sword, and the success of the session will depend on how capable the performers are. A great live acoustic band can sit in a room and deliver numerous faultless takes, which may be edited together; and their experience will mean that they play their instruments to blend dynamically well within the band, so you could almost record the whole thing with a stereo microphone. Job done!

A less experienced band will need their own headphone mixes, and quite possibly have to play sections again to correct the odd mistake. If the natural balance between instruments isn't quite right, this will need attention at the mixdown stage. Spill between microphones can be a problem, so it's probably wise to take steps to reduce this and spread the band out a bit.

Feel at home

This sort of situation can make your home a good place to record. There's usually more than one room, and the rooms you have will offer a variety of sonic environments. Chances are that you already have your studio set up, so at least that space may have a reasonably neutral acoustic. If you're taking over a house especially to record then we recommend using the biggest room with the most soft furnishings - usually the sitting room - as the main recording space. Set your control room up elsewhere if possible; this will help you to listen to what's happening in the main room more clearly. It may be possible to put percussion players in bedrooms, backing singers in the kitchen and any additional amps - perhaps for electro-acoustic basses or guitars - in bathrooms or garages. This way, when it comes to correcting mistakes and mixing, you'll have these sounds recorded in relative isolation.

The downside of using your house as an ad hoc recording studio is that you probably won't get line of sight between the players, who often



You really don't need a setup like this to record an acoustic band - although it wouldn't do any harm, of course!

rely on this more than they might realise, especially when it comes to remembering structures and last minute alterations. Perhaps the most practical solution is to record in these different spaces, but do a bit at a time - eg, acoustic guitar, vocals and rhythm section or piano first - then overdub the extras when the pressure's off a bit. These are the situations where a good producer, working under non-ideal circumstances, will work out how to get the best out of all concerned. You'll have to judge the players, the line-up and the space available to make that call.

Calling for back-up

The other golden rule is to make sure that all of the instruments involved - and that includes

human throats - are in good nick. Guitars and basses should be set up and have correct intonation, so they don't go out of tune when the player goes up the neck. Strings should be new but worn in, so that they stay in tune, sound bright and don't break. Leads should not crackle, and amplifiers should not hum or have any intermittent faults. Guitarists should have spare strings, picks, capos, bottleneckes and straps, while vocalists should not have been gigging the day before or up all night doing bongos.

It's also a good idea to borrow as much gear as you can. Often the drummers favourite '65 Ludwig snare or the guitarist's best Gibson acoustic simply don't sound quite right on the day, and having a choice of instruments, pedals, mics, shakers and amps can be a session saver.

Temporary acoustic treatments and fixes

Some acoustic spaces sound bad because of early reflections and resonance at undesirable frequencies. For a quick fix, all you need is gaffer tape and duvets. Taping a duvet to the wall or floor will help to kill pingy 'flutter' echoes, and if you can have the duvet hanging 10cm from the wall, it'll be twice as effective. This is because the waves hit the duvet, are partially absorbed, keep going, hit the wall, get reflected back and are partially absorbed again.

To combat lower mid 'honk', position the mic near packed shelves or any kind of diffusive

surface. Try the mic in different positions, but not exactly 50% between surfaces. Strangely, the sweet spot of 38% distance minimises the risk of the mic being in an area of resonant concentration (a node). If the room sounds really bad, use a hypercardioid pattern to try and eliminate as much off-axis sound as possible.

A typical sitting room is great, because big, soft furnishings break up the bottom end boom, and carpets, curtains and shelves full of books diffuse the mids and highs, while there should still enough room to

get the microphone far enough away from the instrument for the sound to 'breathe'.

For a more effective and expensive solution, buy high-density foam, like Melatech. 100mm deep, 1x1m panels are great mounted 10cm out from a flat wall, and several deeper, triangular or semi-circular section 1m lengths hung from the ceiling will almost eradicate ceiling reflections - great for mic position and recording space alike.

Diffusion is a great ally in the search for even tonality, and as we mentioned, packed shelves

are pretty effective. Whether they're full of books, software boxes or instruments, this kind of higgledy-piggledyness makes for very effective diffusion. This is why a studio/mix room treated in this way is also a great room to actually record in.

Oh, and remember to turn off the central heating and any fridges and freezers while you're actually recording. All of these things can gurgle unpleasantly at times and litter your recordings with irritating spikes and clicks. Do remember to turn it all back on when you're finished, though!

Some choice pieces

What you'll need

So you have a suitable recording space, some healthy musicians and a bunch of instruments that are going to make it through the day. Now you need the means by which to record them. Let's talk about a simple mono recording path, because this is the building block from which more complex and flexible setups are made.

You will need: a microphone, a microphone cable, a microphone preamplifier, an analogue-to-digital converter (these last two also come combined in the shape of a decent audio interface) and a DAW (Digital Audio Workstation - the recording software on your computer).

We'll look at specific mics for specific applications as they come up. As for everything else, we'll deal with the live recording scenario and assume that we need 16 simultaneous inputs to record the whole band. If you're tracking one instrument at a time, you can get away with one or two great mic amp channels, analogue-to-digital converters, and two or three mics.

For the DAW, we recommend a high-end app like Apple Logic Studio, Avid Pro Tools, Steinberg Cubase or Cakewalk Sonar, as opposed to the less linear likes of Ableton Live and FL Studio. That's not to say that the latter two can't do the job, just that ergonomically they're not designed primarily for this sort of work.

We're going to record at 44.1kHz sample rate, 24-bit. This means no sample rate conversion will be required when we master for CD at the end of the production process.

How many mics?!

So, we need a device with 16 mic preamps and a way to send each signal to the destination of our choosing. A real-life mixing desk is still the most economic way of buying that many mic preamps, a routing system, and a monitor controller and headphone monitoring system all in one. Many of today's mixers - eg, Mackie's Onyx series - have built in A/D converters and connect directly to your DAW via FireWire, making them attractive both economically and ergonomically.

If you don't want a full-on mixer, there are plenty of superb audio interfaces on the market with high-quality mic preamps - check out MOTU, RME, PreSonus, M-Audio and Focusrite. The only downside of these is that they generally only offer eight mic inputs.

Remember that you'll need time to install and properly test any software and drivers for new or borrowed audio interfaces and converters before the session. Once you're up and running, make sure your setup can record a pile of audio tracks for a few minutes at a time and play them back without any glitches. You don't want to be wasting time downloading software updates with a band waiting impatiently for you to pull your finger out.

You're going to need quite a few mics, which means you'll also need cables and mic stands. Borrow or even rent stands if you have to - boom, straight and short, with stereo bars if possible, so you can put two mics on one stand. You need the microphones to be in the same place at night that they were in the morning or any drop-ins are going to sound wrong.

If you're recording percussion, make sure you have blankets, pillows, gaffer tape, a brick or two and a drum key - it's almost guaranteed that the drummer won't have his.

Under £1000

Shure SM57 mic £133

This cardioid classic is a fantastic all-round microphone, even for vocals - and especially for rock vocals.

www.shure.com

Sontronics Orpheus mic £379

A great all-round large diaphragm condenser mic with -10dB pad and switchable patterns.

www.sontronics.com

Advanced Audio CM-47 mic £540

"Based on" the classic Neumann U47, this model is a very general-purpose valve condenser microphone.

www.aamicrophones.com

AKG C414B XLS mic £999

A studio workhorse with five polar patterns and varied pad and LF roll-off options. It can record anything, has a very low noise floor and boasts a big sound.

www.akg.com

Golden Age Project Pre 73 preamp £199

Bargain preamp "inspired by" the classic Neve 1073 mic preamp.

www.goldenagemusic.se

Apogee One audio interface/mic £199

One channel of high-quality Apogee audio I/O over USB at 24-bit and up to 48kHz. The One

features a built-in microphone, an instrument input and a mic preamp with phantom power on a breakout cable. www.apogeedigital.com

Apogee Duet audio interface/mic £389

Like the Apogee One but with two channels of I/O, and A/D conversion up to 96kHz - perfect for 'on the go' stereo recording.

www.apogeedigital.com



If you want to record in stereo out in the field, the Apogee Duet is just the ticket

Over £1000

Mackie ONYX 1640i mixer £1173

This high-spec analogue mixer features full FireWire integration with all major DAWs - perfect for recording an acoustic band.

www.mackie.com

Apogee Ensemble audio interface £1443

Eight channels of very high-grade A/D conversion, four digitally controlled mic preamps, 16 channels of ADAT optical I/O, stereo S/PDIF or optical I/O, built-in soft limiting and high-quality word clock make this a thoroughly posh option.

www.apogeedigital.com

MOTU 896 mkIII audio interface £1054

Eight mic amps and I/O channels at up to 192kHz, plus 16 channels of ADAT optical I/O, on-board DSP effects and MOTU's Cue Mix internal bussing/monitoring matrix.

www.motu.com



This MOTU 896 mkIII provides you with eight mic preamps and I/O channels, and more

Silly money

Focusrite ISA430 mkII £1899

High-end single recording channel including dynamics and de-esser - as used on our vocal in this tutorial.

www.focusrite.com

Neumann M150 valve condenser microphone £3795

A stunning microphone for those who are truly serious about their recording.

www.neumann.com

Prism ADA 8XR £6985

The daddy of A/D converters, with modular interfaces for different hardware requirements - conversion doesn't get any better than this.

www.prismsound.com



Get your recordings sounding perfect with a serious mic like the gorgeous Neumann M150

Setting up monitoring for a whole band

If the whole band are playing together, everyone's going to need to be able to hear what they're doing. Even if the players can hear themselves without headphones, they'll still need a cue mix to hear other musical cues, click tracks and count-ins, as well as talkback from the engineer/producer.

A cue mix is totally separate from your nicely balanced main mix. It's sent to a performer so that they can hear themselves at whatever level they want and turn down any elements that they find distracting. It doesn't matter to you, the producer, what this mix sounds like, because it's purely for the performer to play along to.

If your DAW has sufficiently low latency, cue mixes can be created from your recording channels – but bear in mind that each cue mix you make has to be sent to a headphone amplifier of some kind, and then to at least one pair of headphones.

Sending multiple cue mixes from your DAW's recording channels and FX returns is the ideal situation, as it enables you to construct as many cue sends as you like, and makes it much easier to drop in individual performers to correct mistakes after the main take has gone down. (Note that if you send a signal to headphones from your preamp, you won't be able to hear the playback, only the input signal.)

A mixing desk is ideal in these situations, because it has auxiliary sends hardwired to each channel, with a corresponding master output level and jack socket all ready to go. Mixing desks also have monitoring controls and talkback built in, so the engineer/producer can mix their own mic into all the cue mix sends to talk to the band.

If you don't have any monitoring hardware that features talkback functionality, route any old mic with an on/off switch to your DAW along with everything else, so that it can be included in everyone's cue mix. You might also need to set up talkback mics for any performers who are recording in another room.



> Step by step

Setting up to record the vocal



1 > We're using a borrowed Neumann U67 large diaphragm condenser mic. We set it up in the hall, with a duvet taped to the nearest wall. The pop shield is 6" away from the mic and our singer can get as close to the pop shield as she likes. We set the mic pattern to cardioid and turn the low-frequency roll-off on to eradicate any rumble.

2 > We plug the mic into a Focusrite ISA 440 mkII Producer Pack, which boasts a great mic preamp, EQ and compression. We don't use the EQ, but we do apply a little compression on the way down, set to no more than **6dB** gain reduction at the loudest peaks.

3 > To help the singer hear her own performance, we put a compressor plug-in over the vocal channel in our DAW. We give it a **2:1 Ratio** and a low **Threshold**, so it has quite a drastic effect. This will make the vocal more present and exciting in the headphones without applying any processing to the recording. Check your record level meters without the plug-in active, though.



4 > Again purely for the benefit of the singer, we insert an EQ plug-in with a high-pass filter knocking out the subs and a hefty peak around **5kHz** to boost the presence of the vocal. Don't overdo the top end of this monitoring EQ, though, or you may end up with headphone feedback in the recording.

5 > Finally, we place a delay plug-in on the vocal track to create a sense of space for the singer. Weirdly, this usually also helps with their tuning. Some singers aren't used to headphones, however, and just won't be able to get on with them, no matter what help you give them. If that's the case, get them to sing with one headphone off, so that they can hear themselves naturally.

POWER TIP

>Headphone setup

A headphone mix usually ends up leaving your audio interface via a stereo 1/4" jack socket. This output needs to go to a headphone amp and then on to the headphones. You may need long cables to connect to headphone splitter boxes or a variety of XLR and 1/4" adapters to achieve this. Band members might have their own headphones, so remember that even if they're all plugged into the same splitter box, they may operate at different levels because of their varying impedances. If yours is a one-off project, it might be worth renting headphones, leads and splitters if possible.

Price *and* **power** in sync.

Mixcraft Pro Studio 5, the Ultimate Mixcraft Experience, includes even more instruments and effects. Packed with the award-winning Pianissimo sampled grand piano, stunning emulations of the classic Memorymoog™ and CS80™ vintage synths, and four powerful new effects, Mixcraft Pro Studio 5 contains everything you need to produce and record your music.

"Mixcraft goes the extra mile."

-Craig Anderton, Keyboard Magazine, May 2010

"Your CPU won't even break a sweat."

-EQ Magazine, May 2010

"Packed with a staggering array of features."

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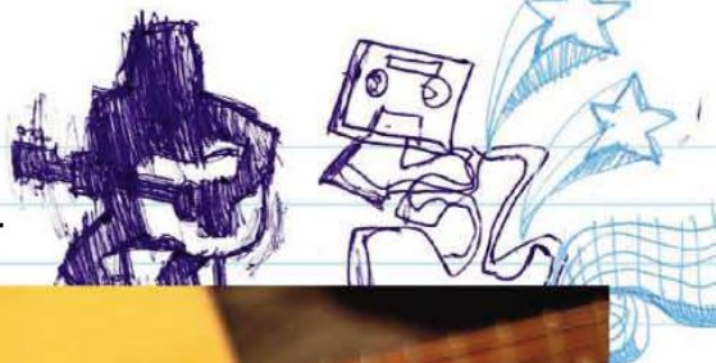


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Setting up to record acoustic guitar

Now to mic up our acoustic guitar, which is going to be the core sound of this track. We have the right guitar, the right part and nice bright strings that have been treated with Fast Fret or a similar lubricant in order to reduce the squeaking caused by rapidly moving fingers.

The room in which the guitar is recorded is a crucial consideration. A vocal can be successfully recorded in even the most challenging space; because it's possible to get right in there with a dynamic mic, good results can always be achieved. However, the best acoustic guitar recordings are made in a big, neutral space, with a top-quality large-diaphragm condenser mic placed several feet away. This is practically impossible to do outside a professional studio, because it's difficult to find a sympathetic, large, neutral space that's truly quiet. Guitars are very soft instruments, and passing motorcycles and noisy plumbing aren't generally the kind of evocative texture we're looking for. When we start cranking the gain on our mic amp, any extraneous noise becomes very loud indeed.

To achieve a natural tonal balance, we need to get the mics as far away from the instrument as we can. If we're too close, the sound is going to be boomy, scratchy and uneven. So, the room has to be as sympathetic as possible. If you don't have a spacious, quiet sitting room then you will need to calm the acoustics of whatever room you're using and get the mics closer in. A hard floor will make things difficult, so it's duvets to the rescue again. Put them on the floor and draw all the curtains.

Dynamic alternatives

Because condenser mics are sensitive and have a wide frequency response, they can be unflattering and unforgiving in certain recording environments. So, what are the alternatives? Dynamic mics are excellent for recording acoustic guitars, and they also have the benefit of rejecting much of the room sound. Because our room's not brilliant, we're using a Shure Beta 58 placed a foot away from the guitar, angled at 45 degrees and aimed at the neck/body join.

Because the guitar is going to be the backbone of our track, we're going to add another mic, giving us more control over the final sound and also opening up a range of



Record your guitar with two mics to create a stereo impression and provide a little room ambience in the mix

stereo possibilities. We plump for an SE R1 ribbon mic, for two reasons. Firstly, the frequency response is warm and soft at the top end, and ribbon mics in general give a feeling of weight in the low end. Secondly, they have a figure-of-eight pickup pattern that will capture a bit of room ambience, and this will eventually help us to sit the guitar in the mix. This mic is placed a foot and a half away from the bridge end of the guitar, 'looking' at where the strings are played.

Neither of our mics require phantom power, and we're going to record with no compression to keep our options open later on, so we're pretty much done. Each mic is routed to its own recording channel, so we have control over the level and panning of both in the mix.

If your acoustic guitar has a pickup, then plug it into a DI box and record that signal too.

When mixing, you could use amp sim plug-ins to create additional textures for the guitar sound in different sections of the song, or even send the DI signal back out to a guitar amp in a nicely ambient room and re-record it.

"To achieve a natural tonal balance, we need to get the mics as far away from the instrument as we can"

Oh, and a final word of caution before we leave this subject: when you're recording, watch the level closely. Even though they're quiet instruments, acoustic guitars can produce loud spikes at times.

Phase check

Because we're using two microphones to record our acoustic guitar, we need to check the setup for any phasing issues. A phase relationship is brought into play whenever two recordings of the same audio source are mixed together, and if it's wrong then it can make your recordings sound thin and weak.

To check for phasing, we zoom in on the waveforms of both channels of a test acoustic guitar recording. If we zoom in

close enough, we see that the waveform is essentially a wavy line, with peaks and troughs above and below a middle 'horizon' - the zero-crossing line. If both signals peak at the same time then they're 'in phase'; if one signal peaks while the other troughs then they're 'out of phase'. When the waveform are out of phase, the two signals cancel each other out, weakening the sound in stereo and making it disappear altogether in mono.

Your DAW's mixer may well have a Phase Invert switch on each channel - simply activate it on one of the offending channels to fix the problem. If yours doesn't, insert a 'utility' plug-in with a Phase Invert button on one of the channels. If the two channels are panned centre then you'll hear a big difference in the sound when you flip the phase. When the sound is strong, you know the phase is right. Now you can pan your guitar tracks knowing that

the sound won't mysteriously vanish when heard on a radio or other mono system.

If you simply can't get access to a Phase Invert switch in your DAW, move one of the two audio files manually in order to sync up the peaks. Perhaps a better way of doing this is to put a sample delay plug-in on one of the tracks and experiment with delays of between 10 and 500 samples. Remember to monitor the tracks in mono while you're doing it, though.

Setting up to record drums and bass

Now we have our vocal and acoustic guitar all set up, it's time to pay a visit to our drummer in the dining room. As this is a soft acoustic song, we're not chasing a muscular, rock-orientated drum sound. Instead we're after something soft, expressive and warm, in which the kick drum is going to help round out the bottom end of the track along with the acoustic bass. We're not looking for any ambience around the kit either, as this can give the impression of power and volume - which we don't want - so apart from a reflective kitchen or bathroom, any room will be OK. In this case, we're in the dining room next door to the sitting room, but spill won't be a problem as we're playing quietly.

"If you can't get hold of that many mics, you can get a decent sound just using a pair of overheads"

We're recording a kit comprising a kick, hi-hats, snare drum, two tom toms, ride cymbal and crash cymbal. We're using nine mics and record with no compression, EQ or gating. That's a lot of mics, but if you can't get hold of that many, you can get a decent sound just using a pair of overheads. Ideally, though, you want at least a pair of overheads, plus a separate mic for the kick drum.

We set up a pair of AKG C414 B-ULS condensers as overheads, set to cardioid pattern. A good starting position for these is between two and three feet above the cymbals, pointing down either side of the snare drum, roughly four feet apart. This will put the snare drum in the centre of the stereo picture when we pan the overheads left and right.

On the top snare head, we position a dynamic mic. In this case it's a Shure SM57, which is a great all-rounder. We place it roughly four inches above the edge of the drum and pointed towards the centre of the head. This setup is mirrored for the bottom snare head. Since we've again got two mics capturing the same source, we might well need to flip the phase of the snare bottom mic, just as we did with the guitar on the previous page.

The kick drum is recorded via another SM57, placed two or three inches inside the shell and pointed directly towards the point at which the beater strikes the head. We also place an EV RE20 dynamic mic pointing straight at the outer (non-batter) head from about four inches away.

Next we put a Sontronics Orpheus condenser mic on each of the tom toms, pointed towards the centre of the head from five inches above the top edge of the drum. Lastly, we have a 'general' condenser mic over by the floor tom and ride cymbal to capture a bit of everything. For this song, we'll probably only make full use of the overheads, snare top and outside kick mics.

Generally, mic preamps, whether on a mixer or audio interface, will sound best for drums if they're ever so slightly overloaded, tickling the



red on the meters. This has a peak limiting effect and can add a little punch to the sound of the recording.

Totally addicted to bass

Our bass player is using an acoustic bass guitar, which is an incredibly quiet instrument. Thankfully it has a pickup, so we plug it into a bass amp, which we mic up with another EV RE20 dynamic. Because the bass guitar itself is so quiet, the bass player can sit in with the drummer without interfering, and the amp can

be out in the hall with the volume set quite low. That's great, because line of sight between musicians is always something to strive for.

The singer, guitarist, drummer and bassist are now in position, and we have 13 tracks armed for recording. At this point we make the decision to add the accordion, cello and backing vocals as overdubs when some good takes have been recorded and edited together (comped). Each of these instruments can be recorded through the main vocal mic without any problem. So, quiet, studio, please...

Tips for a successful session

Try to use a click, at least for a count-in. This will help to keep everyone settled and make it very easy to edit several takes in order to make a comp. Using a click for the whole take might require some tempo changes to maintain a natural feel, and it may only be the drummer who needs it. Automate the volume of the click to avoid headphone spill on sustained chords in gaps or endings.

Record everything! As soon as everyone is set up, make sure you record whenever the band are playing, whether they're performing the track or rehearsing to the click. It's often the first take - the moment when people think they're just rehearsing - that turns out to be the winner. And if the band start playing another song, don't stop them - record it!

Music stands and whiteboards are worth their weight in gold - they keep everyone's lyrics, notes and structural/musical changes in view, and you won't end up with rusty paper sounds on the track.

Share a guitar tuner, or use a software tuner if everyone can see the screen. Tuners can vary a bit, which is why it's a bad idea to use different models for each instrument. Melodyne can now decipher polyphonic audio, but it's still much, much easier to have everything right from the word go.

If you need to overdub yourself and the mic's in another room, the easiest method is to take a laptop and set up screen-sharing via TeamViewer, Back to my Mac or any other VNC client to control the transport of the DAW computer. There are lots of remote transport apps available for iOS too.

> make music now / unplugged!

> Step by step

Using busses to make a sub-mix



1 > First we build an internal bussing setup, which will make the mix much easier to stay on top of. Using your DAW's routing system, create a bus for each element of your mix - it's good practise to have a template already prepared. In ours, you can see an extra mono bus. We use this as a sidechain send, so we can duck the guitar from the vocal.

2 > Next we route the **Outputs** of all the vocal or vocal effect return channels to our **LV bus**, then create a stereo auxiliary return channel and set the **Input** to **LV bus**. This process is repeated for each instrument group apart from the bass, because that's only coming out of one channel anyway.

3 > If possible, create a new view or screenset with only your bus (sub-master) channels visible. This makes it very easy to make immediate changes to the basic mix balance, which is very useful if you find yourself running out of master output headroom. Remember to solo isolate the busses, or you won't hear any individual tracks in solo.

> Step by step

Tidying up the vocal



1 > Make life easier for yourself by getting rid of the big areas of silence between sections of the song. Be sure to add fades that are sympathetic to the singer's breaths, and take the opportunity to nudge any backing vocals into line to keep sibilant confusion to a minimum. We also add a pre-fade send to our **Sidechain** bus so that we can duck the guitar.

2 > The 'la la' sections of the main vocal need to sound a little different to the rest of it. Rather than automate insert parameters, we just make a duplicate channel and mute the necessary regions. We leave the send to the **Sidechain** bus off this channel, so the 'la las' can sit back in the track, and the guitar can come into focus for a while.



3 > We use trim automation to knock out any overloud breaths or odd little mouth noises that are audible between words and phrases - all the compression we've added really brings anything like that forward. The good thing about trim automation in Pro Tools is that you can still have a free hand on the volume fader while the trim does the corrective ducking.

POWER TIP

>Easy, boy

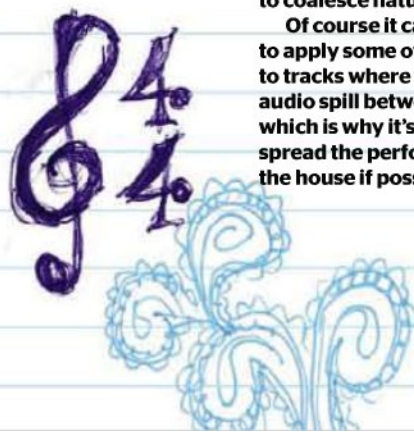
It's easy to over-process a mix, so now is a good time to create a working balance of your raw recordings using your new, ergonomic mix setup. When you have a good general balance, export the mix and put it on a stereo channel so that you can periodically go back and listen to it to make sure you're not losing any of the original tone or warmth - it's easily done, especially with acoustic material. Save a different session each time you make any significant changes so that you can always get back to any point along the way at which you've taken a wrong turn.

Pre-mix problem solving

Now it's time to get your perfectionist's magnifying glass out. You'll inevitably have to let certain things go during a live tracking session, but you should only do this with the kinds of things that can be fixed after the event. No amount of digital trickery can inject character and energy into a performance, but timing and tuning are easily sorted, and there's no point wasting valuable recording time making the band play over and over again just to fix such things. Generally, the more takes you do, the worse timing and tuning get.

Fortunately, ingenious plug-ins like Melodyne and Auto-Tune, and DAW features like Logic's Flex Audio and Pro Tools' Elastic Audio, make these kind of alterations easy. We're not going into the detail of these remedial processes here, but tidying up timing between vocal takes and gently easing away any tuning niggles in the backing vocals or bass will all help to make the mixing process a lot easier by enabling the individual elements to coalesce naturally.

Of course it can be very tricky to apply some of these processes to tracks where there's a lot of audio spill between instruments, which is why it's a good idea to spread the performers around the house if possible.



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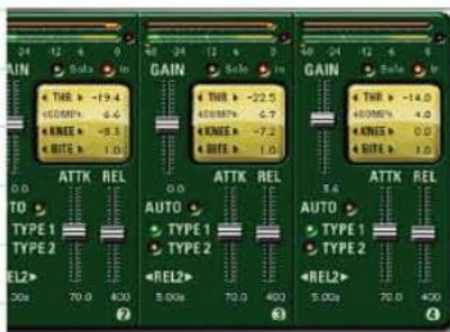
1 > Our vocal recording is good, but as we used little compression and no EQ, it's going to need some treatment to make it loud and proud in the mix. First up, we add a mastering-style peak limiter to tame the loudest of peaks that would cause subsequent compressors to overreact. Its fast attack and release characteristics should make it transparent.



2 > Next we add an EMT limiter plug-in that models a vintage limiter with a lot of character. It's good at holding a vocal at a stable perceived level. Too fast a release time would sound a bit frantic, so we use a medium setting for this stage. This 'second line' of compression smoothly controls the gentler peaks in the vocal now that any extreme spikiness has been removed by the first limiter.



3 > The next ingredient in our compression chain is the Waves R-Vox plug-in. This works to bring up the quieter section of vocal, so we end up with a part that sounds dynamic, yet doesn't have a huge variation in level if you watch the meters. This would be hard to achieve using just one compressor plug-in.



4 > The MCDSP MC2000 multiband compressor takes on the job of keeping any boominess in check without affecting mid-range, and vice versa. We boost the very top band by a few dB to add some extreme top-end 'air' to the voice. This will help to cement its position in the centre of the mix, but it could cause sibilance, so we may need...



5 > ...A de-esser. Our Waves R-De-esser has some good presets onboard. We begin with the **Female de-ess split** preset, which splits the signal into two bands and only applies gain reduction above the crossover point. Be careful not to introduce a 'lisp' by overdoing it at this point in search of very toppy vocal sounds.



6 > We want to apply some processing to the vocal, but it's so heavily compressed that our effects won't behave the way that we want them too. To remedy this, we create a far-less-compressed duplicate track, turn it right down and send it, pre-fader, to **Mon FX Bus 1**. This sets off a reverb when the vocal gets louder, creating a more natural effect.

POWER TIP

> Mix headroom

Now's the time to get our mix bus headroom right. The fully treated vocal and effect level can be seen in our vocal bus master channel. First, we make sure that at its loudest point, the vocal doesn't clip the LV bus output. We do this by grouping the vocal tracks and effect returns and turning them down together. Once you've done this, it's a very good idea to turn the LV bus **Level** down at least **5dB** and use this as a guide for introducing the other elements of the mix. It's very annoying to realise that you need to turn the vocals up at the last minute and find that there's no headroom left on the master fader...



7 > We insert a delay effect before the reverb and set its **Echo (Delay) time** to **1/4 notes** (about **300ms**). SoundToys' amazing EchoBoy plug-in also lets us apply a **Vibrato** to gently modulate the vocal on its way to the reverb. This helps to create an increased sense of space. We mix the effect at about **30%**, which exaggerates the reverb nicely.



8 > You can't beat a convolution reverb like Altiverb or Space Designer for a natural-sounding acoustic track. We're using an old EMT 140 plate reverb model, with a long **Reverb time** of over **3 seconds**. Our reverb isn't going to be loud in the mix, but it will catch nicely on the odd phrase and provide a subtle bed of 'glue' for the vocals against the guitar.

> Step by step

Processing the guitar and the rest of the band



- 1 > We bus the guitar's dynamic and ribbon mic channels to our **Guit** bus. The two are similar enough in sound that we can pan them hard left and right, giving a big sound. We then set a relative level, group the tracks together and bring them down in volume to prevent any overloading of the bus return.



- 2 > We insert an MCDSP MC2000 multiband compressor over the guitar bus, with the **Threshold** of the second band set at **-24dB**. This helps to keep any odd moments of boominess under control without ducking the higher frequencies. We dramatically reduce the **Gain** for band 1, effectively filtering out any sub-bass rumble below **75Hz**.



- 3 > Here's a trick that can be used on almost any sound. We use a distortion plug-in (Pro Tools' LoFi) to apply just a touch of distortion to the signal. This will add a little chunkiness and warmth by enhancing harmonic overtones.



- 4 > We insert a basic compressor last in the chain to automatically duck the acoustic guitar a little whenever the singing happens. The sidechain source is from a send on the vocal track to the **Sidechain** bus that we prepared earlier. **Threshold** and **Release** times are the key parameters for achieving subtlety - we don't want the effect to be noticeable.



- 5 > Once again, we use a multiband limiter to control the sub-bass: we compress all frequencies below **75Hz** (band 1) and turn them down by **15dB**. We don't turn the second band of boominess down, instead holding it in place with some **10:1** compression. We turn down the very top band as there's nothing there but hiss!



- 6 > We use Pro Tools' LoFi distortion again for the bass, but this time we go at it a bit more heavily. Next we use the SansAmp PSA-1 plug-in - it's an excellent bass overdriver for a more gutsy tone. We could apply an amp sim plug-in, too, but for this tune we just need a gentle sound that works well with a low, soft kick, and where the notes come through purely.



- 7 > We place a trim plug-in on each channel of our drum kit to enable phase reversal where needed, and add a bit of high-end to the snare top. We bus the kit channels to two busses, and insert this punchy EMI compressor/limiter on one of them. After balancing the blend of compressed and clean bus suitably, we bus it to the main **Kit** bus. This is called parallel compression.



- 8 > Next we insert a mastering-style peak limiter over the main **Kit** bus. This is to remove any big transients that might poke out and disturb any mix compression added later or at the mastering stage. We give it fast **Attack** and **Release** times, so the limiting shouldn't affect the character of the sound, as long as it's not too savage.



- 9 > Apart from a little top end on the snare, we've managed to keep the kit flat in terms of EQ. This should help it sit well with the acoustic guitar and benefit from any global EQ that happens later. Finally, we insert a simple sub-harmonic generator to exaggerate the big, low, softness coming from the bass drum, without making it sound too hard.

Mastering and finishing up

Before your mix is ready for mass consumption, it has to go through the stage known as mastering. Thanks to the way that music technology has advanced, these days the mastering process can now begin before the mix is printed (exported), especially when you're working entirely in your Mac or PC, with no outboard processing. Back in the days of yore, mastering was an entirely separate stage, where the completed mix was treated in isolation according to its destination format (ie, vinyl, CD).

Generally speaking, any mix benefits from some gentle overall compression. This gives a sense of power to the music by mimicking

the behaviour of our ears, which automatically turn up the quiet bits and reduce the loud bits for us. Some EQ helps to brighten up a mix or add bass. Finally, some technical peak limiting enables the digital file to be louder without sounding distorted. This kind of peak limiting can be very savage, and indeed the sound of what was once called 'squared off' or 'over-limited' audio has become not only acceptable, but positively sought after in modern mixes.

We could route our mix-in-progress through some very powerful mastering processors and effectively listen to the mastered mix while still having control of the

mix elements. This way, when we print it, that's it - job done. The problem with doing this, though, is that some of the best mastering plug-ins are so CPU intensive that they can rob us of mixing power and introduce unacceptable processing delay.

For this track, we've kept the mastering process separate for the purpose of clarity, so that you get to hear the 'raw' and mastered versions separately. Being a soft acoustic track, we won't be using hyped-up mastering effects - just a simple process to get the track sounding 'glued together', bright and reasonably loud on an MP3 player or computer speakers.

> Step by step

Mastering and exporting



1 > The first stage of mastering is applying a peak limiter to knock off the big ones, as we've previously done with various mix elements. We're using the Waves L2, which is a bit posh and CPU-hungry, but particularly transparent. This step prepares the way for a more conventional mix compressor. We reduce the **Out Ceiling** by 2dB so that we don't hit the next processor too hard.

2 > The SSL copy from Waves that we're using here emulates the much-sought after bus compressor from the SSL G Series consoles. It's super-fast, but has character. We want a maximum of 2-3dB of gain reduction at a **Ratio of 2:1**. This gives us some nice mix glue, without creating any pumping or over-hyping the sound at any point.

3 > Our only major EQ comes in the shape of Voxengo's HarmoniEQ, which also adds a little harmonic enhancement along the way. We remove the extreme top and bottom ends and add a bit of 'air' right up at **18kHz**. A broad lift at **3kHz** adds some mid tone, and a gentle push at **150Hz** gives the bottom end a bit more welly.



4 > Our final insert is the Waves L3 16-band limiter. We use this for transparent removal of the remaining big transients, so that we can make a louder digital print of our master audio file. On this occasion we're leaving the EQ flat and using the **16-bits Quantise** on the output to bounce out a CD-quality master.

5 > Here you can see the difference in the waveforms between the raw and mastered mixes. The transients on the mastered mix are literally 'squared off'. We're already at 44.1kHz, so no sample rate conversion is needed. Finally, use an application like Audio Ease Snapper or iTunes to convert your AIF or WAV to whatever quality MP3 or AAC you like.

POWER TIP

> Essential parallel monitoring

To hear the real effect of your mastering, duplicate your mix onto a second track so that one track has the untreated mix and the other has the mastering plug-ins inserted. Assign the outputs of the second track to a return on your monitor controller so that you can A/B the two mixes. Turn down the mastered version to check that the processes you're applying sound better, or whether it's just more exciting because it's louder. If you don't have a monitor return option, use the **Solo** buttons in X-OR mode, so that pressing a **Solo** button on one track cancels a selected solo on another. This A/B comparison is how engineers keep perspective. **cm**

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System requirements

Web www.loopmasters.com

We're spoiling you with over 1000 top-quality Loopmasters sounds - put that in your sampler and smoke it!



DE LA MANCHA MANIC (PC)

Sample playback instrument with randomisation options.

System requirements

PC VST host

Web www.delamancha.co.uk

DESTROY FX GEOMETER

(PC/MAC)

This visually-oriented plug-in enables you to quite literally redraw your sound.

System requirements

PC VST host

Mac AU host

Web destroyfx.com

smartelectronic.com

TOGU AUDIO LINE TAL-FILTER II (PC/MAC)

Multimode filter with multipoint modulation envelope.

System requirements

PC VST host

Mac AU or VST host

Web kunz.corrupt.ch

TWEAKBENCH MINERVA (PC)

Granular generator for the creation of percussive sounds.

System requirements

PC VST host

Web www.tweakbench.com

WHITELABEL TWIN ENGINED VERB (PC)

Multiband reverb plug-in with a separate room and echo effect for each band.

System requirements

PC VST host

Web www.roughdiamondproductions.com

XOXOS FAUNA (PC)

Experimental synth for creating animal voice sounds!

System requirements

PC VST host

Web www.xoxos.net

Demo software

FLUX IRCAM TOOLS (PC/MAC)

Try out this brand-new suite of room-modelling and voice-processing tools. For a full list of demo limitations please see the **Demo Limitations** document in the **Installer** folder on the **cm** DVD.

System requirements

PC RTAS/VST host

Mac AU/RTAS/VST host

Web www.fluxhome.com

FXPANSION GEIST (PC/MAC)

Next-generation sampling groovebox from the creators of Guru. The demo version is save- and export-disabled, shows a nag message every 20 minutes and doesn't include all of the content that you get with the full version.

System requirements

PC Intel Core 2 Duo CPU, 2GB RAM, Windows XP or later, RTAS/VST host or standalone

Mac Intel Core 2 Duo CPU, 2GB RAM, OS X 10.5.8 or later, AU/RTAS/VST host or standalone

Web www.fxpansion.com

IZOTOPE RX 2 (PC/MAC)

A veritable sonic Swiss Army knife, the amazing RX2 is packed with sonic restoration and processing features. The trial version is save-disabled.

System requirements

PC Windows XP or later, RTAS/VST host or standalone

Mac OS X 10.5 or later, AU/RTAS host or standalone

Web www.izotope.com

KUASSA AMPLIFIKATION ONE

(PC/MAC)

This packed guitar effects suite has a straightforward interface that's designed to be as easy to use as possible. The demo version generates noise every 40 seconds.

System requirements

PC Pentium 4 CPU, RAM, Windows XP or later, VST host

Mac G4 CPU, 512 RAM, OS X 10.4 or later, AU/VST host

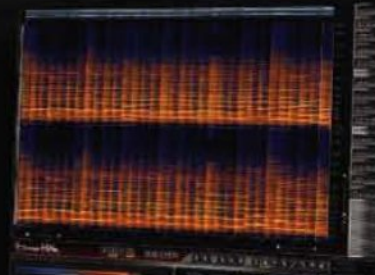
Web www.kuassa.com



Guru 2 by any other name: FXPansion's virtual groovebox, Geist, as reviewed on p98



Read what we think of convolution/algorithmic reverb **SpringAge** on p100, then try the demo for yourself



Repair your tracks with iZotope's sound restoration suite **RX 2**, which we give a going over on p105

NEW SONIC ARTS GRANITE (PC)

Granular texture generator with unique sound-twisting capabilities. With the demo version, save and host recall are disabled.

System requirements

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

Web www.newsonicarts.com

OVERLOUD SPRINGAGE (PC/MAC)

Spring reverb with three models and a mix of convolution and algorithmic tech. The demo is save-disabled and adds noise to the output.

System requirements

PC P4 CPU, 1GB RAM, Windows XP or later, RTAS/VST host

Mac G4 CPU, 512MB RAM, OS X 10.5 or later, AU/RTAS/VST host

Web www.overloud.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.

> the **cm** dvd / full software

>Exclusive full software!

1000 Loopmasters Samples

PC MAC



This massive and diverse library of royalty-free sounds is yours to keep - top tech house producer Dom Kane shows you how to put it to work

> Without great sounds, you're going to have a hard time making great music. On this month's **cm** DVD you'll find an exclusive selection of more than 1000 Loopmasters samples, featuring all the essentials you need to make professional-sounding tracks. There are musical loops, beats, drum hits, multisamples, vocals, pads, leads, basslines, sound effects, percussion and more. That's more than 1GB of content from 32 Loopmasters libraries, including sounds created by cutting-edge

artists such as Deadmau5, Atjazz, Nu:Tone, Dom Kane and Rennie Pilgrim, and covering such diverse styles as house, DnB, lounge, hip-hop, afro-funk, rock, rave and electro. Whether you're an experienced producer looking for new sounds to add to your existing library, or a novice who needs the bread-and-butter essentials to get started, you'll find plenty of what you need right here.

To sweeten the deal even further, DJ, sound designer and producer Dom Kane himself has used Ableton Live to create an

exclusive tech house groove for *Computer Music* using nothing but these samples.

The complete Ableton Live project - straight from Dom's desktop! - is on the DVD, so you can inspect, tweak and pore over every setting. Even better, the next two pages see Dom break down each element of the track and provide some insight into how he gets his ultra-polished sound.

If you don't have the full version of Live, you can load the project into the demo version of the

Ableton's DAW, which can be downloaded from www.ableton.com. The project files are in the **Tutorial Files\Loopmasters Samples** folder on the DVD, and if you don't want to load up the Live project itself, you can grab all the samples Dom's used directly from the **Tutorial Files\Loopmasters Samples\Dom Kane SX Audio** folder.

So without further ado, we'll hand over to Dom and let him show you how it's done. www.loopmasters.com www.domkane.co.uk

Dom Kane and a massive collection of Loopmasters samples!



> Step by step

Dom Kane builds a groove using your Loopmasters samples



1 > As I tend to use a sidechain effect in almost every project, my project template always has a default channel with a muted kick drum in a 4/4 rhythm. This is so that I can feed this signal to any compressor at any time, whether there are audible kicks in the master output or not.



2 > Although I normally use VSTs such as Nerve for my drum patterns, here I've stuck to the standard Drum Rack available in Live. I pick some clean kicks, hats, snares, shakers, and percs, and also add a particularly low-frequency kick drum at the end of each bar. This acts as a sub-bass bassline, and I find it really adds to the depth of the drum groove. Find these hits in the **Various Single Shots** folder.



3 > To get the drum groove sounding much bigger, I use a technique called parallel compression. I keep the main drum channel dry with no compression, then set up another bus channel taking an audio feed from the dry drums. Next, I put some extreme compression on this bus channel. Once I've done this, I slowly bring the compressed channel's **Gain** up until it sounds good.



4 > To give the drum track some extra atmospheric depth, I decide to use the **125_PERCLOOP_73.wav** from the King Roc loops pack. I modify it slightly, removing unwanted sounds by automating the **Gain**. I then pass it through a high-pass filter to remove any frequencies that may clash with the drum channel, and finally add some gentle reverb for atmosphere.



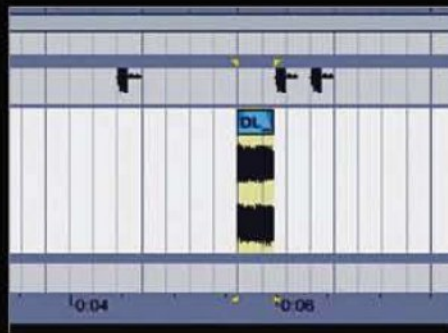
5 > To add to the first percussion part, I use the **XF_128bpm_LP086.wav** from the Deadmau5 sample pack. The loop is two bars long, but I only want to use one of the toms and a few milliseconds of the white noise within the loop. This is going to complement the first percussion sounds. Sometimes less is more, and using sounds sparsely can often give life to a track.



6 > I always like to steer clear of including obvious sounds in my tracks, and loop packs can really help with this. Here, I use a short cut from **JD_128_JOHANN_SMIT_AFIKA_15.wav**, found in the Tribal House pack, and use it as though it were a tom drum, in a fairly percussive way.



7 > The groove feels like it's getting pretty funky, so I decide to take that a step further by using **AJ1_124_C_Tech_House_Korg_Monopoly_Keys_2.wav** from the Atjazz Deep & Analogue pack. I use this as a call and response for the kick I used as a bassline earlier. The deep kick hits between beats 3 and 4, so I use the stab between beats 2 and 3, giving some symmetry to the overall groove.



8 > Next, I start to get a little more creative with the groove of the track. I choose an old school-sounding organ chord (**DL_G#_min_Jem_Organ_chord.wav**) and place it on the fourth beat of an eightbar groove, lasting not quite one whole beat. At the same time, I remove some of the drums and any other sounds where this sound plays. This throws the track dynamics out - in a good way, I hope!



9 > After scanning through the loops, I find another one with an old school chord (**FA_118_C_SYNTHSTABSN.wav**). I throw this into the groove to complement the first set of chords. As before, at certain points in the track I delete some of the drum sounds where this chord plays at the same time.

> Step by step Dom Kane builds a groove using our Loopmasters samples



10 > As obvious as it sounds, it's always worth using something like a reversed cymbal (eg, **DL_Reverse_Cymbal.wav**) at the end of a phrase, as I find it indicates that something is coming to the listener. Sometimes this is all it takes to get a good transition from one phrase to another.



11 > To add some 'tech' to the table, I use one of Jamie Anderson's sounds, **JA_127_G_MUSICLOP_011.wav**, adding some effects to give it more character. First in the chain is a simple delay unit with a small amount of **Feedback**, and a **Delay Time** of only **15ms**. Next is a vocoder, with the **Formant** down at **-32** to give it a metallic character, and then a high-pass filter and sidechain compressor.



12 > We all love a bit of wobbly bass, eh? I use a simple saw hit: **AS_C2_BHms20fb.wav**, from the **Various Single Shots/Bass Hits** folder. I add a fair amount of effects. I use a short stab of the bass at the end of a phrase, but mute the channel. There are no effects in this channel, but I take feeds of it from other places, as follows...



13 > I set up a new channel and take a feed from the dry **Bass Wobble** channel, passing it through a low-pass filter that cuts off at **160Hz**. I then give it some basic distortion/saturation, which will add some tasty harmonics.



14 > I set up another channel that takes the audio signal from the dry bass. On it, I place a band-pass filter, with the low cutoff at **160Hz** and the high cutoff at **550Hz**. This gives me almost two octaves of frequencies. Next I add a simple vocoder with a high **Formant** and then some harmonic distortion. My last step is to add a limiter to the end of the chain, just in case.



15 > As the original bass sound was a sawtooth waveform, it contained high-frequency harmonics. So once again, I create a new channel, this time taking a feed from the original dry bass loop and passing it through a high-pass filter, a vocoder with low **Depth** and mid **Formant**, and a limiter, just in case.



16 > Once these three channels have been created, I adjust the **Gain** of each one until I'm happy. This really is a trial and error process! I then group these tracks together on one bus channel, so that I can add any sidechain or overall effects to the bassline, and treat them as one sound.



17 > Once the bass sounds have been grouped together and each individual **Gain** amount is set to my satisfaction, I add an LFO low-pass filter to the **Group** channel and set its **Rate** to **1/16**. This is what gives that wobble sound to the bassline, essentially by automating the amplitude of the high-frequency harmonics.



18 > And now, the finishing touches - or a lack of them! I never have anything on the master output channel other than a limiter, and as my master **Gain** level is always at around **-5dB**, the limiter pretty much never takes effect; it's just there as a safety precaution more than anything, **cm**

>Royalty-free, pro-quality sounds

2037 **cm** samples



Give your tracks a taste of that high-energy UK garage groove with our 2-steppin' collection of 24-bit royalty-free sounds

The 24-Bit CM UK Garage Collection

The funky sound of 2-step and 4x4 UK garage continues to provide inspiration for musicians in all kinds of genres - check out our **cm Focus** feature on p122 to find out more. To help give your tracks some instant garage flavour, we've commissioned our sample producers to create this sexy, soulful collection of beats, loops, hits and multisamples.

Alex Blanco

320 drum hits
300 part loops
60 loops with no kick
60 full loops

House and garage veteran Alex Blanco's samples take in both

future garage and old-skool early-00s styles, with these loops including classic 2-step grooves and more experimental break-infused rhythms. These beats are supplied as component parts, full loops and loops with no kicks, for easy layering.
www.myspace.com/djalexblanco

Groove Criminals

215 beat loops
118 drum hits
75 instrument loops
35 one-shot FX
54 stabs
9 multisampled basses
5 multisampled synths

The bass and synth sounds in this kit were created using a combination of soft synths and hardware, including the Korg

Monotron, Moog Little Phatty and Roland SH-101. The beats were put together using Native Instruments' Battery, and were swung to get that shuffly UK garage feel.
www.groovecriminals.co.uk

Cyclick

45 bass loops
181 beat loops
90 synth loops
5 drum kits
5 multisampled basses
7 multisampled synths

This garage-tastic selection from Cyclick comprises five construction kits at different tempos, including drum loops created from sampled hits, and synth and bass loops created with the Kurzweil K2600 and Novation BassStation synths.



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



Cyclick have been pounding their Novation Bass Station to bring you the phattest UK garage sounds around

Producer Masterclass Video

Artist **John B**

DnB legend John B shows us how he created the trance mix of *Red Sky*, the original version of which was sampled by Swizz Beats for Nicki Minaj's massive *Pink Friday* album. John also gives away priceless tips on creating epic build-ups, breakdowns and drops.

Web www.john-b.com



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, CMU161/February/11, 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

Synapse Audio Plucked String (PC/Mac)

Specialised synth for creating plucked string sounds

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, stompbox-esque modulation effect

Betabugz Audio Vascillator (PC)

Semi-modular feedback delay multieffect

Blue Cat Audio FreqAnalyst CM (PC/Mac)

Sophisticated stereo spectral analyser

**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.

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

LiquidSonics Reverberate CM (PC/Mac)

Luscious impulse response-based 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



Dominate your mixes with this explosive virtual analogue synth

Combine effects to make a sweeping pad

We rampage through the **cm** Studio in search of synths and effects to satisfy our craving for pads

PC MAC



1 > You can make epic, sweeping pad sounds using the **cm** Studio's ZebraCM in conjunction with effects. ZebraCM has built-in phaser, delay and reverb effects, but here we're going to use separate plug-ins for each to give us more flexibility. Load ZebraCM into your DAW, and program in a MIDI chord.

2 > The default patch's filter envelope settings are hard and percussive, so set both the **Attack** and **Decay** times to **65** for a smooth sweep. Put the **Env2** modulation level in the Filter panel to **96** so it doesn't increase the cutoff level too much. Change the **Voice** mode of both oscillators to **Quad** for more voices and a bigger sound.

3 > That's a pretty simple pad, but it's all we need from ZebraCM. Next, add Sanford Phaser-CM as an insert effect on ZebraCM's track. Select the **Phase Lite** preset, and you'll hear the pad begin to move in a mysterious, pulsating fashion.



4 > The effect is too quick and severe for our needs. Turn the **Feedback** knob down to **16.36dB** and set the **Frequency** slider to **1.074Hz**. If you don't like the stereo movement the phaser adds, you can turn the **Spread** switch off, but we're going to leave it on - the effects we're about to add will make it less obvious.

5 > After the phaser, add KR-DelayCM. We want our delay tempo-synced, so activate the **Sync** button in the Delay panel. Change the **Delay mode** to **PingPong** in the bottom left-hand corner of the interface. Set the top **Delay** knob to **1/4**, and the bottom one will follow suit.

6 > Turn the **Feedback** knob to the right up to **50%**. On playback you'll hear the effect in action, with the delays moving from side to side in the stereo mix. Fine-tune the frequency content of the delayed signal by changing the filter mode to **BP** and setting the **Frequency** to **82%**.



7 > This band-pass filtering gives us a crisper-sounding delay tail. The whole thing could do with bit of depth and mellowing out, so let's add a reverb in the form of Reverberate CM. Select the **Dark Submarine** preset, and change the **Dry/Wet** level to **-3.70dB**.

8 > That sounds good - so good, in fact, that we're going to do it again! Add another Reverberate CM after the first, and this time leave it on the default **Long Plate** preset. If you want this sound to be prominent in the mix but not overwhelm the low end, use EQ to boost the **1kHz** and **6kHz** regions and cut the **130Hz** area.

9 > A great final touch is to add an automated or modulated filter effect after the last reverb; this will sound very different to putting it at the start of the effect chain. Be sure to pick up the next issue of **cm**, featuring the amazing Vengeance Sound Philta CM Edition, which is ideal for soaring filter sweeps. **cm**

Reader music

It's that time of the issue again – our expert producers case their ears over four of your productions



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

MINIMAL CRIMINAL Defeat

Artist Valerio Zhyin
Web www.minimal-criminal.com



> Whatever the genre, dance tracks are either good or bad – and *Defeat* is well up in the former category. Its success can partly be measured by the fact that it holds the attention despite the lack of harmonic modulation – it's a one-chord song. Musically it doesn't get any simpler, with the track relying more on tones than notes.

Despite what Valerio says, the tonal centre of the track is low, so it's still on the dark side. The bassline has a great growl and the two main riffing synths are hard and middle-y with contrasting rolling delays, all combining to create a strong 'we mean it' attitude with slightly veiled menace. The two secondary riffing synths that appear later are more open, and these evolve into more reverbed versions to increase the track's sense of size.

The vocal sample is the only thing that brings any lightness, and it's put in a good space. The excellent middle drop with the intense delay feedback isn't perhaps so light! Some more tonal experimentation around the vocal sample would have been welcome. The production mixes itself, but it's still a very good tough, heavy and clear mix.

What the artist says:

"This is a progressive psytrance track for the morning dancefloor that I made a few years back. Most Minimal Criminal tracks are dark and psychedelic so I wanted to make something more simple, light and less cerebral."

Equipment used Old Gateway Windows laptop, Ableton Live 7, Logic 5.5, M-Audio Quattro interface, Event TR8 monitors, M-Audio Oxygen 8 v2, Ohm Force OhmBoyz, Rob Papen Blue and other VSTs, **cm** samples.

SPACE OFF S.O.S. (Space Off Sound)

Artist Carlo Di Marzio
Web www.soundcloud.com/space-off



> This mesmeric house tune can't fail to draw you in, with its insistent synth stab rhythms layering up through the first few minutes. It's very repetitive, but Italian Carlo weaves a spell over you with some simple filtering and panning and the introduction of occasional peripheral parts. And then, once he's got you, he takes you on a sonic trip.

S.O.S. is verging on deep house territory in places, but the overall sound isn't warm enough to be pigeon-holed as that genre. The more leftfield second half is much the hipper half of the tune, though it slightly lacks focus.

There seems to be a very slight timing issue, particularly in the earlier stages. It's difficult to say what it is but there's a general feeling of something dragging. It's not a quantisation issue; it's more likely something to do with synth envelope attack/delay times, or a loop. Sorting that out would make a big difference to the track's tightness and punch.

The mix's tone is pretty good, but the bottom end could do with attention – the mid bass is big, but lacking early on.

What the artist says:

"S.O.S. (*Space Off Sound*) is a part of my live show that I play to warm up the crowd before a DJ star begins the show. The idea was to set a footprint of what it's possible to do live with coloured loops, vibes by MIDI controls and some VST."

Equipment used MacBook 2.4GHz Intel Core Duo, MOTU Traveler, Evolution 461C MIDI keyboard, Novation Launchpad, Ableton Live 8, Reason 5, Logic 9 for the bounce and EQ.



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.

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Enter our weekly
CM FACTOR
competition for a
chance to get your
track on our DVD.

This month's winner:

System V ft Amy Logan, Reflection

www.facebook.com/computer.music.mag

RICK SCHERZO

Back to the Good Life

Artist Rick Scherzo
Web www.myspace.com/electrickmusic7



> This is one that'll stir up memories for a lot of you – if you've managed to keep your memory intact, that is. *Back to the Good Life* is a classic dance track stuffed with that bursting energy feeling.

What makes this work is the combination of the heavy four-to-the-floor kick drum and the relentless synth riff that's right in

your face from early on. This is supported by background percussion loops and a bassline with a slight counter-rhythm. The sound of the bass doesn't quite work – it's a little poky in the mids and could do with plumping out lower down.

What doesn't work so well are the drops, when the big elements go. The peripheral sounds and instrumental figures don't quite stand up between the heavy sections. They don't have the suspense, drive or build to hold you. There are some good spacey sounds that start to appear – maybe they should come earlier in the drop and build around that.

The overall mix sounds big and impressive, and for the main part it gets the blood going. Biscuits, anyone?

What the artist says:

"Back to the Good Life was created shortly before returning to Ibiza for my annual holiday. It's so-called because it felt like I was returning to a paradise land that I had visited three years previously. Ibiza has given me so much inspiration to write music and gives me the drive to produce outstanding dance music."

Equipment used eMachines E3035 PC with upgraded Foxconn motherboard, 2GB RAM, Pentium Dual Core, Native Instruments Audio 4 DJ soundcard, FL Studio 7, Cakewalk Z3TA+, Vengeance Essential House Vol 2.

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What's wrong with my mix?

Pro producer Mark Frith wallows in the atmospheric sounds of this month's featured artist, almost-but-not-quite trip-hop act Rospy

Producer Mark Frith

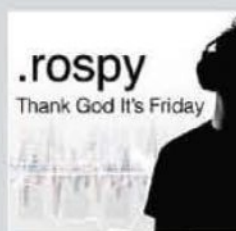


Mark has been playing and producing music from a very early age, signing his first major deal at 14. He's currently in the studio working on an album for Sam Brookes, former singer in The Volt, for Helium Records.

ROSPY

Thank God It's Friday

Artist Rospy
Web soundcloud.com/rosproject



> It's always nice to hear some new music and feel comforted, and that's exactly what happens here for me as the warm choir pad opens with some simple chordal patterns over a grand drum loop. It's kind of trip-hop, but not really – the sort of thing The Aloof were doing back in the mid 90s.

As arrangements go, this couldn't be more straightforward: the track cycles round an eight-bar pattern from beginning to end

and contains only four chords. Despite Rospy's valiant attempts to create variation by instrumentation, I think a musical change would provide relief. Perhaps this should be in the form of a middle section, where tension could be built up before returning to the familiar sonic landscape we already know and love.

This landscape is sculpted from spacious warm pads, big strings and voice patches, all over some very big drums and percussion. There are also a couple of rhythmic, stabbing synth patterns. These ingredients come and go in a very well-mannered order creating gentle builds and flows. It feels like Rospy is struggling to find changes towards the end.

There are some lovely touches that could have been brought out more: the breathy gated cymbal could be up more occasionally, and there's a lovely, fragile single-vocal 'ahh', which is heard clearly in the outro but is inaudible during the track. This sort of thing could provide some intimacy within the rich but impersonal framework of the track, in the absence of a vocal. And on that subject, I really think there should be one.

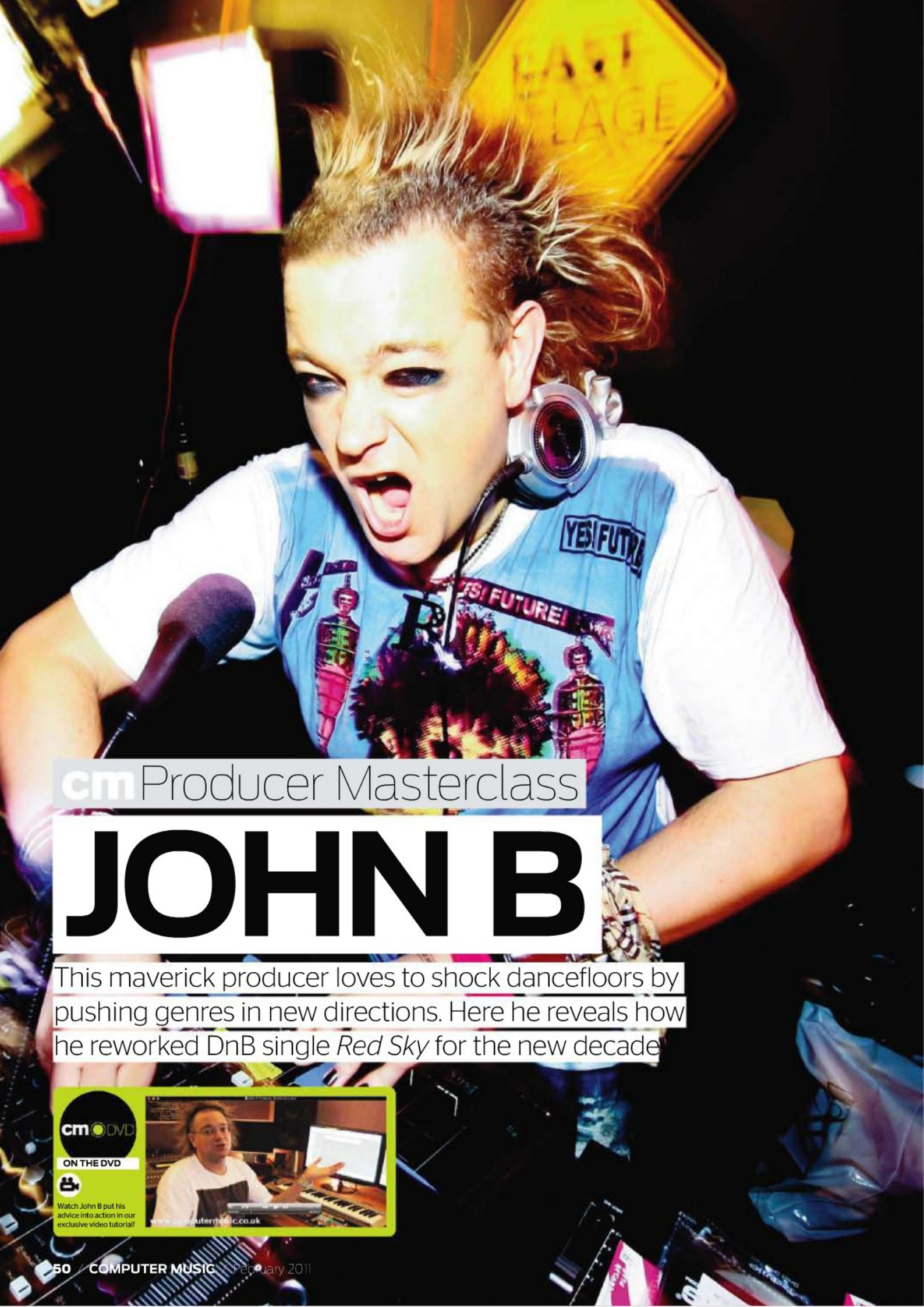
One sonic problem is the chaos that the big kick drum causes. Its fat bottom end creates havoc with the mix compressor and hence the rest of the track. In isolation it sounds good, but I think it needs turning down and the problem frequencies EQing out so that it doesn't do any damage.

The rest of the mix seems to fit well. The sense of depth from the reverbs is particularly successful and the lateral panning movements are a good interest factor. With more thought and development, this could easily become something of value, be it soundtrack or song.

What the artist says:

"Thank God It's Friday invites the listener on a trip, one between inspiration and fulfilment. This track reminds me of Friday evenings, which were the herald of the upcoming weekend and more inspiration."

Equipment used Apple MacBook Pro, M-Audio 410, KRK G2 Rokit 5, AKG K 271 MKII, M-Audio Radium 49, Logic Pro 8, Spectrasonics plug-ins (Omnisphere, Trillian, Stylus RMX), Tone2 Gladiator 2, u-he Zebra2, Native Instruments FM8, T-RackS 3, Waves plug-ins. **cm**



cm Producer Masterclass

JOHN B

This maverick producer loves to shock dancefloors by pushing genres in new directions. Here he reveals how he reworked DnB single *Red Sky* for the new decade



Mixing things up

> DnB legend John B is a producer who marches to the beat of his own drum. After releasing a number of alternately dark and jazzy 12"s on the legendary Formation Records in the late 90s, he produced the old school-style anthem *Up All Night* for Metalheadz, then proceeded to shock the scene with a series of trance-influenced tracks.

Not content with reuniting DnB with its ravey roots, John then indulged his love of 80s synth pop, creating a unique signature sound, which he dubbed electrostep. At a time when most DnB producers were aping the sound of Bad Company, electrostep tracks like *American Girls*, with its deadpan bon mots ("I hooked up once in Orlando / But I was pretty drunk, it could have been a man, though") and catchy synth hooks, were a breath of fresh air.

His love of all things synthetic and 80s isn't just uninformed retro posturing: John has been tinkering with synths since an early age...

Hardware man

"I had piano lessons when I was a kid, and I liked playing the piano. When MIDI came about I realised you could make a whole track on your own - you didn't need a band. Being a control freak, I was keen to make a whole track the way I wanted it. My dad was very supportive: he helped me to get all my first equipment second-hand through Loot and classified ads. He'd buy a set of kit from one guy, keep the bit we needed, then sell the rest off individually to subsidise the kit we wanted.

"I got an Atari St, and my first MIDI keyboard was a Casio CT460. I started recording using some public domain sequencer and then Steinberg Pro 12. I eventually got a Roland D-10 keyboard, Roland R-5 drum machine, Roland S-550 sampler, a Yamaha TX81Z and a couple of

"That's the loop you get stuck in: you spend more time DJing and less time in the studio"

Oberheim Matrix 1000s... There was a point before I moved to the Mac when I had so much outboard, I had three massive racks in front of me. Even when I moved to the Mac it was a Graphite G4, so I was still using a lot of the same hardware synths and samplers."

Now John uses an eight-core Mac Pro to create his music, but since 2006's *Electrostep* mix album, he's been relatively quiet on the release front - instead devoting his time to DJing. That's all set to change this year with the release of a new album and remixes of his 2008 single *Red Sky*, which was sampled by hip-hop producer Swizz Beats



John B's current studio is a whole lot less chaotic than his old setup, which comprised three racks of hardware

for *Here I Am* on Nicki Minaj's *Pink Friday* album. What does John think about that?

"It's good because it gives me financial stability; her album is doing really well. I have a bit more freedom and I don't have to rely on DJing so much. That's the loop you get stuck in: you have a bit of success producing, get loads of DJing invitations and end up all excited about travelling the world, partying and being a DJ. But then you

spend more time doing that and less time in the studio making the music that put you there in the first place. It's a balancing act and it means that's I'm constantly working. I love my work, though, so that's fine!"

Over the page and in the accompanying video on the DVD, John deconstructs his stunning trance mix of *Red Sky*, revealing plenty of production secrets along the way. www.john-b.com

Selected kit list



John recently took delivery of Native Instruments amazing new Traktor S4 DJ controller

HARDWARE

Apple Mac Pro eight-core
PowerCore Express
Roland PC-180A
Native Instruments Maschine
Native Instruments Traktor S4
MOTU 896 FireWire
Yamaha O1V
Sennheiser HD 650
Roland S-750
Rocktron Banshee Talkbox

Mackie HR824s
Genelec 8020Bs
Genelec 7050B

SOFTWARE

Logic 9
Native Instruments Komplete
Access Virus PowerCore
Arturia CS-80V
GForce ImpOScar
GForce Oddity

iZotope iDrum
Korg Legacy
Digital Edition
Spectrasonics
Omnisphere
Spectrasonics Stylus
Spectrasonics Trillian
Antares Auto-Tune
iZotope Ozone
iZotope Trash
Sonnox Oxford Inflator

Taking apart John B's new trance remix of *Red Sky*

1 Kick drum

"With a trance track like this, the kick drum is very important. I'm a big fan of the Vengeance sample libraries, and this is a Vengeance Essential Clubsounds 3 kick drum. Here I've run it through Logic's compressor using the standard kick drum compressor preset, though I've probably tweaked it a bit!

"Then I've added a Channel EQ with a high-pass cutoff. For most of the track it's set to 59Hz, because I didn't want the kick properly booming on the low end. The cutoff is automated to go higher during transitions, and I've automated the volume as well.

"I find you have to be a bit anal with these things when you're doing trance: everything has to be a bit more precise. With normal drum 'n' bass I wouldn't have to go into that much detail."



2 Intro vocal loop

"The intro is a bit spacey, and this particular sound is a mega-reverbed snippet of the vocal that's been looped up. I've sent it to a bus with TC Electronic ClassicVerb on it, with the Send turned up to 1 o'clock.

"It's also got a pumping compressor on it that's sidechained to the kick. It's really quiet in the mix, but little things make all the difference."



3 Vocal

"I didn't record the vocal; my friend Robbie Bronnimann did. He's got an awesome studio with a proper vocal booth and a much nicer mic than me. I sent him the instrumental with an idea of what the vocal line should be like, and he and Shaz Sparks sat down and figured out what the vocals were going to be, then recorded them on his super-nice microphone. Afterwards, he comped them and sent me the finished vocals.



"Robbie usually sends me a dry vocal as well as a version with what he reckons is the best sort of reverb for it as well. On this version I stuck with the simple, raw vocal. I've put a bit of delay and EQ on it, and a little bit of compression. He'll have done that already, but apart from the reverb sends I could have got away with not really doing anything to it. You can tell from the waveform that it's not really hardcore compressed, but the main things are that it's really well recorded and sounds good."

4 Bass

"I've got a quite a hard, techy bass in here, which isn't that normal for trance, but I think it works. The main part of this is an ES2 sound called Real Fat, which I think is a preset, but I probably tweaked it a little bit.

"Then I've got a sub underneath that. I always use the default sound from the EXS24, which is a nice, reliable sine wave. I have Logic set up so that whenever you double-click on the pattern, it opens up the list editor, and depending on whether I want it to sound robotic and 100% correct or not, I'll pretty much always use the velocity limiter function to make the velocity levels consistent. Often I'll give them a fixed note length, too.

"There are a couple of layers over the top of the main bass, which are presets in Massive. Rather than trying to get all the sound out of one sound and using loads of processing on it, I use different layers. For example, if the sound needs a bit of attack, I'll use a simple synth sound with some attack; and if I want proper sub bass, I'll use a sine wave and EQ out those frequencies on the other sounds I'm layering up.

"Working like this makes everything more flexible. I've got several faders for the different elements, so I can balance and tweak them, and process certain parts of it individually. If you've



got the processing power, it's better to make life easier for yourself, rather than trying to squeeze it all out of one software instrument."

5 Edits

"These bits always take forever, but they sound awesome when you sort them out! This particular edit is before the 64-bar point, which is a pretty important milestone - so you've got to step it up a notch. What I do is pick a section of the track I want to chop up, select a bar either side of it - because when you bounce it, it doesn't always catch the beginning - and turn off any plug-ins on the master. Then I bounce the section and replace the original audio and instrument channels with the bounced audio.

"Next, I chop this up and put the different bits on several audio tracks, with different effects on each one. For example, I'll use tremolo to move the audio between the speakers, bitcrusher and EQ for lo-fi effects, and sample delay to get extra width. When you use so many effects like this, the whole thing can end up really peaky. I need it to be loud, so I'll always whack a limiter on it to sort out the peaks."



6 The breakdown

"Instead of cutting out sections of the drums and other parts before a breakdown, I either fade them out or use a filter. In the lead up to the big breakdown here, I've faded out the kick drum's volume and used the same low cut automation as I did earlier in the track.

"The bass is fading out too, and at the same time that everything is going down, all the swooshes and things are coming up. A lot of these are Vengeance samples, and I've added a jet sound that gives it stereo movement. I tend to keep layering them up till it sounds right, then add a big boom sample when the breakdown hits.

"The piano that comes in on the breakdown is the EXS24 grand piano. I had the Steinberg one for a while, and the Native Instrument grand piano, but they don't sound too different to the Logic library samples, which are absolutely awesome. When I did this track the first time around, I actually went through loads of really good grand piano libraries that load 5GB or so of samples. They sounded cool, but the EXS24 one fitted better and sounded better.

"There have been times in the past when I've used those big sample libraries, and you just have to bounce them down anyway to save processing power and memory. Then you lose flexibility later on in the track if you



As well as his production work and running Beta records, John has a hectic international DJing schedule



want to change the notes or make a subtle change in the volume.

"The piano has a bass pad underneath it to beef it up, and I also used a mixed choir patch from the Logic library. This track was done on Logic 7 originally, and the Logic libraries were a lot older then. There are loads more choirs in the new Logic that are really good, but I like this choir sound because it's a lot like the *Blue Monday* choir: a bit synthetic rather than 100% real. It sits well in the mix and fills a nice range in the frequency spectrum."

7 Trance synths

"In the second half of the breakdown, everything fades down to nothing and a new synth comes through, which is from the ES2. The filter cutoff slowly rises from virtually nothing, and the send to the main reverb bus is automated to rise up, so it starts off dry and gradually builds. Then there's a big impact and a sound called Big Trance from the ES2 comes in with some booms, jets, crashes and a rave horn.

"Here's a trick I learned years ago: when you want DJs to do rewinds of your track, put in a crowd cheering sound just as it drops. The DJ hears it and thinks the crowd is cheering; the



crowd hears it, so they start cheering; plus, it sounds quite good! This crowd sample is from an old rave track, and I've put a tremolo on it, so it moves in stereo and disorients you.

"On the first synth, I've got some sidechaining going on - you can hear it pumping ever so slightly. Because this is the main synth line that's going when everything kicks off, it has to pump. Before the drop is a crucial time, because you need all your crescendos and whooshes to come in, but you also need to leave enough headroom so that when the kick and everything comes back, it doesn't sound like it's all just swallowed up. One thing I like to do with the main synth is bring the filter down just for a couple of bars before the drop - then you can bring it straight back up on the drop, which helps get that impact. There are a few other things I automate down a little bit, like the reverb, just so it's not so mushy when everything is in there."

8 The outro

"You can get away with finishing a track by just muting a few things, so that it just gradually strips down. That works well for DJ-friendly tracks, but I've got another method that I use quite a lot instead.

"Instead of just fading the volume out, I like to automate alternative effects. I'll select four bars or eight bars at the end of the track, bounce them and replace the original parts of the track with the bounce. I can then add effects to the bounce's audio track that effect the whole track at once. The plug-ins I've got running here are a bitcrusher and a low-cut filter, which gradually cuts more and more bass out. I've also automated the downsampling on the bitcrusher to crush the track more and more.

"As well as that, I've faded the volume out a little bit, and automated the send, which adds more reverb to the track. I would never normally do this to the whole track, but it helps to dissolve the track away at this point. At the very end I give it a good push on a bus with a Tape Delay, though I turn off the flutter on that effect because it adds a weird pitch thing that I don't want to hear at this point.

"When you drop the bounce in, you have to be careful that the transition is seamless and the volumes match, because having these effects on the audio can affect the volume level. I've added some rain and thunder noises right at the end of the song; that's a bit of a cliché, but the track is called *Red Sky*, so it's all right, really!" **cm**



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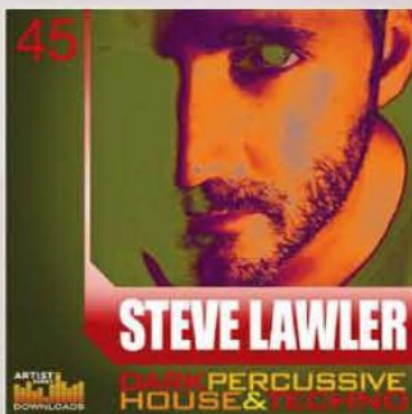
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EXTREME FREEWARE!

We fire up five of the craziest free plug-ins money can't buy in a quest for sounds that couldn't be made using anything else

> **Plug-ins come in all shapes and sizes these days. Among the mind-boggling array of instruments available for free online, you'll find synthesisers, drum machines, samplers, sound modules and step sequencers. The range of effects on offer is even greater, encompassing delays, reverbs, distortions, dynamics processors, harmonisers, de-essers, vocoders, spectral processors and more.**

This overwhelming ocean of virtual instruments and effects ably covers pretty much every conventional sound and process you could possibly need in your day-to-day music production endeavours. Distortion alone

comes in a huge variety of flavours, from the warm, subtle colour of an analogue tube model to the lo-fi sonic-destruction of a digital bitcrusher. But what about going properly beyond the norm and variations thereon? Does the world of freeware offer anything in the way of surprises?

Here, we aim to seek out those plug-ins that take a different approach. From a unique take on the traditional to the truly madcap, these devices conjure, twist, mangle and transform sound using unique methods, and one rarely bears any similarity to the next. But there is one thing that these plug-ins certainly don't do, and

that's pander to any sense of convention. Each operates in its own singular, eccentric manner and won't let anyone tell it otherwise.

With music technology now so readily available, it is becoming increasingly difficult to make your music stand out from the crowd and find new sounds to stake a claim to. One surefire way to break away from the mainstream and inject originality into your compositions is to use tools and techniques that nobody else has discovered yet. With crazy tools come crazy ideas, so read on to discover how you can get inspired by our pick of the weirdest, most wonderful free plug-ins on the net.



SUPER DESTROY FX GEOMETER

PC MAC



Use waveform geometry manipulation to create a broad range of effects with this nutter of a plug-in

Geometer is a visual-orientated waveform geometry plug in. It's been around for quite a while, but it still remains one of the most bizarre effects available.

The incoming audio signal is processed in segments, called 'frames' or 'windows'. Geometer analyses the audio data in each window and marks out a series of landmarks. Once these have been acquired, a number of operations can be performed to add, remove or change them. At the final stage, the landmarks are used to redraw the waveform. Geometer can do this in a variety of ways, and the results can sound similar to the original or nothing like it.

Although the principles behind Geometer are quite complex, the GUI is easy to work with. However, you do need some understanding of its internal operation to get the most from it. Helpfully, every control features an explanatory tooltip telling you what it does.

At the top of the interface is a waveform display that gives a visual representation of how the signal is being altered. Below this are the three stages of operation: Generate Landmarks, Mess Them Up and Recreate Waveform. At each stage is an image that indicates how that stage will process the data, and a slider that offers some control over the

process. In addition, there are two other images that set the size and shape of the processing window.

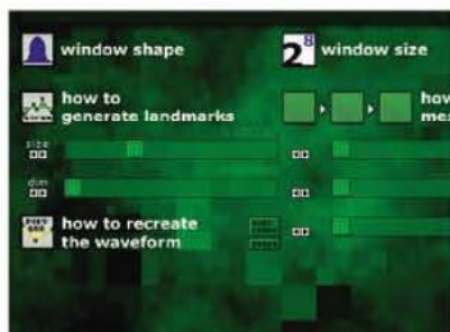
Geometer is capable of producing a mind-boggling array of effects, including lo-fi distortion, pitch shifting and resynthesis. It's important to remember that Geometer's output is highly dependant upon the incoming audio signal, so you may find that the end result doesn't sound anything like you expect it to.

For this walkthrough, find a drum loop that has clear separation between hits, since Geometer also responds to silence. A hip-hop or rock loop should do the trick.

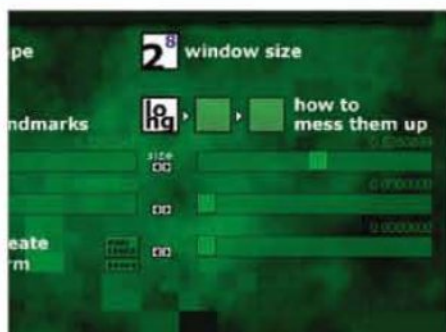
destroyfx.smartelectronix.com

> Step by step

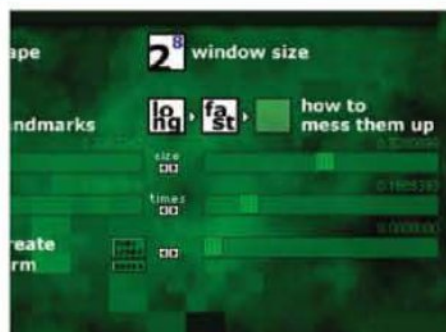
Making singing beats with Geometer



- 1 > Get your drum loop playing and add the Geometer effect to its mixer channel. Geometer's parameters all default to 0, so it has no effect on the signal when first launched. Click the **How to generate landmarks** image to change it to **Dx/Dy**, then set the slider beneath the image to **0.3202**. This will create new landmarks whenever the signal falls below the 0.3202 threshold.



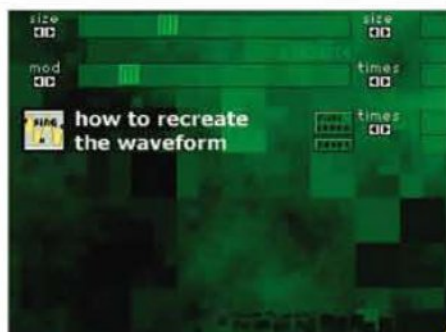
- 2 > In the next three steps, we're going to alter the landmarks. Next to **How to mess them up**, you'll see spaces for three images. Set the first image to **Long**. Longpass mode removes landmarks that don't fall within a certain distance from the previous point. Adjust the first slider underneath **How to mess them up** to **0.5280** to set this distance.



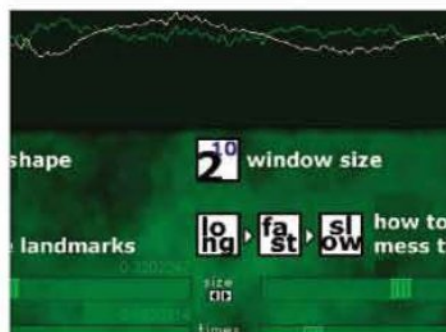
- 3 > Set the second image to **Fast**. In Fast mode, the time between each landmark is reduced, effectively squashing them together. If necessary, the landmarks are repeated until they fill the frame. The time is reduced according to the level of the second slider, so set it to **0.1685**. You can think of this as compressing the points along the X-axis.



- 4 > Set the third image to **Slow**. This is the opposite of Fast mode, in that the points are stretched along the X-axis. Specifically, the amount of time between each point is increased and any points that are stretched beyond the length of the frame are discarded. The third slider controls this increase, so set it to **0.8539**.



- 5 > Now we need to determine how Geometer will redraw the waveform. Set the **How to recreate the waveform** image to **Sing**. In this mode, Geometer will replace the waveform at each segment using one cycle of a sine wave. The slider above the image controls modulation, so set it to **0.1629**. Increasing this amount will raise the volume of the signal.



- 6 > Geometer is singing in the wrong register, so we need to alter the window size. Set the **Window Size** to **10** to bring the pitch down into the bass area. You may want to take it one step further and set **Window Size** to **11** for a deep sub-bass. Finally, try altering the **Window Shape** to inflect a different timbre.

TWEAKBENCH MINERVA PC



Build bonkers rhythm parts from microscopic grains of sound with Tweakbench's powerful percussion synth

When you find that the sample-based approach to creating rhythm tracks just isn't cutting it, synthesis is the way to go. And if you really want to push the boat out, go granular!

Minerva uses granular synthesis – specifically, 'wavelet' synthesis – to generate percussion. Sounds are broken down into minuscule fragments called grains, usually between 10ms-50ms in duration, which are then reorganised to form new sounds.

Minerva's GUI is pretty straightforward, centring on six sound generators, called Units. Each Unit generates its own percussive sound and is triggered

using white keys C3 to A3.

Sound generation begins with the selection of one of 80 source 'wavelets'. There are 40 short wavelets for traditional percussive sounds and 40 longer wavelets that can be used to produce more sustained (but still percussive) sounds. Parameters in the granular processor enable the user to control the pitch, grain pitch, grain size and grain rate, offering access to a vast range of timbres. These parameters can also be randomised. Finally, the signal is passed through a bitcrusher for an injection of lo-fi distortion.

Before we get into the walkthrough, we should point out

that Minerva doesn't display the value of its parameters in its GUI. While some DAWs – such as Ableton Live – will give you access to parameter values through their 'standard' interfaces, others won't. With this in mind, we'll refer to each setting as a percentage, rather than a specific value.

On with the walkthrough, then. Minerva is capable of creating a huge range of abstract percussive tones, so it's often best to think outside the box when designing sounds with it. In the interest of clarity, however, we're aiming to create granular versions of more traditional drum sounds here.

www.tweakbench.com

> Step by step

Generating granular percussion with Minerva



- 1** > Let's start with a kick drum. In Unit 1, set **Source** to **15** and **Length** to **Short**. Source wavelet 15 is capable of producing a solid low end. Our sound is more like a snare drum, though, as the pitch is set too high, so set **Pitch** to **15%** and **G.Pitch** to **20%**. To add depth to the bass, set **G.Size** to **25%** and **G.Rate** to **20%**. Finally, set **Crush** to **5%** for a touch of lo-fi distortion.



- 2** > Next, a hi-hat. In Unit 2, set **Source** to **39** and **Length** to **Short**. Source wavelet 39 has little bass and a nicely distorted top end, ideal for our purpose. Set **Pitch** to **60%** and **G.Pitch** to **40%** to bring the pitch into the correct range, then set **G.Size** to **30%** and **G.Rate** to **50%**. Finally, set **Crush** to **0%** for a clean output.



- 3** > Next, we'll make a snare sound. In Unit 3, set **Source** to **14** and **Length** to **Short**. Source wavelet 14 has good bass and treble, and the punch required for a snare drum. Set **Pitch** to **50%**, **G.Pitch** to **35%**, **G.Size** to **10%** and **G.Rate** to **2.5%** to give our snare drum a touch of ring. Finally, set **Crush** to **5%** for a tiny amount of lo-fi distortion.



- 4** > Now for some tuned percussion. In Unit 4, set **Source** to **16** and **Length** to **Short**. Select source wavelet 16 – it has similar characteristics to wavelet 14, which we used for the snare drum. Set **Pitch** to **70%**, **G.Pitch** to **40%**, **G.Size** to **99%** and **G.Rate** to **73%**. This setup 'expands' the grains, giving us a more or less constant tone. Set **Crush** to **0%** for a clean output.



- 5** > Let's imitate a drum roll. In Unit 5, set **Source** to **2** and **Length** to **Long**. Using a long wavelet enables us to create a sustained note. Set **Pitch** to **70%** and **G.Pitch** to **20%**. Then set **G.Size** to **10%** and **G.Rate** to **60%**. This separates the grains, giving us a roll effect. Set **Crush** to **0%** for a clean output, and reduce the **Volume** to **80%**.



- 6** > Finally, let's have a go at creating some effects. In Unit 6, set **Source** to **6** and **Length** to **Long**. Then, set **Pitch** to **10%** and **G.Pitch** to **100%**. This combination is the key to creating extended effect sounds. Set **G.Size** to **55%**, **G.Rate** to **98%**, **Crush** to **20%** for a touch of lo-fi distortion and **Volume** to **50%**.

WHITELABEL TWIN ENGINED VERB

PC



If you're looking for a reverb plug-in that goes beyond conventional ambience, you've come to the right place

A dual-delay, dual-reverb effect with a built-in enhancer, Twin Engine Verb's aim is to create abstract delays and spatial effects. A number of things distinguish it from your average reverb plug-in.

The process begins at the reverb stage. First, the effect receives a damped echo as the audio source for each room. This signal is separated via a crossover: Room One processes the lower band of frequencies and Room Two processes the upper band. Following the reverb stage, the audio signal is then passed to the Enhancer, which uses a variety of distortion, dynamic processing and filtering effects to further modify it.

Twin Engine Verb's GUI is well designed, but does have a lot going on in a relatively small space. On the front panel are three control sections, each containing a multifunction dial combining all of the major parameters for that section. For example, in the Room One section, the centre wheel controls room size, the middle wheel controls the mix between echo and reverb, and the outer wheel sets the room width. Additional parameters are located above and below the dial.

Twin Engine Verb also features the multipurpose Metering Scope View, with extended controls and various metering displays. The

Waveform, Scope and Response Meter views give visual representations of the output signal via VU meters and a scope. The Randomiser view enables you to randomise groups of parameters or all parameters at the same time. The Balancer/FSU view has balance and distortion settings, while the Width Manipulation view houses a four-stage graphic compander and a correlation meter.

In this walkthrough, we're going to start with a preset and design a surreal, distorted reverb, converting a generic drum and bass loop into a noisy monster.

www.roughdiamondproductions.com/whiteLABEL

> Step by step

Designing distorted reverb using Twin Engine Verb



- 1 > Get a drum loop running and add Twin Engine Verb to the channel. Select the **Fireworkz** preset from the list and set the Screen Mode to **Width Manipulation** view. First, set the **Mid Delay** to the centre - this will also return the **Side Delay** to the centre. Then, set **Mid Gain** to **60%** and **Side Gain** to **40%**. Finally, drag the last point of the **Side Dynamics** graph down to about the halfway point.



- 2 > Set the screen mode to **Waveform** view so you can see the parameter values. We'll set Room One's parameters first: adjust the **Size** to **6.25** and **Width** to **6.95**. Bringing the first reverb closer to the centre creates a greater sense of unity. Then, set the **Mix** to **Echo 100/Verb 70** to give the echo part of the reverb emphasis.



- 3 > Now let's set up the parameters for Room Two. Set the **Size** to **2.15** and the **Width** to **4.80**. At the moment the reverb sounds far too bright, so let's use some damping to allow only the lower frequencies of Room 2's reverberation to pass. Raise the **Damping** parameter to **92**.



- 4 > Next, let's delve into the Enhancer, the parameters of which are located on the third dial. First, reduce the **Verb Enhancer** to **5.50**. This will make our reverb sound smoother and more subtle. Then, reduce the **Room Dampening** to **0.00** to allow a wider range of higher frequencies to pass.



- 5 > Set the screen mode to **Balancer/FSU** view, giving us access to the balance and distortion parameters. Set the **Room One Balance** to **-1.50** and the **Room Two Balance** to **2.50**. This will enhance the stereo perception of the reverb, making it sound much wider. Also, set the **Output Balance** to **0.20** to centralise the overall effect.



- 6 > In the Balancer/FSU View, we can also edit the distortion parameters. First, let's add a bit of distortion and noise. Set **Distortion** to **3.00** and **Follow Noise** to **5.00**. The distortion sounds too crunchy in this case - to improve its timbre, set the **Threshold** to **5.00**.

DE LA MANCHA MANIC PC



Randomise your way to new rhythmic flavours by letting this drum machine do the hard work for you

The underlying principle of Manic is fairly simple, yet the plug-in is capable of producing surprisingly complex rhythmic sequences.

Manic is a sampler/drum machine with eight sample slots. Its unique feature is that the user doesn't have direct control over when the samples are triggered. With the correct randomisation settings, Manic can conjure up great sequences that you'd never enter intentionally.

The GUI is divided into three areas. On the left-hand side are the sample banks and their Probability settings; at the top right are the global randomisation and delay parameters; and below that are the

sample randomisation settings.

The Global Settings section determines the level of resolution that Manic works at. The plug-in syncs to the host project tempo, and hits (samples) are placed using the Hits/Beat setting. A setting of 1.00 would instruct Manic to place hits on the beat only, while a setting of 4.00 would extend the resolution to four hits per beat. The Swing parameter randomises the timing of each individual hit.

The sliders next to the sample slots set the probability that each sample will play, and the 'd' buttons next to those route each sample to the delay effect.

The likelihood of the delay

affecting each sound is controlled via the Delay Probability setting, while the delay time is set using the Hits control. Feedback and Cutoff parameters determine the length and timbre of the delayed signal.

Finally, we have the randomisation options for each sample. Manic doesn't feature velocity layers or key switching. Instead, you can randomise the volume, pan and pitch of each sample. You can also have the samples play backwards, if desired.

Here we're going to create a randomised percussion sequence. You'll need a set of drum hit samples to load into the plug-in to get going. www.delamancha.co.uk

> Step by step

Generating random percussion with Manic



- 1 >** To begin, select the **Blank** preset. First, we need to set the global parameters - these will determine the 'boundaries' within which our random patterns will be generated. Set **Hits/Beat** to **2.00** to tell Manic that drum hits can be generated on either the beat or the half-beat. Set the **Swing** to **0.5** to slightly randomise the timings of some of the hits, in a similar way to a humanisation effect.



- 2 >** Load a kick drum sample into slot 1. Set the **Probability** to **20**, **Vol** to **6.0** and **Vol Rnd** to **4.5**. Our bass drum will now strike on 20% of the note divisions specified by the **Hits/Beat** parameter, within a slightly randomised volume range. Our **Vol** parameter is only a guideline - adjust it to an appropriate volume for your particular drum sound.



- 3 >** We load a tom tom sample into slot 2 and set its **Probability** to **15**, **Vol** to **5.5** and **Vol Rnd** to **10.0**. The tom will occur slightly less often than the kick drum, but the variation in volume will be much greater. Next, set **Pan Rnd** to **0.5**, **Pitch Rnd** to **5.0** and **Pitch Quant** to **5.0**. The pan will be slightly randomised and the tom will occasionally play five semitones higher or lower than its default pitch.



- 4 >** Let's bring the delay effect into play. Set **Delay Prob** to **50**, so that the processor is only applied to half of the sounds passing through it. Set **Hits** to **0.70** - this determines the delay time in conjunction with the **Hits/Beat** parameter set in step 1. Set **Feedback** to **3.00** and **Cut Off** to **7.0** to add a low-pass filter sweep to the delay.



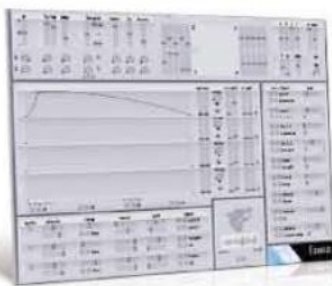
- 5 >** Load a closed hi-hat sample into slot 3 and set its **Probability** to **65**, **Vol Rnd** to **7.5** and **Pan Rnd** to **1.5**. Turn the delay effect on by clicking **d**. Then, load an open hi-hat sample in to slot 4, set its **Probability** to **10**, delay on, **Vol** to **8.0**, **Vol Rnd** to **10.0**, **Pan Rnd** to **1.5**, **Pitch Rnd** to **0.2** and **Rev Rnd** to **1.0**. The **Rev Rnd** setting reverses the sample.



- 6 >** Load a crash cymbal sample into slot 5 and set its **Probability** to **5**, **Vol** to **4.5**, **Vol Rnd** to **8.0**, **Pan Rnd** to **1.0** and **Rev Rnd** to **0.5**. Finally, load a snare drum sample into slot 6 and set its **Probability** to **25**, delay on, **Vol Rnd** to **4.0**, **Pan Rnd** to **1.0**, **Pitch Rnd** to **2.0**, **Pitch Quant** to **2.0** and **Rev Rnd** to **1.0**. And there you have it - your own randomised drummer!

XOXOS FAUNA

PC



Give voice to your animal side with this extraordinary waveguide synthesiser

Fauna is a unique instrument designed for the synthesis of abstract and animal voices. It uses a physical modelling technique called waveguide synthesis to generate its raw sounds. This involves the use of delay lines to model the transmission of sound through the vocal tract. A number of parameters describe the shape of the tract and emulate its acoustic properties in five different segments. Up to nine modulators can be assigned to further enhance the simulation of organic forms. These include note velocity, key scaling, LFOs, envelopes and the mod wheel.

At first, Fauna can be quite overwhelming – it's home to a

number of parameters that will be unfamiliar even to experienced synthesists. Along the top panel are the parameters associated with the base-level sound generation or physical modelling aspects. Many of the controls are described in terms of the vocal tract model, so you'll find such things as Pressure, Length and Tension. To the right is an X/Y pad and four sets of five sliders that describe the shape of the five vocal tract segments. The X/Y pad can be used to morph between the four sets for immediate dynamic control of timbre.

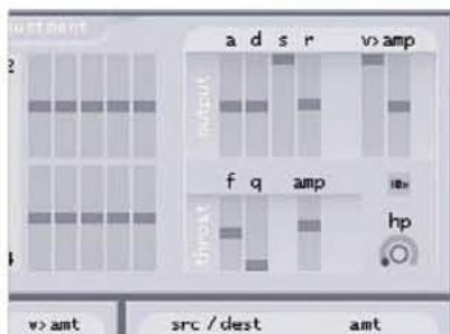
The rest of the synth's interface should be at least vaguely familiar. The other parameters are all for

modulation and routing. Fauna's modulation and sound-shaping capabilities are extensive, including four multistage envelopes and three dual-contour LFOs. For routing, you've got nine sends and two 'splits', which enable modulators to be routed to multiple parameters.

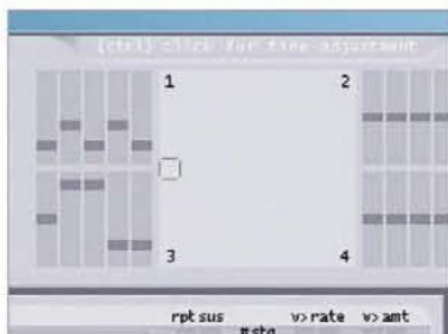
Fauna doesn't display its parameter values, so we're using percentage descriptions in the walkthrough. While it was originally built to generate vocal sounds, it's more than capable of producing excellent pad and bass tones, too. The movement, detail and variation can be far more interesting than that of more conventional synths.

www.xoxos.net

> Step by step Making a pad with Fauna



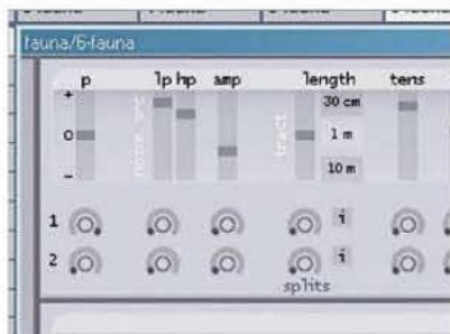
- 1 > To begin, launch Fauna and select the **Pitch Tracking** preset. In the ADSR envelope, top right, set the **Release** stage to **50%**. To the right of the envelope are the amp settings. Set **Velocity** to **100%**. In the Throat section below the envelope, set the **Q** to **0%** and reduce the **HP** filter to **0%**.



- 2 > In the top panel, there's an X/Y pad surrounded by four sets of five sliders (labelled 1-4 on the X/Y pad). Set the sliders in set 1 to the following values: **15%, 40%, 15%, 40%, 15%**. Set the sliders in set 3 to the following values: **50%, 90%, 90%, 20%, 20%**. Using the X/Y pad, you can morph between the two timbres. Set it somewhere between sets 1 and 3.



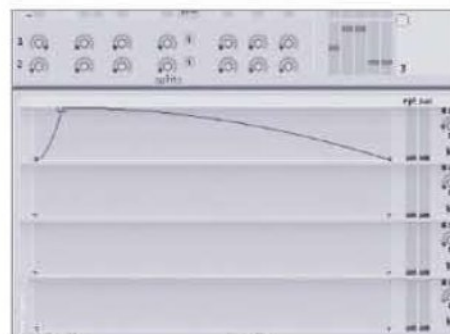
- 3 > The LFO section can be thought of as six LFOs arranged in pairs (although in reality, it's a trio of dual-contour LFOs). We're going to use LFO 1 in the third pair. Set its **Rate** to **75%** and **Wave** to **65%**. This **Wave** setting gives us the 'dip' curve (see the Fauna manual for more info on the instrument's LFO shapes). Set the **Dest** to **Trans** and **Amount** to **60%**. For LFO 2 in the third pair, set the **Amount** to **0%**.



- 4 > Next, let's set up the Noise Generator. We'll use this to introduce a breath-like sound, adding a touch of organic 'realism' to our pad. First, set the filters to allow only a narrow band of frequencies to pass, with **LP** at **90%** and **HP** at **75%**. Finally, set **Amp** to **30%** – we'll modulate this setting later.



- 5 > The modulation routing section is on the right hand side, in four groups (A-D). We can use our keyboard's mod wheel to control several parameters at once, giving us a high level of dynamic timbral control. Set the **Source** for all three in D to **Wheel**, and the remaining settings like this: **Dest - trans, Amount - 65%, Invert - on; Dest - y, Amount - 100%, Invert - on; Dest - noise.amp, Amount - 65%, Invert - off.**



- 6 > In the envelope section, set envelope A as shown in the image above, and put its **Rate** to **50%**. Finally, in modulation group A, set the two modulations as follows: **Source - Env 1, Dest - pressure, Amount - 30%, Invert - on; Source - Env 1, Dest - throat.f, Amount - 30%, Invert - off.** And you're done! **cm**



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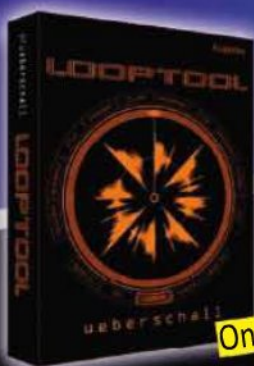


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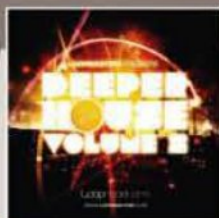


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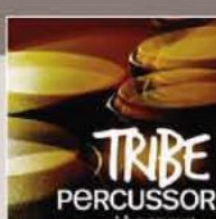
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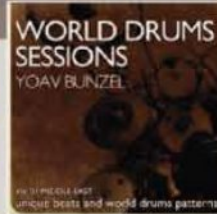
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FADE AWAY

You might think you've already got fades down cold, but look past the obvious, and this seemingly simple process has hidden depths...

> It seems like such a simple thing. You've recorded your track, arranged it exactly the way you want it, applied the requisite effects and carefully mixed everything together. All you need to do now is fade it out at the end - and possibly in at the start - and you're done. Simple, right?

In practice, yes. But while creating them is a perfectly straightforward process, fades can have a huge impact on the mood and feeling of your track. There's plenty more you could be doing with the fade function beyond just clicking and dragging a straight line. A basic fade-in may only take a couple of seconds to apply, but spend a little bit more time on it and you'll find that you can create a truly memorable opening (or closing) to your track.

That's where we come in. In this guide, we're going to explore a variety of different ways in which you can control your fades, and explain just why they can be such useful production tools. Like so many aspects of music making,

much of this is down to your imagination. Think of this article as a starting point: we'll show you how to combine fades with various effects in order to inspire thought and experimentation.

Fade for thought

When combining a fade with an automated EQ plug-in, for example, you'll find that you can instantly create more interesting spaces in your music; and when used in conjunction with a touch of reverb, a fade goes beyond being a simple entrance/exit strategy and becomes a very elegant mixing tool. You can have a lot of fun emulating tape and record player-style fades, which instantly add another dimension to your sound. And of course, no discussion of fades would be complete without talking about crossfading. While we can't claim to be able to make you an expert DJ, we can show you how to seamlessly blend sounds in your DAW, using nothing more than the basic tools that are built into it. So, let's get fading...



The importance of fading

While the actual act of creating a fade is supremely straightforward, it can still be carried out poorly. If done well, a fade can have a massive impact on how your track sounds and the way that individual instruments sit in the mix.

Track-wide fades are primarily used at the end of songs, but even this apparently unimaginative application requires you to make some decisions that will shape the feel of the fade. For example, what kind of curve will the fade have? Will it be a sudden drop out, or will the track fade out over a long period of time? These seemingly simple decisions will have some effect on the kind of track you

produce. It could be the difference between a genuinely poignant track and one with a sharp fade that makes any emotion seem insincere and easily forgettable.

Tricks of the fade

It's when you start using fades on individual instruments within a track that things start to get really interesting. Let's say you have a huge guitar riff over a chorus. If you cut the guitar riff rapidly at the end of the chorus, then use a fade to quickly bring it up to full volume just before the lead singer starts the verse, you'll get a really striking effect. This tactic was used brilliantly in Israeli heavy



In the old days, fades had to be applied in real time as part of the mixing process using the faders on your hardware mixing desk

metal band Orphaned Land's recent tune *Sapari*.

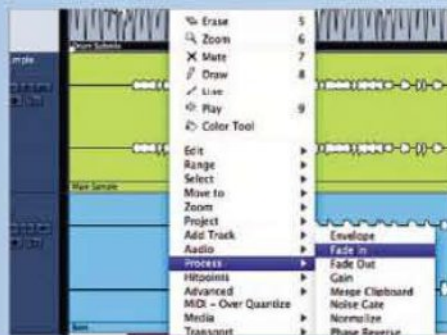
One of the best – and most under-exploited – uses of fading is the creation of space. Combine a fade with a little bit of reverb or EQ

and you can quickly simulate the sonic effect of entering a club or moving quickly away from a sound source – essential if you want to place your listener in a particular environment or sound space.

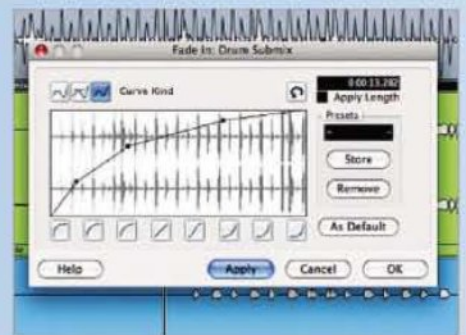
> Step by step Straightforward fade-ins and fade-outs



1 > Putting a fade-in or fade-out on a piece of audio is easy. In most DAWs, you simply click and drag the top corner of an audio region to create a fade, making it as long or as short as you like. You'll see a line representing the length of the fade, and the waveform might change to reflect the effect, too, depending on your DAW. (Audio on the DVD: **BasicFade.wav**.)



2 > This kind of standard fade is very easy to do, but if you're aiming for subtlety, it can be clunky. Most DAWs give you the option to customise your fade. In Cubase, right-click the segment and select **Fade In** or **Fade Out** to open the Fade Editor.



3 > Cubase gives us access to a variety of different curves, all enabling us to bring the audio up or down in a way that suits our track. Our straight line fade sounds a little artificial, so we've added in some extra curve using one of the preset buttons, which makes quite a difference to the drum pattern. (Audio: **CurveFade.wav**.)



4 > Hankering for even more control? You can always use regular volume automation to add your own notes and shape the fade as you like, but why not make the process as easy as possible? Start by loading a preset in the Fade Editor, then simply add additional points to the line as you would with automation to make the shape you want.



5 > In Cubase, once you've selected and applied your fade curve and exited the Fade Editor, you'll only be able to adjust the length of the fade. If you want to tweak the shape later on, you'll have to go into the editor again.

POWER TIP

> Subtle secrets

One thing that might strike you as you're tweaking your fade curve is how little difference the curve itself seems to make. Unless your fade happens over a longer period of time or is very pronounced, a straight line fade will sound very similar to a basic curved fade. Rest assured, though, that there is a difference – and although it might not be immediately apparent, it can have a lot of impact on how natural the fade sounds. This is especially the case if your track is designed to start or end softly, or you have several instruments fading out one after the other.

> Step by step EQ/fade tricks



- 1** > One of the best ways to make an impact with a fade is to combine it with an EQ. To do this, you're going to have to crack out some automation. First, draw in your fade. In this case, we draw in a long, straight fade across the first four bars of our track, right up to where the drums kick in.



- 2** > Open up an EQ - any will do - and set it up as a low-pass filter. Bring the cutoff frequency down as low as it will go, as in the picture above. Make sure you've enabled automation write in your DAW, then hit **Play**.

POWER TIP

>Join the Q

Although high- and low-pass filters are the most obvious partners to EQ fades, there are other things you can try in this area, too. Activate a frequency band on your EQ plug-in and enter really high **Gain** and **Q** settings, making an enormous spike. Next, turn your monitoring level down to protect your speakers, and automate the EQ as you sweep the spike from the low to high frequencies, or vice versa. Combined with the fade, this will produce a spaced-out, trippy effect. Don't forget to drop the spike to a normal level as soon as the fade is complete.



- 3** > While the track is playing, move the cutoff slowly towards the high frequencies, reaching the highest point just as the fade ends. The result should be an atmospheric swooping effect as your track fades in. This works particularly well if what you're fading has plenty of low-end to begin with. (Audio: **SwoopFade.wav**.)

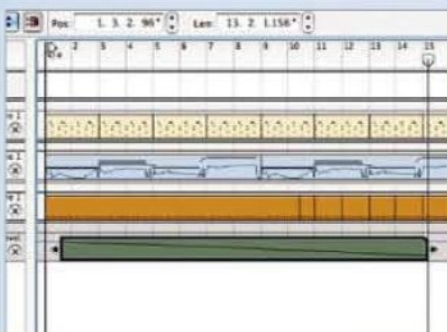


- 4** > You can try this with a high-pass filter too - it will create a completely different effect. Try doing it with some bassy drums kicking in right before the automated fade hits its apex, as we have here - this will give the effect maximum impact. (Audio: **HighFade.wav**.)

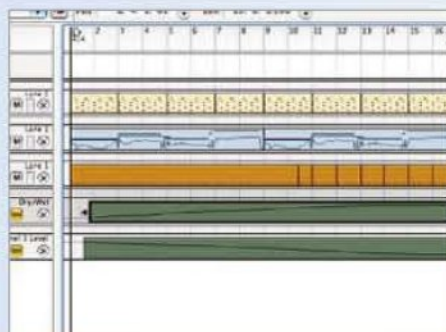


- 5** > Although this technique is best suited to fade-ins, you can give it a try on a long fade-out as well. If your track is a big, busy, in-your-face number, an automated low-pass EQ combined with a fade-out can help you ensure that it's remembered long after it's gone.

> Step by step Vanishing instruments



- 1** > It's easy to fade out an instrument in a mix, but there is a more subtle - and fun - way of doing it than just drawing a straight ramp. Select an instrument (we're going for a snare drum) over a period of time - say, eight bars - and fade it out, keeping the other instruments at normal levels. Here are our snares with a fade. (Audio on the DVD: **StraightFade.wav**.)



- 2** > Insert a reverb plug-in and automate the **Dry/Wet** mix knob to go from completely dry to completely wet, peaking just as the snare fades out entirely. The reverb will diminish as the snare volume drops to zero, but the snare will appear to 'vanish' rather than just fade out. (Audio: **FadedSnares.wav**.)



- 3** > In the middle of a busy mix, a reverb fade like this can make for a very subtle way of slowly removing instruments from the soundstage. If it's mixed right, this technique also gives you a great new way to add another element to your music - and that's not to be sniffed at. (Audio: **FullTrack.wav**.)

> make music now / fade away



Spice up your fades with free plug-ins like Expert Sleepers' Augustus Loop

Choose your weapon

Is the fade editor in your chosen DAW not quite cutting it? Curves not good enough for the connoisseur? Well, there are plug-ins available that are specifically designed to put a little more oomph into your fades, and many of them are free to download. With these in your plug-ins folder, you'll be able to take total control of all your fades.

Sonic Assault's Fade-X! device (homepage.ntlworld.com/jez.price/effects.htm) is a simple plug-in that gives you several highly controllable fade functions, such as multiple fade contours and a control where you can input the exact time you want your fade to take.

A little more complex is de la Mancha's excellent Faderratic (www.delamancha.co.uk). This effect adds some unpredictability by using certain defined parameters to trigger a crossfade between two stereo inputs. If you're just looking for finer fade control, it'll do that too.

If you're want something to help with your crossfading, try Soma's audio_scanners (www.asseca.com). These plug-ins enable you to manage your crossfades accurately, and are great for big mixes.

Although we're not going to go into time/pitchshifting plug-ins in depth here, we've used a couple in this tutorial that are well worth a look. The first is TapeStop (hem.bredband.net/tbtaudio/archive/files/Tapestop_1-7.zip), which does exactly what it says it does. The second is far more complex, and certainly includes the option to wind things down: Expert Sleepers' Augustus Loop (www.expert-sleepers.co.uk) is a feature-packed delay plug-in with a big button labelled Stop - that'll come in handy.

> Step by step Crossfading two files



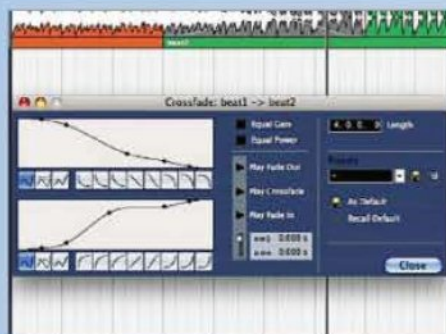
1 > Fading isn't just about manipulating single sounds: it can also be used to fade two audio signals into each other. The most obvious way to produce a crossfade is simply to lower the volume of one track while raising the volume of another, as above. However, this sounds pretty basic, as you can hear. (Audio on the DVD: **DryCrossfade.wav**.)



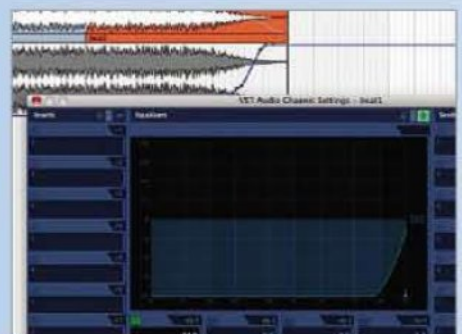
2 > Some DAWs feature a dedicated crossfade editor. If yours does, take the two pieces of audio you want to fade together and line them up so that they overlap, putting the second piece at the point where you want the fade to start. Apply a basic fade to both sounds.



3 > Open the crossfade editor. This is where you can take really fine control over how your tracks blend into each other. We've set both tracks up with an S-fade, and it's made an immediate difference to how well they blend and mix together. (Audio: **SCurveFade.wav**.)



4 > It's still not quite right, but there are some things we can do to smooth it out. For starters, because the fades are exactly symmetrical, there is a midpoint where the volume is quite low. You could automate the volume, but it's much easier just to raise the middle of the second fade a little bit to compensate.



5 > One final touch to our crossfade and we're done. Open an EQ and automate a high-pass filter (for the first piece of audio) and a low-pass filter (for the second). As the first piece of audio fades, raise the high-pass filter, and as the second piece comes in, lower the low-pass filter - this will help further smooth out the crossfade. (Audio: **EQFade.wav**.)

POWER TIP

>Crossfade tricks

Most DAWs demand that two crossfaded pieces of audio remain on the same track while the effect is in operation. That's fine if you want a basic fade, but if you fancy adding some more processing (such as automated EQ) then you're going to have to retain the fade manually. After you've got roughly the type of crossfade you like, select the second piece of audio and bounce it down. You can then place it on a separate track ready for its own automation. However, you won't be able to adjust its fade later on.

> Step by step Tape-stop fades



1 > If you're looking to do something a bit different with your fades, you might want to consider the tape stop. This is the winding down or speeding-up sound you get when you turn a tape player on or off, and it can be emulated by controlling the pitch and speed of your material over time.



2 > There are two ways to achieve this effect. Place your audio where you want it and split off the section you wish to fade out - it can be quite short. Select that section and either open your DAW's built-in pitch-shifter or load your preferred pitchshifting plug-in.



3 > Whichever option you use, automate a downwards pitchshift over a selected period of time, as opposed to affecting the entire clip. By doing this, you can quickly and easily emulate the sound of tape deck being stopped manually. (Audio on the DVD: **TapeStop.wav**.)



4 > You may want to use this technique over a longer piece of audio, like an intro. It's best to use it on a continuous sound - such as crowd noise - rather than a sparse break. When doing a longer fade, you'll want to be able to change the pitch and speed over a much longer time.



5 > Many DAWs give you the ability to control the speed of your fades, which can be useful when trying to achieve this effect. In Logic, we select some crowd noise and split it off from the main track. We can control the speed of the fade in the Inspector.

POWER TIP

>Maximum extraction

The key to getting the most out of this type of fade is to recognise its versatility. First up, remember that these techniques aren't just restricted to intros and outros. For example, try using a tape stop on a short section of vocal right before a chorus or breakdown - that's a technique regularly used in pop music. Or even better, try combining the techniques: using a pitchshifter and a dedicated tape stop plug-in on the same piece of audio might seem an odd thing to do, but it'll create a wild effect.



6 > In the Inspector, click the option **Fade In** to change it to **Speed Up** (you can do the same with the **Fade Out** option, changing it to **Slow Down**). Use the value next to it to determine the length of the fade, and the **Curve** value to affect the shape of the fade's curve. (Audio: **SpeedFadeTrack.wav**.)



7 > Some DAWs come with their own tape stop plug-ins built-in, and there are plenty available to download, like TBT's TapeStop (hem.bredband.net/tbtaudio). These make tape-stop fades a breeze, enabling you to control the exact speed of your stop. Just make sure that you haven't told it to pull the audio back up to full speed after the stop.

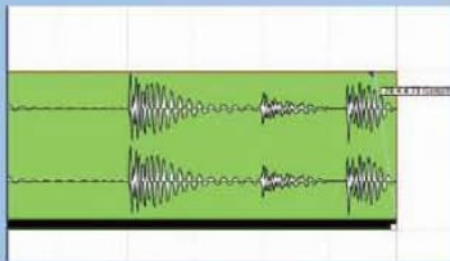
Fading tips and tricks

CLIP IT OFF

Have you ever split an audio clip only to find that it clicks or sounds very harsh at the start or end? If this has happened to you, it will be because you haven't cut the clip at a zero-crossing point (in other words, any point at which the waveform crosses the 0dB line). Happily, the problem is easily solved using fades. Simply apply a tiny straight-line fade at the start/end of the clip. This will remove the harshness and potential clipping problems of the jump in sound, and if the fade is small enough, it will hardly be noticeable to the ear.

MASTER MIND

Although it's a contentious point among engineers, many mastering studios prefer to do their own track fades in order to preserve audio quality at the start and end of tracks. So, if you normally send your work elsewhere to be professionally mastered, it might be a good idea to leave fade-ins and fade-outs out of your mixdown so that they can be added in at a later stage. If in doubt, ask whoever does your mastering what they would prefer you



Alleviate clicking or harshness problems at the start and end of clips by applying tiny straight-line fades

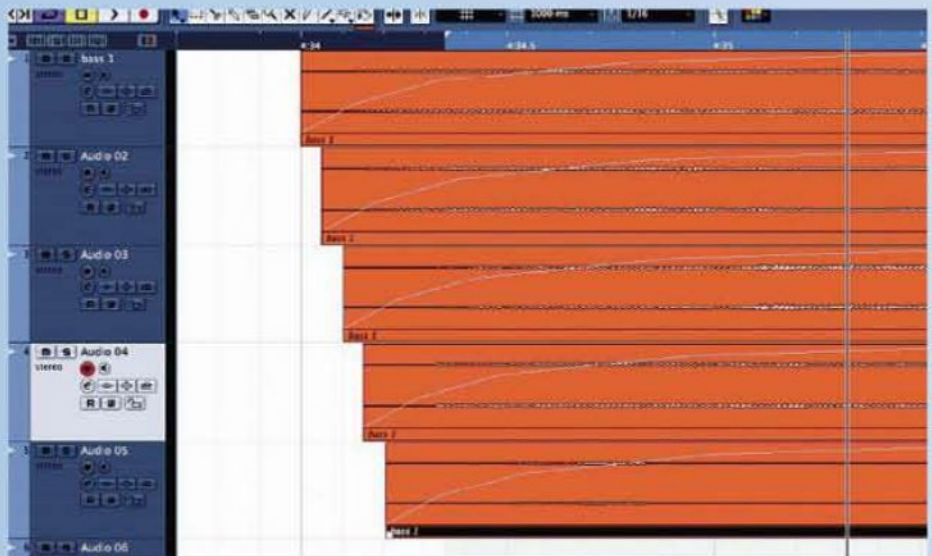
to do, and if they'd rather do the fades themselves, make sure you tell them exactly where you want them to be - down to the exact split second.

GET COMPED

If you've applied compression to your track, be aware that fade-outs can sometimes have an effect on it. This won't be usually be noticeable unless the compression settings are extremely heavy, but if yours are then you might find yourself with some unwanted artefacts popping up as the sound fades out. If this is a problem in one of your tracks, consider automating the compression to ease up as the fade takes effect.

PRESET IT!

Got a bunch of audio clips that you want to apply fades to? Doing them all individually can take a while and be a pain, but fortunately there is a quicker way. Most DAWs have the ability to create a preset fade using a hotkey command. It's usually somewhere around 10ms in length, though of course you will have the option to adjust this. The way to set up this hotkey varies - in Pro Tools, for example, you select a piece of audio and press the F key to automatically apply a fade-in and fade-out. Setting up this shortcut in your DAW can be a serious time-saver,



For a massive, building intro to a track, try stacking up pieces of audio, setting each one's volume progressively louder than the one before and fading them in in rapid succession

especially if you just need to apply small fades to multiple files to smooth things out.

BRING IT BACK

A tactic currently gaining ground in some genres - particularly hip-hop and R&B - is to fade the song out at the end, then fade in a different beat for a few seconds, before fading it out again. This can add an extra dimension to the track, but it's advisable not to reduce the volume of the first track to zero before bringing in the second, as this can create unnatural-sounding dead space. Rather, fade out the first track until it's almost completely silent, then fade in the second.

HOW IT ENDS

It may seem obvious, but you should pay special attention to where your fades begin and end. If you're applying a fade-in, for example, it makes sense to have it reach full volume after four or eight bars, rather than peaking before or after this point. Likewise, you should start your fade-out at a logical point, like the beginning of a four-bar section. It may also make sense to leave a half-second of silence after the fade has finished before placing the end marker.

FILED AWAY

Be aware that when you create a fade, some DAWs save a copy of the part as a separate



If you're doing some housework, be careful with the Fades folder - if you delete it, all your fades are gone too

audio file in your session folder. Usually, you don't have to worry about this, as the fade files stay out of the way and don't cause problems. However, you should be careful that you don't accidentally get rid of them if you're having a technological spring clean. You're going to need those files!

DELAYED FUNCTION

Combining fades with effects can be a great way to spice up your intros and outros. For example, try creating a really long fade-in, then putting it on a separate track, inserting a delay plug-in and experimenting with the settings (being sure to make the delay fairly long). Not only will this create a funky effect for your fade-in, but the delays will continue after the body of your track kicks in, leading to an incredibly smooth transition into the main event.

BROKEN OFF

One technique increasingly gaining ground in genres like soul and breakbeat is to take a track and rapidly fade it in and out, creating a percussive effect. You can hear this technique on Flying Lotus' track *Tea Leaf Dancers*. It can be very effective applied to either a whole track or individual elements, as long as you make the fades quick and regular. You should be aware that it can be quite jarring for the listener, though.

STACK 'EM UP

To create an interesting fade-in at the start of a track, take a piece of audio, chop it up into four or five slices of equal length and then stack the slices on separate tracks. Space out the clips so that they come in one after the other at regular intervals, and give each one a convex curved fade-in. Finally, adjust their respective volumes so that the first is the quietest and the last is at normal playback volume. What you'll be left with is a huge, swelling burst of sound that's perfect for opening a track. **cm**

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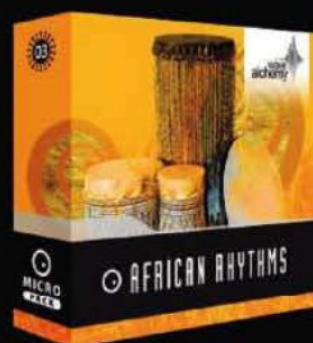


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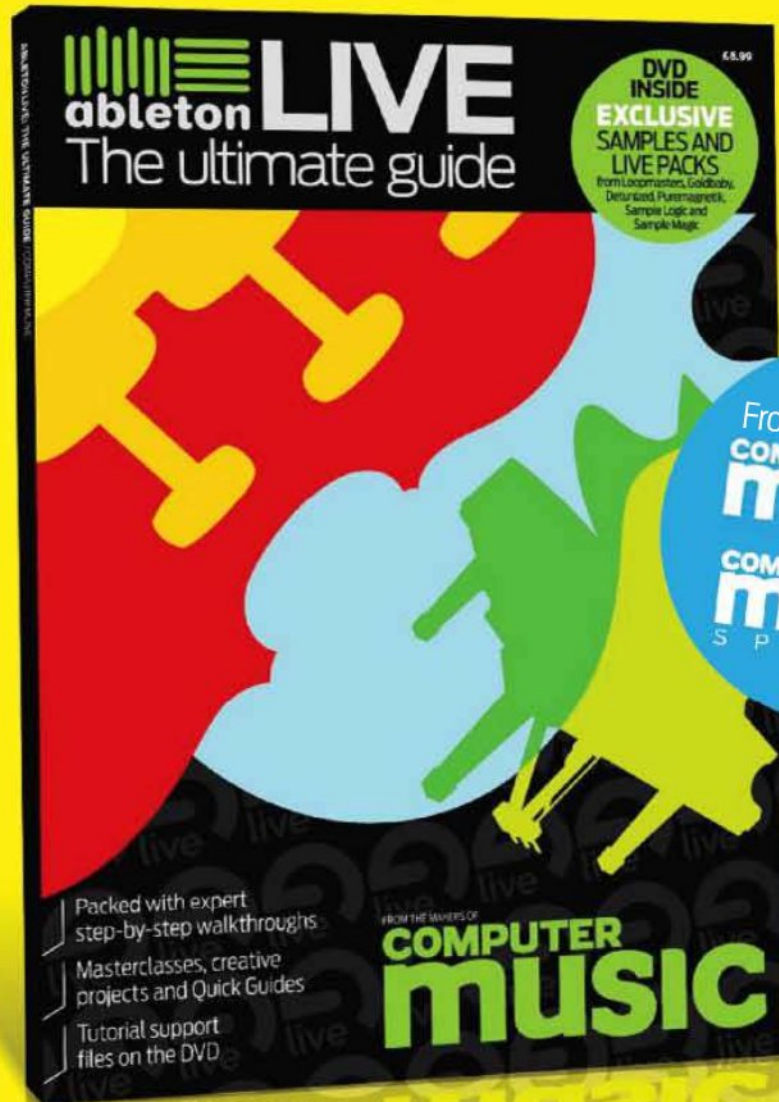
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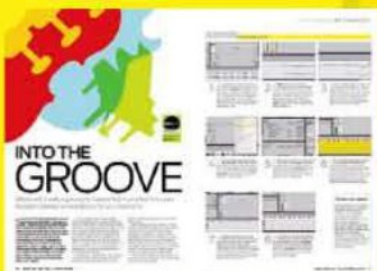
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A BLAST FROM THE PAST

Korg have brought one of their most revered synths to the iPad. We demystify the virtual patch panels of this superb classic emulation

> The first serious music app for iPad, Korg's amazing iElectribe grabbed a lot of attention at the *Computer Music* offices when it came out early last year, and we always knew it was only a matter of time before the admirably 'with-the-times' music technology powerhouse knocked us out with a second classic from their arsenal, translated for iOS. We assumed it would be another round from the Electribe line, so the fact that it turned out to be an iPad version of the magnificent MS-20 was a very pleasant surprise indeed. Maybe we should have seen it coming, though - Korg had already had serious success with their Mac/PC plug-in

version, not to mention the diminutive DS-10 for Nintendo DS console.

You'd certainly be forgiven for assuming that a full-blown MS-20 would be priced right out of the App Store; yet here it is, and for far less than the price of a night out! iMS-20 is a beautifully realised (both graphically and sonically) recreation of the Korg classic, complete with an accompanying SQ-10 sequencer and a drum machine based on six MS-20s. This is more than just a synthesiser - this is a full-blown analogue music studio. It even has patch cords!

About those patch cords. Negotiating them isn't strictly necessary to be able to use the instrument effectively; it works just fine as a

fixed signal path synth, too. However, it's the patch cables that really bring the iMS-20 to life, elevating it above the many me-too machines that fill Apple's virtual marketplace, and providing that extra layer of flexibility that separates it from your average iPad synth. They might leave some users scratching their heads, though, which is why we'll be covering them in this tutorial.

Over the next few pages, we'll show you around the iMS-20's most important features and walk you through programming both its synth and drum sections, as well as taking on the sequencer, the dual Kaoss Pads and, of course, those intriguing yellow cables.

> make music now / a blast from the past



Kaoss Kontrol is a kwite a kroup for iMS-20 owners! These controllers make a powerful alternative to the keyboard.

Kaoss kontrol

One of the most impressive things about the iMS-20 is its sheer wealth of features. At first, we expected to find that the app contained just the MS-20 synth and the accompanying SQ-10 sequencer, and nothing more - which would still have been a bargain at twice the price.

So, imagine our joy at finding not only a dynamite drum machine but two X/Y controllers culled from Korg's much-loved Kaoss Pad series. Better still, the two pads are designed to perform distinctly different functions. One of them is used to manipulate parameter values in real-time, while the other draws on technology found in Korg's Kaossilator to provide a real-time performance controller for triggering notes on the synth. The position along the horizontal axis determines the pitch, while the vertical position adjusts the gate time.

If you're envisioning a tricky-to-play chromatic system, think again - you can select from a wide variety of musical scales, and your performances will snap to the nearest notes in that scale. Holding a note triggers repetitions, so you can turn out complete musical phrases with a swipe of your finger.

As if this wasn't enough, anything you play on the Kaoss Pads can be recorded in real-time and exported to iTunes or shared with the outside world via SoundCloud. We've been dreaming of a proper Kaoss Pad for the iPad for a while now, and to find the technology worked into a full virtual analogue studio is a real coup. We're stoked.

> Step by step

Programming the iMS-20 drums



1 > The iMS-20's built-in drum machine is a thing of beauty. Rather than relying on samples, this bodacious beatbox enables you to create up to six drum sounds, each generated by a dedicated MS-20 synthesiser of its very own. Tap the Session browser's **Browse** button at the upper left corner. You'll see **New Session** at the top of the list of sessions on the right. Select it and hit **OK**.



2 > Once loaded, the session will automatically start playing. You'll hear a simple four-to-the-floor kick drum, accompanied by a single burst from the synth at the start of each cycle. Find the Components section up top and tap the **Mixer** button. The Mixer will appear, with the synth on **Channel 1**. Mute it so that you can only hear the kick drum.



3 > Tap the **Drums** button in the Components section to bring up the drum machine. As you can see, the kick drum is loaded into the top-most drum channel. There's a horizontal row of buttons for each step, with the tan-coloured buttons indicating active steps. Touch some of the white buttons to activate them. Copy what we've done here, if you like.



4 > Note that there are rows for five more drum sounds. **Drum 2** is our snare. Add a snare to each backbeat, as shown, with another on the very last step of the pattern. While you're at it, drop a few hi-hat sounds in. The last sound is a classic analogue 'zap'. Put a few of those in the last bar. Now you have a basic drum pattern - so let's make it a bit more interesting.



5 > You should have a few hits of the 'zap' sound at the end of the pattern. Tap the **Seq Edit** button for the sixth channel to bring up a full SQ-10-style sequencer just for that drum. Note that your pattern is replicated in the row of buttons here. The top row (**Channel A**) of knobs controls pitch. Turn the knob for step **15** all the way down. The second row dictates the octave. Turn the knob for step **13** all the way down.



6 > Hit the **Back** button, then tap the **Sound Edit** button for **Drum 6**. This plays the sound and brings up an MS-20 synth. Find the knob labelled **MG/TEXT** in the Cutoff Frequency Modulation section, and reduce its value to between **6** and **7**. You'll hear the sound's timbre change. Now, look to the Envelope Generator 2 section. Find the **Decay** knob and turn it up past the **7** mark. Turn the **Attack Time** up to **4**.

> Step by step

Programming the iMS-20 synth



1 > The centrepiece of the iMS-20 is its virtual recreation of the famous analogue synthesiser from which it takes its name. Like the original, this portable powerhouse can be confusing. First, start a new session. You'll get that 4/4 kick and synth burp again. Stop Playback by tapping the white button, and play a few notes on the keyboard.



2 > All you hear when you play is a simple sawtooth wave from Oscillator 1. In the upper left is a section labeled VCO Mixer. **VCO 1 Level** is all the way up, but **VCO 2 Level** is turned down. Crank **VCO 2 Level** up and play some more notes. This brings a sawtooth wave from Oscillator 2 into the mix. Look to the left at Oscillator 2. The top-most knob selects the waveform. Select the second one, a square wave.



3 > Play some notes on the keyboard. This waveform sounds quite different - it's hollower, with fewer harmonics. There's a **Scale** knob at the bottom of the VCO 2 section. Set the **Scale** of VCO 2 to **16** and play some notes. As you can hear, a much lower pitch is now coming from the second oscillator.



4 > These tiny knobs can be tricky to get your fingers round, so tap the **Zoom MS-20** button in the Synth Edit section to make the keyboard disappear. You can bring it back up by tapping the **Keyboard** button in the Controllers section, but it obscures a lot of the panel. Tap the white button in the Playback section to activate the sequencer. Solo the synth by tapping the **Solo** button in the Synth Edit section.



5 > Now you have your synth sound beeping out every second or so. Let it play while we tweak the sound. The MS-20 has two filters - one a low-pass, the other a high-pass - both featuring a resonance control. Find the Low-pass Filter and reduce the **Cutoff Frequency** to about **4**. Korg calls the resonance **Peak** - so push the Low-pass Filter's **Peak** up to around **7**.



6 > We've got quite a murky sound now. We could brighten it up by opening up the filter's **Cutoff Frequency**, but we'd rather do it dynamically, using an envelope generator. There's a Cutoff Frequency Modulation section under each filter. Find the one under the Low-pass Filter and crank up the **EG2/EXT** knob. It will have some effect, but not a lot!



7 > Find Envelope Generator 2 down the right-hand edge of the display. Let's create an interesting shape with which to modulate our filter. Set the **Decay Time** to just over **3** and turn the **Sustain Level** all the way down. Push the **Release Time** knob up to just past **6**. You should hear the filter open abruptly and close over a short period of time, making a sort of 'twang'.



8 > Access the Patch Panel by touching the little **Patch Panel** rectangle at the lower-left of the Control Panel. It's quite intimidating, but if you mentally match up the patch point labels with the controls on the other panel, it isn't too confusing. Here the LFO is called a Modulation Generator. Find its section, touch the saw/triangle/ramp **Out** jack and drag a cable up to the Low-pass Filter's **Cutoff Freq** jack.



9 > Normally, we'd use a knob in the Control Panel to make the Modulation Generator affect the filter. This patch bypasses that and connects the two directly, with no control given over the amount of modulation. Try running a patch cable between the square wave **Out** of the Modulation Generator and the **Initial Gain** input in the Voltage Controlled Amplifier section for a really cool tone.

iMS-20 sequencing tips

Subvert the drum machine

The fact that the iMS-20's drum machine section is so-named doesn't actually mean that it has to be used solely for rhythms. Because each drum channel is equipped with a full MS-20 synthesiser and another full SQ-10 sequencer, you can create seven-part synth arrangements complete with basses, pads and melodies here.

Strike a chord

How do you get chords from a monosynth? The standard technique is to tune the oscillators to different intervals. However, if we carry the above tip to its logical conclusion, we can also use the drum machine section to provide full chords. All you need to do is assign the same sound to three different drum tracks, then program each track's sequencer to play an interval above or below that same step on one of the other two tracks. For example, the first step in the sequence for track 1 might play the root note, while the first step in the sequencer for track 2 could play a third above that. The first step for track 3 could be, say, a seventh above the root. When the sequence is played back, the three notes will be stacked into a familiar chord.

Effective sequencing

If you haven't already explored the list of parameters that can be assigned to the sequencer, you'll be pleased to know that it goes well beyond the limits of its hardware ancestor. One of the nicest surprises is the inclusion of the effects processors in the list. You'll find the Insert Effect type and both Edit knobs available, along with the ability to activate or deactivate the effect on a given step.



Much more than just another retro rehash, the SQ-10 goes way beyond any old hardware step sequencer

> Step by step Programming the iMS-20 sequencer



1 > The SQ-10 sequencer is a retro, knob-laden analogue emulation. It might seem old-fashioned, but analogue sequencers can provide a lot of inspiration. Let's fire up a new session. Once again, we've got our basic 4/4 kick and a burst of synthesised sound. Swipe your finger along the vertical edge of the GUI to scroll up to the Sequencer section.



2 > As you can see, there are three rows of knobs and a coinciding row of patch points below them. Those patch points are trigger outputs. They're most commonly used to change the length of the pattern. Currently, we've got all 16 steps cycling through. Let's make a shorter pattern. Touch the jack for step 8 to create a patch cable and drag it to the **Reset Trig In** jack in the lower-left section of the sequencer.



3 > Now our sequencer plays through to step 8, then resets back to step 1, dividing the sequence in half. You can use this function to create odd time signatures or triplets. Now we've got our sequence running, but it's just blurring out that one note at the start. Let's add more! The lower row of knobs (**Channel C**) represents the gate output for each note. Turn steps 3, 5, and 7 all the way up (1 is already done).



4 > Well, we've got more notes playing, but it's not terribly interesting - they're all at the same pitch! That's where **Channel A** (row 1) comes in. Turn the first knob in **Channel A** all the way down to reduce the pitch of the first note by an octave. Notice that the pop-up parameter value tells you what note is being played. Set the pitch of step 3 to **E3**, and the pitch of step 7 to **E4**.



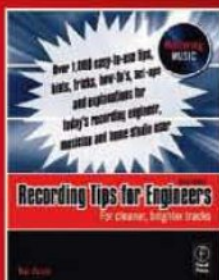
5 > All of our active notes have the same full-on gate values set in **Channel C**. Change the **Gate** time values of steps 3 and 7 to **75%** in the third row. The notes will now play for a shorter period of time without affecting the rate of the sequencer itself. Let's get a little more advanced. Tap the **Parameter** button in the top-left section of the sequencer.



6 > You'll see a whole new set of sequencer channels. Note that **Channel 1** is assigned to **Param1** and so on. Tap the little button under that display. A menu will pop up, from which you can choose the parameter to which this row of knobs will be tethered. Pick the Low-pass Filter's **Cutoff**, tap the button to close the menu, tweak the knobs for **Channel 1** and watch that Cutoff knob spring to life! **cm**

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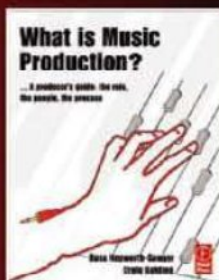
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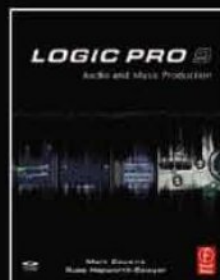
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The **cm** guide to Soundation

PowerFX's web-based DAW makes for an impressively useful production environment. Take your tunes online with our guide

> It's fair to say that we've seen pretty much every computer music-making system going, so we're always excited by the appearance of a new one. In March 2010, Soundation arrived on the scene, and since then it's developed into an impressive and seriously useful platform.

Developed by well-established sample producers PowerFX, Soundation is an entirely web-based DAW - not the first, but certainly one of the best. It runs in your web browser, stores projects online, and your audio files are kept in the cloud, as is the supplied loop library.

Though it's not on the same level of sophistication as a regular 'offline' DAW, Soundation's Flash-based engine provides everything you need to get ideas down, as well as plenty of inspiration to kickstart fresh new

"Developed by loop
content providers
PowerFX, Soundation
is an entirely
web-based DAW"

ones. So, what are the advantages of working in a web-based DAW?

First and foremost, working in the cloud means that you don't need to worry about losing any files through hard drive failure. If

anything happens to your computer, all your files are safe and sound out there on the web. And with all your files online, you don't need to worry about carrying them around with you. Whether you're at home, in the studio, on holiday or at a friend's place, you only need an internet connection to access your project.

This flexibility extends to new projects, too. If you're back at your parents' place for Christmas and you suddenly have a fantastic idea for a track, Soundation's many marvels - including a drum machine, soft synths, built-in loops, audio recording, mixing, processing and even automation - are only a few clicks away. Plus, anything you produce will be waiting online for you when you get back to your studio. If nothing else, its sheer convenience should convince you to take a closer look - so let's do exactly that!

Soundation inspiration

How did Soundation come to be? We put the question to PowerFX head honcho Bil Bryant.

"I've personally licensed loops to Acid, Cubase packs, GarageBand, Logic and even the Reason Strings ReFill, as well as having content included in products by MOTU, Ableton, Denon and Cakewalk," explains Bil. "After licensing loops to products like GarageBand, where the content is so important, it was always a dream to develop and work with PowerFX software."

Why was the time right for Soundation?

"I've been looking at Flash-based sequencers for a few years, and we were involved in a couple

"We're on the cusp of some very profound changes"

of early attempts that were never good enough to see the light of day," says Bil. "But then we found a fantastic developer in Einar Andersson, who has both programming and music production experience, and Adobe released a workable version of Flash for audio."

Soundation isn't the only (or first) web-based music making application. What sets it apart?

"There are a few online DAWs, but none have put everything together like Soundation Studio has, with real-time effects, virtual instruments, recording and an integrated sound shop. Some web DAWs have focused on the social and collaborative structure first. We've done things differently, focusing on the studio development and audio content presentation first."

Bil believes that PowerFX are uniquely equipped to address this important area.

"Because Soundation is developed by PowerFX, we have access to a huge sound library and ongoing sample production. A big focus is on how samples, sound effects and instruments are available within the studio."

As an example, he cites the Premium Loop Library, which is available to Soundation's top-end subscribers. "The Premium Loop Library is an example of a feature where you can pay to have access to a searchable online sound library right from inside the application."

As for the cloud-based model, Soundation has set its store out in a market that looks set to become more crowded in the near future. Our recent sneak peek at Ohm Studio (*Hands on with Ohm Studio*, **cm157**) revealed a very similar cloud concept at the alpha stage, and it's true that many of the Soundation's advantages will also apply to Ohm Studio when it launches later this year.

But there are differences still. Ohm Studio is built around a largely new sequencer paradigm, while Soundation sticks to less flexible - but slightly simpler - established concepts. Its wealth of readily available audio content also gives it an edge, and the very constraints of its web-based concept make it a simpler and friendlier program for those users who just want to get ideas down quickly and easily, without the complications of third-party plug-ins and compatibility problems.

The more choice we have in the music production market, the better all the options become. One thing's for sure: we're on the cusp of some very profound changes in the way we produce our music, and with companies like PowerFX pushing the boundaries with innovative DAWs like Soundation, there are clearly fun, productive and exciting times ahead.

Which package is for you?

Almost all of the features we're looking at here are available in the free version of Soundation, and you can certainly put together a basic project without spending a penny. But the paid versions of the DAW have a few key features that make splashing a bit of cash worthwhile.

The most useful of these is AudioLocker, a downloadable utility that enables you to add your own audio files (as well as the free loops) to projects and save your recorded audio to the cloud. Your money also gets you a subscription to a large online storage database, which is useful for all types of files.

Subscribers to the Premium account also get access to the aforementioned Premium Loop Library, which can be downloaded and used in any DAW, not just Soundation. And both Power User and Premium account holders get 20 pre-bundled soundsets.

However, don't think that you have to shell out right away, by any means. Soundation is designed to be used for free, and the company is confident enough to let you try just about everything it has to offer without charge. So, go ahead and see what you think. The very first time we used it, we put together an eight-bar loop that ended up as a full track in our regular DAW. We think of Soundation as an excellent portable scratchpad in our production armoury.

Soundation in detail

ARRANGEMENT TOOLS

Stretching, note drawing and cutting are catered for with these standard tools

GENERAL MENUS

Additional controls for saving and settings, all contained within the browser window itself

TIMELINE

Runs across the top of the arrangement and shows the currently looped area as a shaded bar

CHANNEL CONTROLS

Level, pan, solo and mute controls, and a button to engage effects plug-ins for each channel

AUTOMATION

Add layers of automation for the supplied effects and instruments. Simply choose a parameter from the menu

BROWSER

The browser filter makes finding files a breeze, with selections for genre, instrument, key and tempo

ARRANGEMENT

The familiar arrangement screen, with it's left-to-right timeline and vertically stacked channels/tracks



TRANSPORT

Features all of the controls you'd expect and enables you to toggle various floating windows

> Step by step Building and recording a track



1 > Sign up for an account at www.soundation.com and go to the Studio page. Here you're greeted with a familiar-looking interface with tracks running down the left-hand side, a browser to the right, a timeline across the top and a transport bar across the bottom. First things first – let's add some drums. Click the **Electronica** list on the right and browse the **130bpm** samples.



2 > We decide on **130 Beat80z.wav**. Drag the sample into the Arrange window, and then do the same with another from the 125bpm options. We plump for **125 909 HiHat.wav**. Soundation changed its tempo to 130 to match the first sample we added, and now that we've added a loop of a different tempo, it asks if we want to match the tempo of the second loop.



3 > We do want to adjust it, and the options are **Pitch** or **Timestretch**. We go with **Pitch** as we want to keep the sound punchy and aren't bothered about the pitch changing along with the speed. Click the top right corner of the hat sample and drag it to the same length as the first loop. Click to set a loop in the timeline.



4 > Go down to the lowest track (an instrument track) and click the dropdown list to select the sampler instrument **SAM-1**. Choose **Church Organ** from the list of presets and click the little keyboard icon at the bottom right corner of the screen to open the onscreen/QWERTY keyboard player. Double-click the arrangement to create a piano-roll clip.



5 > Click the bottom-right corner of the new clip to drag it. We extend its length to two bars and double-click it to open the Editor. While the loop plays, come up with a suitable part using the keys. Once that's done, use the pencil tool to draw your part in manually (unfortunately, real-time MIDI recording isn't supported yet). Loop the new part to the four-bar length of our project.

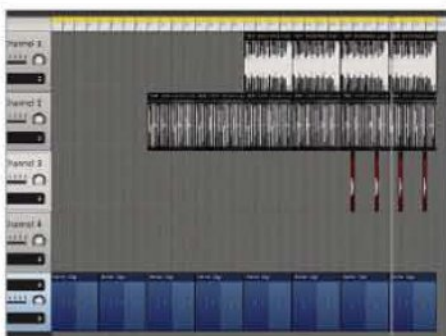


6 > Nothing adds a bit of interest like a vocal, so select a new audio channel and engage **Record** (muting the other channels to avoid bleed). Soundation will ask for your permission to use your computer's built-mic – click **Yes** to start recording. When you're done, hit **Stop** and the audio will be right there in your arrangement. We shift the start and end points and line it up with our track.

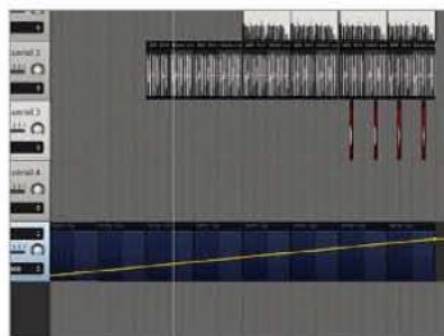
POWER TIP

>Name it right

Soundation has a simple but effective way of determining the tempo of an incoming audio loop: it checks the first three numbers of the sample name and reads this as the BPM. So, when you're importing your own loops into the DAW, be sure to add the tempo to the start of each name. Doing this ensures that when you add a sample, Soundation will ask if you want it to automatch the lengths, just as it does with its own loops. Alternatively, you can apply stretching manually by clicking the pitch or stretch icons at the left of the top panel and dragging the ends manually to the right length.



7 > Let's start arranging our track. Highlight all of the parts, then drag and copy them out just as you would in any other DAW. We don't need much, just enough content to demonstrate some arrangement tricks – 32 bars is plenty. Go in and remove some parts so that the elements come in sequentially, as they might in a finished track.



8 > To add some excitement we're going to use automation to control the release time on our organ part so that it builds in impact. To do this, go to the channel's **Automation** menu, select the **Release** parameter, then click to create two automation points. Finally, raise the one at the end to create a gradual rise.

> Step by step Processing and mixing



1 > It's time for some processing! First, add a delay to the organ by clicking the **FX** button and selecting **Delay**. Choose **Long Vocals** from the dropdown menu to add a nice, channel-padding delay line. Next, let's add a filter to the hi-hat part. Select **High-pass** instead of **Low-pass** and use automation to sweep the filter open, gradually bringing the bass in over eight bars.



2 > The rest of our channels need some processing too, so flick through them and add effects wherever you feel you need them, using the presets for each as guidance. You should definitely apply a compressor to the vocal snippet. Set it to the **Vocal** preset, as this'll really help it to cut through the mix. We also try some of the more creative FX, like **Degrader**, for bit-crushing action on our hi-hats.

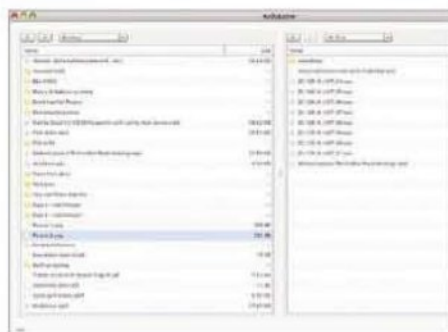


3 > Next, set the levels as you want them, then go to **View** and select **Show Master Channel**. Add a limiter to the master output to ready the track for export. Exporting couldn't be easier - click the down arrow at the bottom right-hand corner of the screen and choose to export the audio file as a WAV. And that's it - our first project in Soundation!

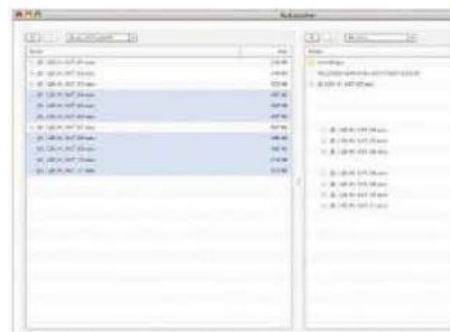
> Step by step Managing your projects



1 > In order to manage your Soundation account audio files, you need to download Audio Locker, which becomes available with any paid Soundation account. It requires Adobe Air, so you need to download that first if you don't already have it installed. Run Audio Locker and log in using your Soundation account details.



2 > The right-hand pane lists all the files available on your Soundation cloud account. These include a folder containing your own files (including uploads and any audio recorded in Soundation), a folder full of free loops and a folder containing any sounds that you've bought online through Soundation.



3 > To add files to your Soundation cloud and make them available for use in your projects, drag the WAV or MP3 files across to the **My Files** folder. Next time you open Soundation Studio while logged in, these files will be available. It works the other way, too - you can pull all of the files in your Soundation folder across to your computer and use them in other projects.

And there's more...

Soundation is a relatively simple DAW at the moment, but PowerFX are committed to ongoing development.

Recent additions include the Publish To Facebook feature, which shares your finished track on your Facebook profile page for friends to check out right away.

Other innovations include the Premium Library, which is available with the Premium subscription package. This presents you with 5000 high-quality loops in a highly searchable tag-based browser. Simply specify your requirements (like genre, instrument, tempo or key) to search. Together with its 5GB of online storage, the Premium account is decent value, at \$9.99 a

month or \$99.99 a year. Below that, while we're on the subject of cost, are Power User (2GB storage) at \$5 a month or \$49 a year, and Intro (100MB storage) for \$19 a year - see www.soundation.com/accounts for more.

PowerFX's work as soundware producers means that they're constantly expanding the SoundShop and the Premium collection, and they plan to roll out additional instruments and effects too.

We do have one or two things on our Soundation wish list, however. The first is multitrack recording, as this would mean you could pick up a guitar and a mic and get a basic version of a song idea down in one pass. We're also really keen to see some MIDI



You can search the library for loops by specific genre, instruments and key, as well as by title

support, even if only of the basic keyboard-in kind, as this would offer a huge leap forward in the program's potential as a full-on DAW. Hopefully we won't have to wait too long for these functions to appear. **cm**

Get swinging

We explore different ways to make your beats swing in power-packed tracker Renoise



> After last month's foray into Renoise's latest features, this issue we're going back to basics with a look at, among other things, adding a swing beat to a song. In the tracker days of old, the standard method of creating a swing effect was to hard-change the tempo every line or two so that the first note played slowly, the second one quickly and so on. Nowadays, thankfully, we have many other options available to us.

The quickest and easiest way is to use the Groove Settings panel. This not only gives you

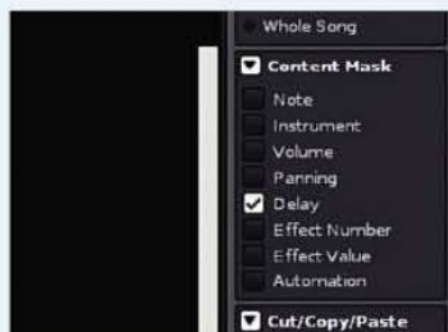
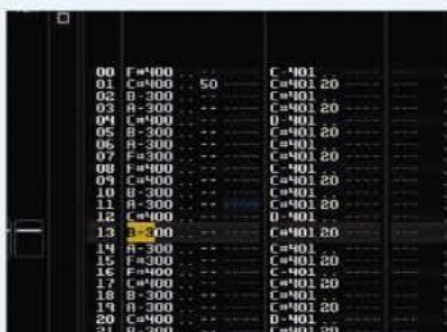
global control over the swing, but also enables you to assign different swing values to each individual beat in a four-beat bar. However, what if you want to assign swing to just the melody and not the beat or bassline? Or have them all swinging at different rates? Well, the Delay column serves many purposes, including the recording of nuances in a live performance. Here we can use it to delay individual notes by regular percentage values to create swing.

Alternatively, to delay all the notes in tracks with one or more sub-note columns, we can use

the ODxx command in the Effects Column, where 'xx' is the delay value in ticks. As if that weren't enough, the Volume and Panning columns can also be programmed with tick delay information, should you feel the urge.

To begin with, load up the **CM_trackers_tutorial_34start** file. We've set up a melody instrument and a drum kit, and programmed in patterns for both. This is an experimental tutorial, so feel free to alter the pitches - but do leave the number of notes the same. The files you need are in the **Tutorial Files** folder on your **cm DVD**.

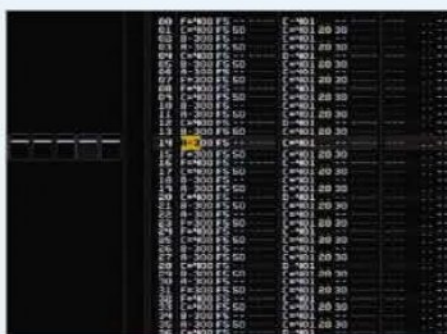
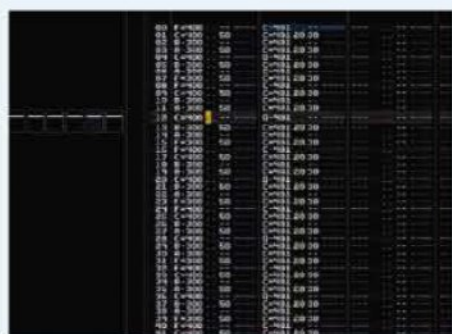
>Step by step Swinging the beat in Renoise



1 > First, go to the **Song Settings** tab and place a tick in the **Groove Settings** box. Set the song playing, then go through the ten presets and listen to the varying amounts of swing that they impart. Now adjust the **Groove** sliders individually and note the effect that they have. Now switch off the **Groove Settings** box - let's try something else.

2 > Making sure your cursor block is in **Track 01**, toggle the **Delay** column by clicking the **DLY** button below the Pattern view. You should see it appear next to the **Volume** column. On the second line (**line 01**), enter the value **50**. Now we need to repeat this information for the whole track. (File: **CM_trackers_tutorial_34b**.)

3 > Click the **A/E** (Advanced Edit) button on the far right, unroll the **Content Mask** and right-click **Delay**. This will ensure that only Delay information is copied and pasted. Now either select the first two lines of **Track 01** with the mouse, or move to line **00** with the arrow keys, hold down **Shift** and press the down arrow to highlight both lines. (File: **CM_trackers_tutorial_34c**.)



4 > Move the cursor to either the top of the pattern or to line **02**, right-click in the pattern area and choose **Paste Continuously** from the context menu to paste the delay information down the entire length of the track. Now enable the **Delay** column for **Track 02**, type in **30** and repeat the copy and paste process. (File: **CM_trackers_tutorial_34d**.)

5 > We can use the **Volume** column to apply staccato to our melody using the **Fx** command, where the note is cut off after x ticks. Type **F5** into the first line of **Track 01**'s **Volume** column and copy/paste it. This trick can also be performed on the **Panning** column and works for both VST and sampled instruments. (File: **CM_trackers_tutorial_34e**.)

6 > We can now also apply the global **Groove Settings** as well as having the delay commands in place - this will serve to accentuate the swing rhythms we've already set up. Finally, try adjusting the **Ticks Per Line** value in the **Player Options** area under the **Song Settings** tab, listening carefully to the effects produced. (File: **CM_trackers_tutorial_34f**.) **cm**

Jazz progressions

Move past basic triads and into lush harmonic territory by adding sixths, sevenths and ninths to your chords

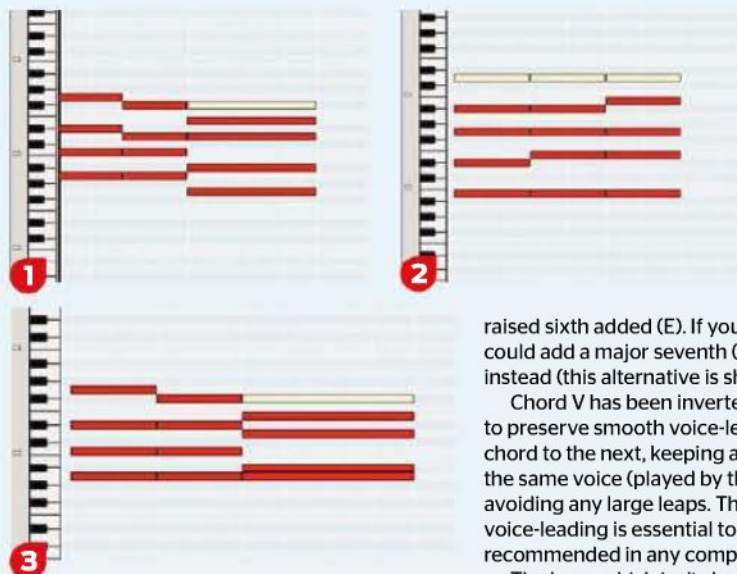


> This issue we're going to plunge into idiomatic jazz harmony and learn how to construct some typical rich chromatic progressions. This is inevitably going to get a bit technical, however much we grease the slipway. To help you out, all of the progressions shown here are duplicated in the MIDI file on the DVD - so if you like the sound but the maths involved puts you off, you can simply cut and paste the progressions into your tracks.

All sixes and sevenths

Leading up to this point, we've looked at writing minor progressions using triad chords. To create authentic lush jazz harmonies, we need to add sixths or sevenths to every chord - not to mention ninths. The classic jazz progression is this: a chord built on the second step of the scale moving to that on the fifth (the dominant), then ending on the tonic (key) note. This progression is commonly referred to as a 'two-five-one', abbreviated to ii V I. Many jazz books don't use upper and lower case numerals to distinguish between major and minor chords, so you may also see it written as II V I.

Fig 1 shows a typical ii V I progression in G minor: chord ii uses the scale's diatonic E^b as its flat five, chord V has a chromatic major third (F[#]) and the home chord idiomatically has a



1: ii V I in G minor - Am⁷, D⁷, Gm⁶ (or Gm⁷). **2:** Adding ninths to various chords - to save growing extra fingers you can omit the roots provided the bass is stressing these notes. **3:** This is Fig 1 re-worked with ninths added to chords V and I. Chord ii sounds fine the way it is...

raised sixth added (E). If you wanted to, you could add a major seventh (F[#]) at this point instead (this alternative is shown in white).

Chord V has been inverted (second position) to preserve smooth voice-leading from one chord to the next, keeping any common notes in the same voice (played by the same finger) and avoiding any large leaps. This kind of elegant voice-leading is essential to the style and is recommended in any complex progressions.

The bass, which isn't shown in **Fig 1**, should centre on the root of each chord, so here it will be A - D - G as each chord changes. The first of the notation examples in the *Staff notation special* boxout demonstrates this progression.

Rootless voicings and ninths

As we've just said, the bassline should feature the root of each chord prominently - so do we really need to include it in the chord itself? And if so, what do we do with the spare finger? Answering both questions at a stroke: where appropriate, include the ninth in the chord rather than the root. So, just what is a ninth? **Fig 2** shows three chords in red: a minor seventh, dominant seventh and major seventh all rooted on C. The chords are all built up by adding thirds one above the other - root, third, fifth and seventh. Simply extend this process by adding a further third (shown in white) above the seventh to create ninth chords. With the bass anchoring the root, we can safely omit it from the chord voicing, leaving a more manageable four-note chord.

A diatonic ninth doesn't sound good over the chord ii in the minor, so we leave that as it is. Typically the diatonic ninth is added to the chord V, which in a minor key results in a minor (or flat) ninth - E^b in this case. The ninth is also added to the tonic chord in either its sixth or major seventh versions (again shown in white). Note that these notes are alternatives - they're not usually added at the same time. **Fig 3** shows the end result.

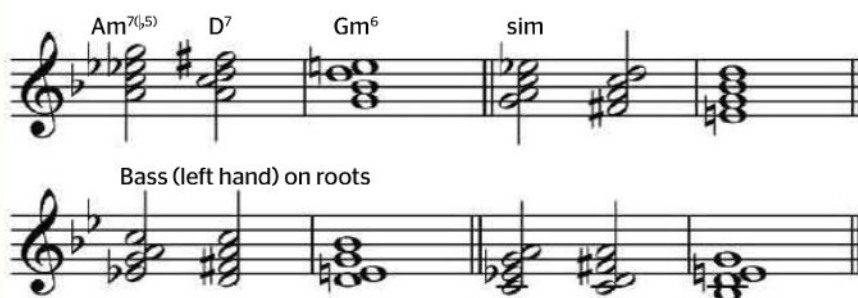
What about a tune?

Much can be said about this, and we're almost out of space. Experiment with any of the minor scales mentioned recently - aeolian, harmonic minor and melodic minor especially - and we'll examine this matter in the next issue, along with translating these progressions to major keys. **cm**

Staff notation special

Let's look at the minor ii V I progression shown in **Fig 1** on the staff. For ease of reading, we're notating an octave higher than it would typically be voiced. You can see where notes common between chords are held over and how the other notes move to the nearest available notes in the following chord. We refer to this process as 'voice-leading', even though we may be playing on a keyboard. This is because we think of the chord progression as four simultaneous, very simple melodies (thinking horizontally

along the staff) as much as a set of chords (thinking vertically down the staff). It might even help to imagine this being performed by real voices - four backing singers, for example. If the top vocalist found the part too high, s/he might sing it down the octave and the progression would work equally well, though creating a subtly different sound. This process can be repeated, transposing voices up or down an octave, in effect inverting the whole sequence. The bass stays the same, of course.



Four versions of the minor ii V I created by transposing parts down an octave

Avant-ifying hip-hop

The final stage of our six-part guide to pushing the limits of genre sees rachMiel subject hip-hop to the avant-ification treatment

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 zee grande finale of my six-part series on creating avant variants of electronic-music genres. In the first five instalments I avant-ified downtempo, techno, drum 'n' bass, house and dubstep. For my swan song, I'm going to have the audacity to create a piece of avant hip-hop.

Divining hip-hop's essence

The first step in avant-ifying a genre is divining its essence. In these articles, I've been using the HAL approach to do this: history, attributes, listening. Historical research provides a sense of the genre's roots. Identifying a genre's key attributes helps to home in on its core musical personality. And immersion in the sound of the genre puts it right where it should be: in your gut.

Hip-hop's history (see below) reveals several key components of its essence: its block-party DJ origins; its funk/soul/jazz/R&B roots; its association with spoken word (rapping); its love affair with technology (turntables, samplers, synths, sound systems, computers); its tendency

to draw inspiration from other genres. Key attributes of hip-hop include: sparse 4/4 syncopated beats running at 90-110bpm, a tight gated feel with moderate swing, hooky melodic sequences, conventional verse/chorus structure, noisy FX bling, tight and dominant vocal line (rap), backup singing.

What to listen to? Everything! Old school: DJ Kool Herc, DJ Hollywood, Grand Wizzard Theodore, Grandmaster Flash, Kurtis Blow. New school: LL Cool J, Run-D.M.C., The Beastie

Boys. Golden age: Big Daddy Kane, De La Soul, Eric B & Rakim, Public Enemy. The 90s: 2Pac, Busta Rhymes, DJ Shadow, Dr Dre, Jay-Z, Lauryn Hill, MC Hammer, Nas, Queen Latifah, Snoop Dogg, The Notorious B.I.G., Wu-Tang Clan, Wyclef Jean. 2000s: 50 Cent, Aesop Rock, Eminem, Kanye West, crunksters Lil Jon and the Yin Yang Twins, M.I.A., Mos Def, Nelly, T.I.

As always, I'll let the IDM and KVR forum-dwellers have the last word on the essence of hip-hop. Lysdexic thinks its essential characteristic is: "Swung sub-110bpm breaks. You put anything on top of that and it's hip-hop." LXNDRI defines its feel as: "Freshness, defness, dopeness, keeping it real-ness and swag." Acid Mitch calls it: "Poetry over a beat. Everything else is just dressing it up."

How to avant-ify

Let's think about pitch, duration, timbre and dynamics. In terms of pitch (melody, harmony), consider writing in a mode, using augmented jazz chord progressions, composing a 12-tone melodic hook for your choruses. Duration-wise (beat, form), how about daring to break the Law of 4/4 and going instead for 5/4, 7/8, 17/16, alternating bars of 5/8 + 11/16, or perhaps even a free drum beat to match a free rap beat?

Timbrally (sound) you could make a track using only sine waves, pump the voice through lots of FX boxes, mash up your drum voices (have the kick part play hi-hat samples, the snare part play hi-hats, etc). For dynamics (volume, accents, envelopes), you could create an extremely sparse and quiet piece of lowercase hop, take syncopation to the next level by never landing on the downbeat, compose an implosion track that starts at near inaudibility and gradually crescendoes to an earsplitting final four bars. The only limit is your musical imagination.

"You could create an extremely sparse and quiet piece of lowercase hop, or take syncopation to the next level"

Hip hop history

When most people hear the term hip-hop, they think of rapping over beat-driven music. But that's just part of the story. Hip-hop is a full-blown global subculture. It's got its own art forms (DJing, MCing, rapping, beatboxing, breaking, graffiti), its own slang, gestures, dress, bling, and perhaps most importantly, its own unique hip-hopper 'tude.

Hip-hop music arose in 1970s inner-city New York when block-party DJs began

creating extended beats by looping and juggling funk/soul/jazz/R&B breaks on a pair of turntables. MCs would shout crowd-rousing rhymes above these beats, a practice that eventually became rapping. In those days, hip-hop and rap were performed live; it wasn't until the end of the 70s that records began to appear.

From the 80s on, the name of the game has been diversification. Hip-hop draws from

every genre it comes into contact with: disco, electro, dub, rock, pop, jazz, industrial, country. It devours new technology: grooveboxes, samplers, synths, FX, virtual turntables. It comes in dozens of flavours: alternative, Christian, crunk, G-Funk, gangsta, grime, hardcore, horrorcore, new jack swing, old school, new school, reggaeton, snap. It has spread like an unstoppable musical virus into every corner of the world.



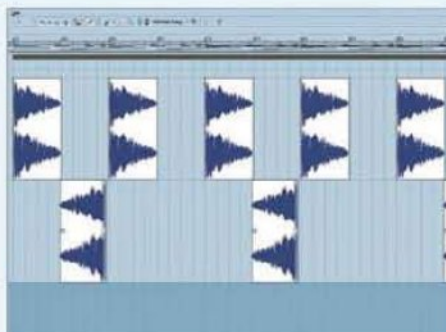
Audio examples from the walkthrough are in the Tutorial Files folder

>Step by step

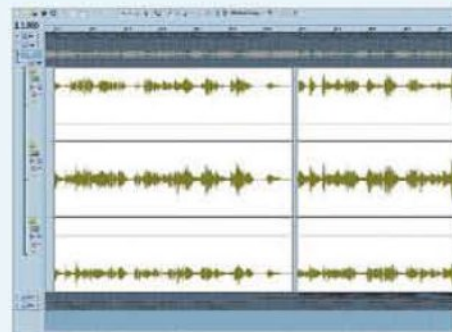
Avant-ifying hip-hop



1 > I begin work on my avant hip-hop piece by creating the beat. First I turn to Reaktor's Massive groovebox, load it up with an assortment of hip-hop samples and create a kinky little drum+voice loop. Then I add kicks, hi-hat-ish finger cymbals, and normal cymbals (forward and reverse). Here's the result, which you can find on the **cm** DVD: **Beat.wav**.



2 > Next on the agenda is the bass. I'm loathe to add a conventional bassline for fear of over-densifying the track's low end. Instead, I find a beautiful sustained bass note that sweeps slowly upward, revealing its harmonics one by one. I arrange it back to back with a reverse copy of itself and leave in some silence to let it breathe. File: **Bass.wav**.



3 > I try several approaches for vocals. First I attempt to lay down an avant rap - but this is a huge failure! Then I find an (avant) awesome Winston Churchill war speech, but copyright concerns prevent me from using it. I think of going voice-less, but instrumental hop is not what I'm after. Finally, I settle on this abstract vocal fantasia on air from F'loom. File: **Voices.wav**.



4 > Onto the pads. I want a rich and unconventional layering of multiple evolving and devolving rhythmicised pad passages - something that will set a mood that's one part luscious and one part sinister. I spend some time rooting through my personal treasure trove of homemade samples, pick and arrange a few, and end up with this: **Pads.wav**.



5 > All the ingredients are on the table: beat, bass, vocals, pad. Now it's time to throw 'em in a pot and stir things up. I use Acid Pro 7 for arranging and mixing, because I love its clean and workflow-friendly GUI. I decide to create a miniature track (about two minutes) with an intro, outro, and brief oasis of sparse calmness in the middle. Check it out: **Air_mix.wav**.



6 > iZotope Ozone 4 is my weapon of choice for mastering. I choose one of the hip-hop presets, tweak it a bit to fit the mix, and end up with this: **Air_master.wav**. Is it conventional hip-hop? Definitely not. Is it hip-hop-ish enough to qualify as an avant-garde variant of the genre? For me: yes. There's a simple catchy beat, over which a story is told.

Experimentalists' corner: Closing thoughts

About half a year ago I got this crazy idea to see what would happen if I infused a set of six popular electronic music genres with *Off The Dial* out-there-ness. With this issue's *OTD* the series is complete: avant downtempo, avant techno, avant drum 'n' bass, avant house, avant dubstep and avant hip-hop.

It's been an intense, engaging, often challenging, sometimes exasperating journey. As a conservatory-trained 12-tone

serial composer, I'm conditioned to disdain metronomic beats, meters, rhythms. So, in order to open myself up to these genres, I had to get over my personal 4/4 backbeat taboo. And that was tough. Snare and hi-hats and kicks: oh my!

Fortunately, I had some nice surprises along the way. I ended up falling in love with every genre I avant-ified. The more I listened and produced, the more amazed I

grew at the high levels of artistry and craft that go into a creating good genre pieces. It's hard, mad skillz-requiring work!

Finally, I was surprised how much I enjoyed contributing to the conversation rather than standing apart from it, as is my wont. It might feel lonely to return to my anti-genre stance; perhaps it won't. Either way, I've expanded my musical horizons, and my future work will benefit. **cm**

Off the beaten path

This issue we intentionally put the cart before the horse in an attempt to wrangle new inspiration from old favourites



Scot's KarmaFX Synth patches are in the Tutorial Files folder

> **The waveforms produced by typical analogue synthesisers are, to put it mildly, simple. If you break down a sawtooth or a square wave into its individual harmonics, you'll see that they form an obvious, repetitive pattern, from the loudest (the fundamental) to the quietest. So, if you want to create anything complex or unpredictable, you need to alter or corrupt that simple wave.**

The desire to manipulate the raw stuff of waveforms is what leads a lot of sound designers into modular synthesis. It's also what lures

guitarists into the murky world of stompboxes (the two approaches are virtually the same thing). After years of being tied to the same old signal paths, a modular system offers an inspirational playground. There is a joy in knowing that you need not put the ring modulator before the filter, or the echo before the reverb.

That last bit is the concept that shook loose my muse when I got my first patchable modular synth. It had a built-in spring reverb module that I tended to tack on at the end of the patch to add a little pseudo-ambience. However, it wasn't long

before I found that the reverb that had sounded uninspiring on the output could do wondrous things when placed before the filter in the signal path. It beefed up the waveforms in an interesting way, particularly when overdriven. I realised that I was introducing distortion to the waveforms before the filter stage. This was a revelation!

Today, we have all sorts of wondrous modular instruments available to us. Most provide effects modules and some even enable us to bring in plug-ins. We can use these tools to create a similar subversion of the predictable signal path.

>Step by step Shaking up the signal path



1 > As is often my wont, I'm using KarmaFX Synth. You can get the demo at karmafx.net or use any other modular synth you like, as long as it has effects built in or can load plug-ins. We don't want to be tempted to fall back on any preset signal paths, so we start with a blank slate. Load the patch called **Blank Slate** or create your own 'empty' patch.



2 > We start with the obvious: a pair of oscillators. We're using the standard analogue oscillators here, but there's nothing preventing you from using a sampler or even an audio input. Right-click a blank area and choose **Osc 1** from the **Generator** category of the **Add Modules** menu. Do this twice, so that you have a matched pair.



3 > Though we can't hear anything yet, both oscillators are pumping out a sawtooth wave by default. Like I said, we're keeping it simple, so leave the **Sawtooth** in place for the first oscillator. Next, choose a **Square** wave as the waveform to be produced by Osc 2 and turn its **Phase** knob up to half way.



4 > Let's mix our two oscillators together using a Mixer module. Right-click a blank area to the right of your modules and choose a **Mixer** module from the **Amplifier** category in the **Add Module** menu. Next, right-click the new module's title bar to select **Generator1** as an input. Repeat the procedure to route Generator2 into the Mixer as well.



5 > Tidy up the interface by aligning all these newly added modules along the left side, creating a 'signal-generator' section. It's a good idea to listen to the sound in its current state so that we better understand how any further ministrations will affect it. To do so, right-click the **Amplifier** module's title bar and add **Amplifier2** (that's the Mixer) as the input.



6 > You'll see a virtual cable stretching from the Mixer to the Amp module, but you won't be able to hear anything until you trigger a note from your MIDI controller. Be careful, though - it could be quite loud, and you won't be able to stop it without adjusting the Amplifier module's **Volume** or disconnecting it. When you're ready, take a listen.

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 **cm Studio**. 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

HARMONICS

We all know that more harmonics results in a more complex sound. However, it might surprise you to learn that harmonics are nothing more than simple sine waves. Any sound can be broken down into a pile of sine waves that vary in pitch, amplitude and phase over time. The simplest wave (sine) has only one, while more complex waves have more.

RECOMMENDED LISTENING

BRIAN ENO, *HERE COME THE WARM JETS*

Eno is a master at subverting the traditional approach. He once said that he never documented the complex signal paths he used because he always wanted to come up with something new. His albums showcase the results, particularly the early 'rock' records, on which the effects are laid on so thick that it's often difficult to discern exactly what instrument is playing each part.

PRO TIPS

FORGET ABOUT IT

It's easy to fall back on the same old chestnuts when caught up in a rush of inspiration. Have you considered not saving your patch? Make it hard to repeat yourself and you'll soon come up with a few new things.

TAKE IT OUTSIDE

One of the best ways to introduce some chaos to your signal is to inject a little of the real world. Send your signal out via an amp or speaker, mic it up, then reintroduce the results back into the path. Use the natural reverb of your bathroom or stairwell to add some true randomisation.

ACTING ON IMPULSE

If you can't get your signal outside, try a convolution plug-in like Nebula, Space Designer or the like. These processors use sampled 'impulses' from real spaces or other effects devices, calculating how your signal might sound when sent through that device or space. It isn't perfect, but it works pretty well and can create some very unusual effects.



7 > That's not terrifically exciting. Still, that's what we'd be dealing with if we were going for a typical dual-oscillator analogue synth patch. There are ways to juice it up that stay within the standard repertoire, but that's not what we're going to do. We do, however, need to build up some basic elements. Right-click and bring up a Moog filter module.



8 > Patch the Moog filter into the Amplifier by right-clicking on Amplifier1's title bar. Next, insert an envelope generator. Right-click a blank area and select an **ADSR** module from the **Modulator** category of the **Add Module** menu. Next, right-click Amplifier1's **AMP** knob and select **Modulator1** as the input. This will lash the ADSR to the patch's amplitude.



9 > Let's make a few adjustments to the ADSR's settings. Set the **Decay** knob to around **70**, the **Sustain** to **50** or so, and the **Release** to **70** or **80**. This gives us a basic envelope shape so that we can hear our signal when we pump it through. Right-click to add a **Reverb** module from the **FX** subcategory of the **Add Module** menu.



10 > Now, right-click the Reverb's title bar to add **Amplifier2** as the input for that module. Route this into the Moog filter module by right-clicking the title bar of the Moog module and selecting **Effect1** as the input for that module. At the moment, it isn't having much effect, so increase the reverb's **WET** parameter to **90** or so.



11 > The filter is opened wide, so there isn't any filtering being applied. Let's change that. Reduce the filter's **Cutoff** knob to **26**. Now, try playing a note. To hear what your reverb is doing to the sound, turn its **Wet** knob down all the way and play a note. That's what it would sound like without the 'verb. Turn it back up and increase the Moog filter's **Resonance** to **40** or **50**.



12 > This is a pretty evocative effect, and we can shape it further by adding another ADSR to modulate the filter's **Cutoff** knob. Set the new ADSR's **Attack** to **88**, **Decay** to **100**, **Sustain** to **81** and **Release** to over **90**. That's very atmospheric! Increase the **Polyphony** to make a pad sound. If you want to get really weird, insert a delay between the reverb and the filter. **cm**



NU:TONE

The Hospital Records hotshot talks church organs, soft synths and the future of drum 'n' bass, as well as revealing some of his personal Reason techniques

> Have you ever looked back and wondered what it was that first attracted you to drum 'n' bass? Perhaps it was the technology; the joy of chopping up loops on your mate's Akai S1000; or the ground-breaking, timestretched invention of those early Metalheadz releases. Maybe it was the absolute intensity of the music; or having your ears blown off by a tune that clocked in at 180bpm; or trying to dance to Squarepusher's *Come On My Selector*.

For Dan Gresham – aka Cambridge-based Hospital Records' veteran, Nu:Tone – it was... the church organ! We'd better let him explain.

"I studied classical piano from the age of seven, and then went on to the church organ," says Dan. "As anyone who's played it will tell you, the church organ is a megalomaniac's dream. It's physically huge and the sound is equally immense. The biggest pipes go below the level of human hearing, and the smallest pipes will go right to the very top of it. It's an extreme instrument.

"Drum 'n' bass was the first music I heard that had that same amount of power! With just a sampler and a couple of synths, you had all this energy at your fingertips."

At the time – the mid-90s – Dan was studying music and electroacoustics at Durham, while making a name for himself as a rare groove, funk and soul DJ. Also at the university was fellow DnB doyen John B (coincidentally also featured in this issue – see p50). The two became friends, bonding over the tasty loops on Gresham's old funk 7-inchers.

"John showed me how to chop up loops on a sampler, and that was it," Dan remembers. "I was hooked. I worked with other people's hardware samplers and effects for a couple of years, but once I started thinking about getting my own setup, software seemed the obvious route.

"Reason really appealed to me because it had that hardware 'feel' on-screen. You had racks and patchbays; a mixing desk that looked like a regular mixing desk. It was all very familiar to me. Plus, it was relatively inexpensive, it didn't take up much room and it was incredibly powerful. It seemed like the sky was the limit. If I wanted 40 effects in a row, I could have them. If I wanted 50 synths, I could have them. My imagination was only limited by the power of my computer."

These days, Dan's computer is a custom-built Digital Village Synergy AW700, linked to a MOTU 828 Mk3 that outputs to a 24-channel Allen & Heath mixer. "There are people out there who say that Reason's sound quality isn't brilliant – I guess it has to compress the sound in the engine to get so much stuff into one program. But, if you look at my setup, I'm sending quite a lot of stuff through the Allen & Heath desk, anyway... which is pretty knackered and crackly. After it's gone through that, I don't think anyone's going to notice a bit of compression."

Reason to live

Dan says that the vast majority of basslines, loops and hits on his new album, *Words And Pictures*, all come from Reason.

"The single hits come from ReDrum. I'm happy to program on the MIDI page, but I like to use the ReDrum step sequencer, too. It's got a nice old-school feel. When it comes to loops, Dr. Rex is brilliant! I've got all my breaks REX'd-up and ready to use – it's so immediate. I can have my drums up and running in no time.



Nu:Tone takes a walk in the Cambridgeshire countryside in wholly unsuitable footwear

"Like I said, there is a tiny bit of drop-off," he continues. "If you listen to a clean loop from a CD and compare that with what's coming out of Dr. Rex, you'll hear subtle differences. But, once you've layered up a few sounds, added some distortion and pushed everything to the max, those subtleties don't make an appreciable difference to what's coming out of the speakers."

Even after eight years of using Reason, Subtractor is still one of Dan's favourite synths. "It's all about ease-of-use. Within minutes, you can have a really great bass sound. Especially when you chuck in a bit of *Scream 4* [*Reason's distortion/destruction effect*] and the very usable EQ. Believe me, Subtractor offers some serious, subby bottom-end. What I'll often do is get a simple sine wave running on the low notes – something around 45Hz – and then mirror that with a higher sawtooth that's got no bottom end at all. Just make sure that you keep the filter envelope nice and sharp on that sawtooth.

"I also stick the sawtooth through Unison [*Reason's chorus effect*] to give it a bit of width. You have to be very careful putting your bass into stereo, especially if you're thinking of cutting the track to a dubplate. Stereo bass can cause all sorts of problems for the cutting stylus – that's why I only put the sawtooth through the Unison. You need to keep the stereo in the mid-range.

"You end up with a nice, full, stereo mid-range, with a sub sitting underneath it all. The mids are doing most of the work, but your brain can hear those subs, so it's tricked into thinking that the whole thing is far bigger and bassier than it really is.

"You'll probably need a bit of sidechain compression on the sub, otherwise it'll get in the way of the kick. Don't worry about the sawtooth – it won't interfere. Yes, you'll get a bit of ducking on the sub, but your mid-range is constant, so you never lose any presence."

Unsurprisingly, Subtractor isn't the only Reason synth to find its way onto Nu:Tone tunes – Malström is also very much in play.

A closer look at Nu:Tone drums

"On *Invisible* [from the forthcoming album, *Words And Pictures*], the beats were the first part of the track to be laid down.

"The drums are made up from a few classic breaks reinforced with a couple of carefully chosen individual hits. The track opens with a high-passed version of the *Scorpio* break. The original break is made up from two individual takes, which are miked up differently and panned left and right. As a result, I always split the break into left and right, and process them individually. On one channel you get a really clean kick and the hi-hat. As they occupy such different frequency ranges, it's really easy to EQ it. On the other channel, you get the snare and toms. It's really unusual to find a break that gives you the separate elements in this way, but it allows you such creative flexibility.

"As the intro progresses, a subby kick drum and a beefier snare are added to give some weight. At the drop, a high-passed *Amen* break is layered over the top, along with the *Hotpants* shaker break. All of these breaks are programmed to stop dead at the end of the snare on the fourth beat of the bar, which bizarrely ends up giving more impetus to the beat.

"For the second half of the chorus, the shaker break is switched to a fast, 16th triangle pattern and the breaks are all programmed to stop after the kick on the first beat, coming back in for the snare on the second. The space gives the beats a lift and the change keeps the listener on his toes."

Nu:Tone's gear

PC
Intel Core i7 3.2GHz
3GB RAM
Windows 7
2.5TB hard disk

SOFTWARE AND HARDWARE

Steinberg Cubase 5
Propellerhead Reason 4
Steinberg Wavelab 7
MOTU 828 Mk3
Mackie Big Knob
Mackie HR824 monitors
Novation SL61 MkII
Paul Stretch
Sonic Projects OP-X Pro-II
Arturia Jupiter-8V
Scarbee Vintage Keys
Native Instruments Komplete
Akai Akaiizer

"I try to avoid being influenced too much by other drum 'n' bass producers - I feel the music is at its best when it's not being too introspective"



The future of drum 'n' bass

"I thought the cm feature *Dubstep vs Drum 'n' Bass* (cm159) was really interesting. Drumstep, as an idea, certainly works for me. In fact, there are a couple of tracks on the album which are technically drumstep. But if you were to ask me where things are going to from here... who knows? Although it would be nice to be able to predict the future, I don't think anyone can really be sure what's going to happen. All I know is that the scene seems to be going from strength to strength. The kind of music out there is really diverse and there are a lot of people working very hard to do their own thing.

"Software is certainly doing its part to help develop the sound of DnB. Look at what happened with [Native Instruments] Massive and dubstep. Artists are looking at the software that's available and working out how to push it into new areas. As long as artists at the forefront are still stretching themselves, it's going to be an exciting journey.

"The ironic thing about putting *Words and Pictures* together is that I was actually listening to a lot of old stuff. Just lately, I've been returning to tracks from George Duke, Joe Sample, Manhattan Transfer and Sade. A lot of 80s stuff, really. I'm sure that coincided with me getting hold of the Jupiter-8V, which has an amazingly warm, 80s side to it. As far as other DnB artists go, my brother, Logistics, is a constant inspiration. Calibre, S.P.Y. and Lenzman all make wonderful music. That said, I try to avoid being influenced too much by other drum 'n' bass producers - I feel the music is at its best when it's not being too introspective."

"You can get some nice, floaty pads on the Malström - great for adding atmosphere to a track. Unfortunately, I've never really been able to get my head around Thor. To be honest, I've had a play with it and it sounds great, but for that type of intricate synth programming, I'm more likely to turn to one of the VST synths like Massive or anything from the Arturia package."

Software self-control

Despite being a Reason fan, Dan admits that it has its limitations, the most obvious being its inability to handle linear audio. That problem can be solved now with the addition of Record, but, in the past Reason users had to look elsewhere when it came to recording audio. Back in his university days - and during the period when he briefly taught music technology at a sixth form college - Dan had ready access to most of the major DAWs, including Pro Tools, Cubase, Logic and Digital Performer. When it came to looking for a Reason partner, he used his experience to settle on Cubase.

"Back when I was messing about with the S1000, I used Cubase as a MIDI program," explains Dan. "So, when it came to looking for something that was going to be able to handle my audio, Cubase was the obvious choice. As the whole VST thing got bigger and bigger, Cubase became a lot more useful, but it still has its drawbacks. Even with Cubase 5, you can only chain eight inserts together - with Reason you can go crazy."

When it comes to VST plug-ins, Dan resists the tempting urge to get every new one that hits the market.

"If you're not careful, you can end up with a computer that's stuffed with gear that you don't really know how to use. I like the idea of having a few choice pieces that I really know inside out," he explains.

"On the new album, I spent a lot of time digging around in the Arturia set. The synths are all fairly standard subtractive synths, but they all go about the process in quite different ways. The Minimog is a classic layout and pretty instantly

recognisable. The Jupiter-8V is a bit more involved, but still really straightforward. The difference in timbre between those two couldn't be bigger, though. The Moog is very upfront and quite brash at times, while the Jupiter is the sound of the 80s - it's amazing for pads, and can give instant width to a track if used in the right place.

"The Jupiter has sort of replaced the Malström," Dan continues. "Its soundmap is an interesting way to explore presets, because it displays them as points on a graph. You can either click on a preset, which will load the patch instantly, or click on a point in between presets, which will generate a unique patch that's an approximation of the nearest presets. It can yield some pretty crazy results, but they can be great starting points for coming up with patches you might not have programmed from scratch."

Another Nu:Tone staple is Scarbee's Vintage Keys collection. Coming from a rare groove, jazz and funk background, Dan was immediately attracted to its impressively weighty selection of Rhodes, Clavs and Wurliizers.

"I've had a real Wurly for about 15 years," he says. "It sounds amazing... an incredible instrument. But, if I'm being totally honest, it's seen better days, and it never really 'honks' as much as I want it to. The Scarbee set is spot-on. If you want a bit more 'honk', you turn up the 'honk'. You've got total control over the sound."

"When you're making music like drum 'n' bass, I think it's important to include some really organic sounds. You've got your loops, your beats and your synthy basses, but Scarbee gives you the sounds that can turn a run of the mill drum 'n' bass track into a proper piece of music. They are the sounds that take your mid-range and push it right out there. They give listeners something to chew on!"

The big enabler

Although Dan is a thoroughly converted in-the-box/software-based musician, he still has fond memories of working with classic hardware like the Akai S1000 and Emu 4XT.

"There's no doubt that those two bits of kit had a huge influence over the sound of early drum 'n' bass and jungle," he reminisces. "Take something like timestretching or even the Z-Plane filters on the Emu. When you think about it, it's totally bizarre that one function on one bit of kit had such a huge impact on the whole sound. All that neurofunk stuff - Ed Rush & Optical; without the Emu, how would that sound have developed?"

"But what you've got to remember is that samplers used to cost an arm and a leg. Vintage keyboards can still cost thousands, and decent outboard effects and vocoders don't come cheap either. Is it any wonder that people decided to go down the software route?"

"Recently, I've been talking to a few people who have actually decided to go back to hardware. You can pick up an Emu or an Akai for peanuts! It sounds like a great idea, but how long would it take before you ran out of memory or struggled to get a SCSI card? When I really got stuck into making my own tunes, I was after an epic, expansive sound that was only really possible - at least with my limited resources - using software."

"Even if you just take one aspect of my new album - the vocals, for example - the freedom and the flexibility you get with Cubase is incredible. There are a lot of guest vocalists on this album and, often, I'd only have them up at the studio for a day, or two days at the most. With Cubase, you don't have to do that one perfect take. You can comp a great vocal together from as many takes as your computer will handle. There were a couple of times when we got some excellent vocals apart from maybe one or two notes. All you need to do is pull up VariAudio and you can sort things out in seconds. It's so simple."

"Some people might see that as laziness," he shrugs. "And, in some ways, I guess they're right. It would be great to have a massive studio, unlimited time and an unlimited budget... the freedom to spend time looking for that perfect take. But in the real world, that just ain't going to happen. Most people have just got a couple of hundred quid, a computer, a bedroom and a head full of ideas. Without programs like Reason, Cubase and all the VST stuff, there are thousands of people out there who just wouldn't be making music. And they certainly wouldn't be making drum 'n' bass." **cm**



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£1134 of FXpansion plug-ins up for grabs

Win the all-new Geist
and the brilliant
DCAM: Synth Squad!



COMPUTER music > competition

British plug-in powerhouse FXpansion have given us a trio of prize bundles to give away – one for each of three winners – containing two of their very finest efforts.

Sample-based drum instrument FXpansion Geist (£189) is reviewed in this very issue! Flip to p98 to find out exactly what we make of this tip-top sample-sculpting beat machine.

The equally impressive FXpansion DCAM: Synth Squad (£189, cm143, 9/10) contains three synths, whimsically named Amber, Cypher and Strobe. Each has its own sonic speciality: Strobe is strong on traditional analogue-style subtractive synthesis, Amber is based on string machine synths of old, and Cypher specialises in audio rate modulation. We don't hesitate to say that we love Synth Squad, and in our very own words, "it's capable of a huge range of tones, with a fantastic quality of sound that puts it straight into the top tier of soft synths."

HOW TO ENTER

To enter, send a text to **87474** containing: the keyword **GEIST**, 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/cm161. Entries must be received between **January 12 2011** and **February 10 2011**, and only UK residents aged 18+ may enter.

The question

In German, Geist means...

A. Beat or rhythm

Text: **GEIST A your.email@address.com**

B. Machine or robot

Text: **GEIST B your.email@address.com**

C. Ghost or spirit

Text: **GEIST C your.email@address.com**

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cm/reviews

The latest computer music gear tested and rated!



96_ AVID PRO TOOLS 9

One of the biggest names in the DAW world aims for mass acceptance with its latest version



98_ FXPANSION GEIST

Guru is dead - long live Geist! We assess this spiritual successor to FXpansion's classic beat machine



102_ FLUX IRCAM SPAT

Three reverb engines, source positioning and surround support make this ideal for space explorers

This month

- 96_ Avid Pro Tools 9
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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

EDIT MODES

Each affects the way blocks of data can be moved within the edit screen

EDIT TOOLS

Tools include the context-sensitive Smart Tool, Scrubber and Zoomer

TRACKS

Inserts, sends and levels can be modified directly on each track

EDIT WINDOW

All audio and MIDI arranging and editing happens here

TRACKS LIST

All currently available tracks are listed, including those not assigned a voice

REGION LIST

Available audio and MIDI regions can be dragged from here into the edit screen

GROUPS

Pro Tools 9 includes flexible mix and edit grouping, and groups can be activated and edited here

TRANSPORT WINDOW

Recording settings can be chosen here, including MIDI merge, destructive record and quickpunch

THE MIX WINDOW

Show or hide elements, including inserts, sends and the information notes

DELAY COMPENSATION

The readout indicates the plug-in delay, the compensation applied and the manual offset

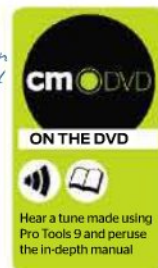


Avid

Pro Tools 9

£516

PC MAC



Finally freed from the shackles of hardware dependence, this big-hitting DAW is ready to take on all comers

System requirements

PC 2GB RAM, Windows 7, 15GB hard drive space, RTAS only

Mac 2GB RAM, OS X 10.6.2, 15GB hard drive space, RTAS only

> For years, computer musicians have bemoaned the proprietary nature of Pro Tools. Unlike every other DAW, the software would only work with Avid's own audio interfaces. Pro Tools 9 marks the end of this archaic practice, putting it on an equal footing with its numerous rivals.

Pro Tools still comes in multiple varieties: HD, HD Native and the 'standard' edition that we're reviewing here. Both HD versions require Pro Tools hardware for full functionality, either to interface and process audio via TDM DSP (HD); or just interface it, using the computer's CPU for processing (HD Native). The third option - simply called Pro Tools 9 - is the only truly open system. It requires just the software, a PC or Mac, and a suitable audio interface (ASIO or CoreAudio), and it's this version that we're testing. You can even use it with your computer's onboard sound system - handy when on the move.

Like other all-in-one DAW packages, PT9 combines audio recording, MIDI sequencing, automation, real-time audio plug-ins, offline audio processing, elastic audio, instrument plug-ins and bundled sample content - basically

everything you need to make complete pro-quality tracks. It is, in essence, a replacement for Pro Tools LE and M-Powered (but note that v8 of the latter is still currently available).

The big downer for existing users is that this will mean a paid-for upgrade, while new users are also looking at a higher entry price. In return, the spec is much better, but paid-for extras and enhancements do still exist (see *Power-ups*).

Making it all better

Major improvements include a higher track count (96 mono or stereo at 44.1/48kHz), up to 32 channels of audio in/out (interface dependent), 256 buses, 512 MIDI tracks, 64 instrument tracks, 128 aux inputs, OMF/AAF/MXF support, EUCON support for Euphonix Artist/Pro devices, multitrack Beat Detective, pan law options and automatic delay compensation (ADC).

Officially, only OS X Snow Leopard and Windows 7 are supported. Third-party audio interfaces will not be officially qualified on an individual basis. Copy protection is still via iLok (and, thankfully, the boxed version includes a pre-authorised iLok).

"Although the shift is mostly positive, there are some downsides"

Don't be a stranger

While some updated DAWs can feel like totally new programs, v9 is all very familiar. In fact, there are no further headline-grabbing changes. You get the same bundled six-instrument pack and additional sample content as v8. This is a great starter set, though you'll still hanker after the full Instrument Expansion Pack. Next up, the standard effects plug-ins (including the recent AIR effects and bundled Bomb Factory ones) cover most ground. But apart from multitrack capability being added to Beat Detective as standard, there's also not much new here.

On the upside, switching between interfaces is simple, and there is reasonable flexibility here: Mac users can use a Pro Tools Aggregate Device for combining CoreAudio interfaces. Alas, within Pro Tools, Avid's own interfaces only use DAE drivers and so can't be aggregated. Interestingly, low-latency hardware monitoring still exists if you select an Avid interface that supports it (002, 003, Mbox Pro and Mbox Pro 2) but seems to be otherwise unavailable.

Automatic delay compensation is big news for non-HD Pro Tools and we found it worked very well, not least because it flags up the channel whose plug-ins are causing the most latency. There's also further manual adjustment should you need it, giving excellent user control. Pro Tools still doesn't have an offline rendering mode – if you mix down a ten-minute song, it'll take ten minutes to do it, unlike most DAWs, which accelerate the process. Newcomers should also be aware that Pro Tools uses its own plug-in format: RTAS. VST/AU aren't supported (although there is a VST wrapper available).

Small steps

Pro Tools began life as an audio recording system, and whether you're using QuickPunch to drop into record or mixing with lots of automation, it's still incredibly reliable and good at such tasks. Audio and MIDI editing can all be done in the main edit screen, but, there's also a dedicated MIDI Editor pane, similar to other big-name DAWs. One thing lacking is the option to play instruments from the QWERTY keyboard, and this combined with the fairly 'functional' bundled instrument set means hardened



Vacuum is one of the instruments included in the standard setup, which is decent fare, if a little sparse

Power-ups

Pro Tools 9 sees Avid bring the standard and HD systems much closer together. However, to really get PT9 up to (near) HD spec, you'll need to buy the Complete Production Toolkit 2 (CPT2), costing £1716. This enhances the software's capabilities considerably, with 192 tracks (512 voiceable) and 128 instrument tracks, just like a full HD system. The only limitation here is that recording is limited to 32 tracks at once, not 64 like HD Native – but we're sure that'll be plenty for typical users.

CPT2 adds further HD features, such as VCA mixing, up to 7.1 surround mixing, video editing (with 64 video tracks), Pro Tools ICON support, X-Form timestretch, advanced automation (including glide, auto-join and auto-match), and advanced editing tools (such as the scrub trimmer). Clearly, aside from the lack of TDM capability, this is ideal for those who want the full Pro Tools experience but don't want to be tied to Avid hardware. On a related note, HD users with Avid hardware have a licence allowing them to run Pro Tools 9 with CPT2 capabilities on any system, which is further encouragement for people to eventually sign up for HD in some form.

The other thing to note is that Avid's new Harmonically Enhanced Algorithm Technology (HEAT), which is designed to emulate valve gear and magnetic tape, requires a full TDM HD system (TDM being Avid's hardware-bound DSP system). We haven't tried it ourselves yet, but user reports are positive. It'll set you back another £426.



The CPT2 will bump Pro Tools up to near-HD standard, while HD TDM users can warm up their mixes with HEAT



programmers will probably look elsewhere. However, if you combine recording and programming, Pro Tools' stability and sonic quality are very welcome.

Although the shift to Pro Tools 9 is mostly positive, there are some downsides. Firstly, there's no longer an equivalent option to buying cheap interfaces with Pro Tools LE included, and new v9 bundles reflect the higher price. Next up, to compete with its nearest rivals (in terms of spec at least), you still need to buy the Complete Production Toolkit 2 (£1716) and Instrument Expansion Pack (£432). Thirdly, the onslaught of instruments and effects courtesy of the AIR team seems to have ground to a halt for the time being.

And finally, while Avid have done a reasonable job of harmonising the various versions into one unified program, comparison charts are still needed to nail down precisely what to expect from a particular setup. Even so, in most respects, they've finally given users what they asked for, and Pro Tools can now be viewed as a direct competitor for a wide range of DAWs. **cm**

Web www.avid.com

Contact Avid UK, 01753 655999

Info LE upgrade, £215; M-Powered upgrade, £300; HD7/HD8 upgrade, £300

Alternatively

Apple Logic Studio

cm143 >> 10/10 >> £408

PT9's nearest rival, with masses of content and plug-ins, but Mac-only

PreSonus Studio One Pro

cm146 >> 8/10 >> £365

Newcomers seeking a high-spec DAW should seriously consider this

Verdict

For Improved overall specification

Automatic delay compensation

Multichannel Beat Detective as standard

Greater hardware flexibility

Useful instruments and plug-ins

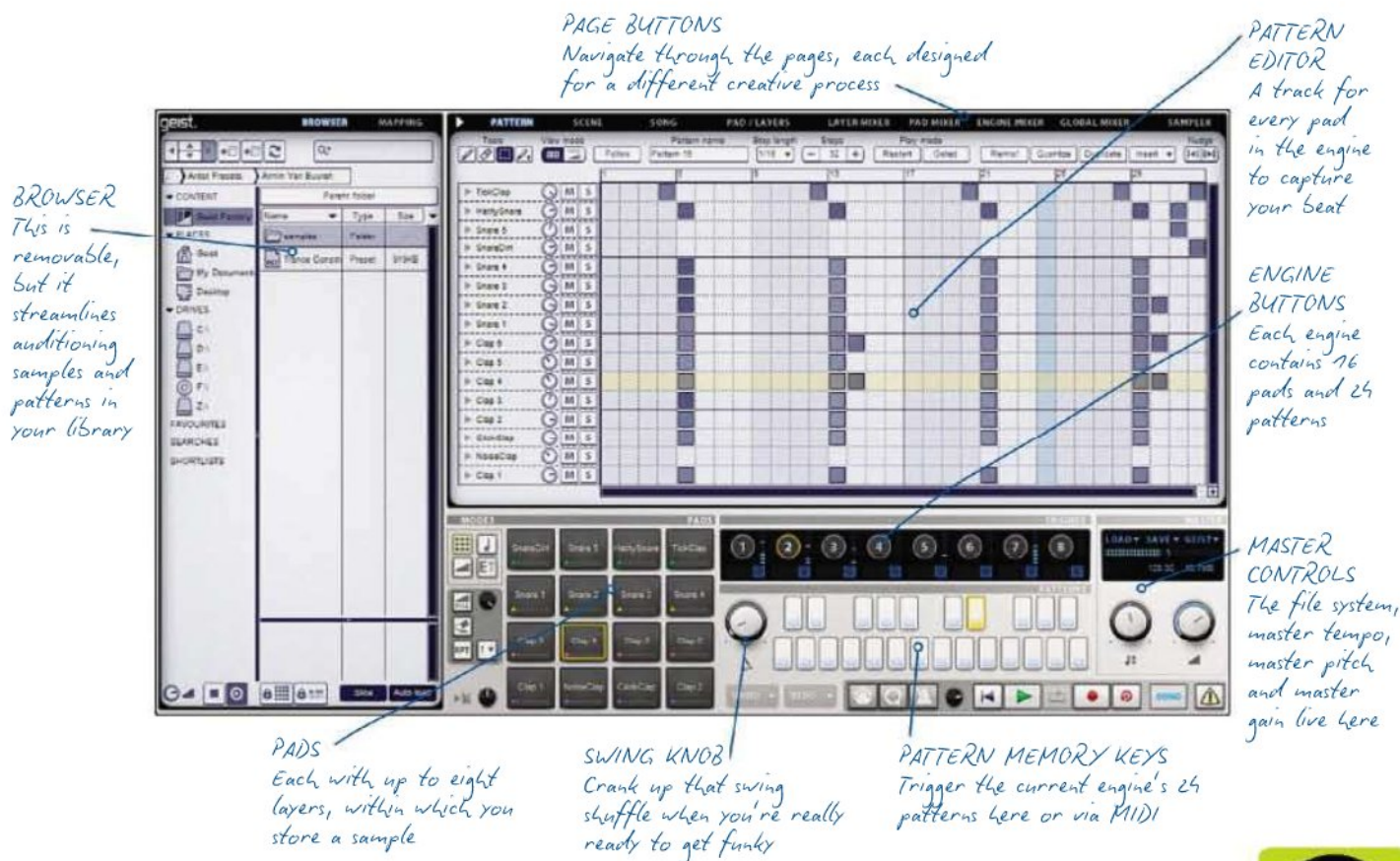
Against Entry price is higher

Add-ons needed for full feature-set

No offline mixdown

Not a huge update in terms of features, but the abolishment of interface reliance makes Pro Tools 9 far more attractive

8/10



FXpansion Geist

£189

PC

MAC



Classic sample-based drum machine plug-in Guru is reborn, renamed, reskinned and rewritten from the ground up

System requirements

PC Core 2 Duo 1.86GHz, 2GB RAM, Windows XP/7, VST/RTAS host for plug-in use

Mac Intel CPU, 2GB RAM, OS X 10.5.8/10.6.2, AU/VST/RTAS host for plug-in use

> Back in 2005, FXpansion released a virtual drum machine called Guru. In many ways, it challenged convention, and hence it was adopted by a slew of name dance producers. Geist replaces Guru in FXpansion's product line and is essentially its spiritual successor (though it's important to note that its code has been written from scratch). It continues in the same vein, built as an all-in-one electronic drum solution where workflow rules all. Guru owners will take to it quickly.

Geist deals with sampled loops and single hits. It comes with a super-high-quality sound library, featuring contributions from artists including Armin Van Buuren, D Ramirez and Sharooz. It can slice loops into individual hits, for assignment to one of 16 pads. In fact, it can store up to eight samples per pad, with useful features such as velocity split and random trigger.

The pad concept is an evolution of that of popular hardware drum boxes like Akai's renowned MPC series. In Geist, each pad has a track in the pattern editor. The latter is both incredibly easy to use and sublimely detailed, featuring automation lanes in which you can

twist up the sound by modulating several parameters, from pitch and velocity to send levels and pad effects settings.

Quality mixing tools are provided at pretty much every conceivable point in the signal chain, enabling you to polish your drum mix to a fine sheen. The internal effects sound as good - if not better - as those bundled with most DAWs, and there's no shortage of them either, with 30 to choose from. Overloud's Bverb algorithms have been licensed for reverb modules, while FXpansion's DCAM circuit-modelling technology has been used on some of the saturation, compression and filter modules. It sounds surprisingly convincing, especially on the compressors.

Number crunching

24 patterns and a full set of 16 pads constitute an 'engine', of which there are eight. Think of it as eight instances of Geist, but all accessible from one interface and triggerable as the same MIDI device. It means that you're unlikely to ever run out of pads or patterns, and makes more sense than having an enormous, unmanageable

"Just like Guru,
Geist does a great
job of capturing the
subtle nuances of
your groove"

interface that you have to wrestle with to access its power.

Recording patterns via a MIDI controller (or even the mouse) gives a real 'hands-on' feel and, just like Guru, Geist does a great job of capturing the subtle nuances of your groove; unlike Guru, it has up to 1024 steps per pattern. Recording in Geist is great fun and made easier by the new Retro Record functionality, which enables you to rescue rhythms you were jamming out even before you hit record. How does this work? Well, Geist is essentially recording in the background at all times, so you can capitalise on those spontaneous ideas that pop out while you're just messing around.

Also new is the Sampler page, which is designed to be used on the fly. It can record audio live from an external source and even resample - thus you can use Geist to build a beat, resample it, slice it back into individual hits, remix it with the pattern editor and take full advantage of yet another stage of automation and effects. We tested this while working on an electro house track and were able to rapidly churn out endless variations on drum fills and glitch-type edits.

This is all made even more fun by the new timestretching tool that's built into every pad layer. It uses an algorithm called Dirac3, and it definitely has its own sound - it's far from grainy and is actually very smooth. It's difficult to make it sound bad, even at extreme values or when applied to problematic sounds like kick drums.

You can route audio from elsewhere within your DAW to Geist's sampler via an additional included plug-in named The Spitter. Its interface is minimal, but that's perfect for what it does. You add The Spitter wherever in your project you'd like to sample from, then select it as an input in Geist. You can use multiple Spitters, too.

The friendly ghost

A lot of musicians are going to fall madly in love with Geist, especially those producing dance, hip-hop, R&B or pretty much anything that requires a tight creative flow and a killer

groove. The only drawbacks we found are related to the power of the thing: there's a lot you can learn to do with Geist and if you push it hard enough, it will start to make pretty serious demands on your CPU. It wouldn't be fair to mark the software down for that, though, and ultimately, Geist delivers everything it promises - and then some. **cm**

Web www.fxpansion.com
Contact via website
Info Guru crossgrade, £95



You can lay out your whole track sequencer-style within Geist's new song page

Chaos engines

To trigger patterns across several engines simultaneously, you can send MIDI notes on multiple channels. A far more convenient way of doing this, though, is to use 'scenes', whereby you define sets of patterns to trigger from a single MIDI note (a bit like triggering scenes in Ableton Live's Session view).

These scenes are an ingenious, powerful way of accessing everything at once in a live situation. It makes Geist feel like a real instrument, because the entire process, from sampling to sequencing, can be done in a hands-on, real-time way.

FXpansion have expanded this scenes concept further with the new

song page, where you can arrange your entire drum track within Geist's deceptively modest interface. The GUI is based on the classic sequencer view, so on the left-hand side are the eight engine tracks, while along the top you'll find all of the song position/bar numbers.

In song mode, you draw in the patterns you want to trigger and jam over the top. This is another area in which the new Retro Record feature comes in handy - it means you can freely experiment until you have something you like and then use that pattern, even if you're not sure exactly how you did it - taking away the stress of having to perform on demand.

Alternatively

Linplug RMV

cm134 >> 7/10 >> €139

Powerful sampler/drum machine that's improved since we reviewed it

Xfer Nerve

cm153 >> 8/10 >> \$199

Dance-centric sample-based beatbox from a developer of Guru

Verdict

For Fun and easy to use

Top-notch FX

Great workflow

Awesome library

Almost limitless potential

Against Can be CPU-heavy if pushed

Maybe daunting for first time users

Geist is one of the best virtual drum machines around and will more than satisfy those who've been waiting patiently for a Guru sequel

9/10



Fine-tune your beats however you like with Geist's parameter bank

Overloud SpringAge £70

PC MAC



A reasonably priced, lovingly modelled, highly authentic spring reverb plug-in that won't frighten the life out of you if you accidentally kick it

> Reverberation and echoes are natural phenomena that occur when sound is reflected off surfaces. Rooms with flattering acoustics have always been great to record in, and many techniques exist for capturing this natural 'spaciness' in a way that translates to speakers and headphones.

Of course, not everyone has the luxury of being able to record in a great acoustic space. Spring reverbs came about to make Hammond organs sound as if they were in a cavernous church when they were actually in a living room, and they soon found their way into guitar amps, where they've been at home ever since. SpringAge sets out to give you authentic spring reverb in all its clattering boinginess - see *Spring theory* to learn how the real thing works.

Overloud have taken the approach of combining digital modelling and convolution for a balance of authenticity, tonal flexibility and DSP-efficiency. They've pulled it off, too. Instead of the Lexicon-esque ambience of their successful Breverb plug-in, you get the kind of reverb that's perfect for surf guitar, Monty Norman's *James Bond* theme, or even a bit of Portishead modern retro.

SpringAge offers three spring types: AQT, S201 and Angel. These take you from powerful bass response, to regular, to bright as you like, and a Time knob sets the global decay. Further controls include Boinginess, for controlling that kind of 'flapping' of the spring; Brightness, which is self-explanatory; and Tension, which almost controls the 'formant' of the sound, making the sound more 'uptight' when increased.

The input Drive control makes a big difference to the harmonic richness of the reverb - it gives a chunky, compressed thickness that can be further shaped with the two-band parametric EQ at the bottom of the GUI, which is nicely framed in black vintage vinyl. Separate controls for dry and wet signal level also have their own panning, and the preferences panel



thoughtfully offers an option to keep the current dry level when auditioning presets. Incidentally, SpringAge works in mono and stereo.

The vibe of spring reverb is undeniably retro, and SpringAge instantly creates that atmosphere. When working on our audio demo, we gave each instrument a slightly different character, and a very drab-sounding piece soon took on a rockin' 50s atmosphere.

The emulation is excellent: as good as - and certainly more flexible than - the spring reverbs in the AmpliTube 3 amp models, and definitely better than those in 2. It's very DSP-efficient, so you can stack 'em up if you like, but it's also ideal for putting on an auxiliary return and driving a mix of stuff into.

SpringAge doesn't have the rich, expensive sound of some of the Altverb spring impulse responses, but it does have a different sound that's appealing in its own way. Altverb also costs way more and doesn't have anything like the same retro sound and character as SpringAge, which is full on rock 'n' roll. **cm**

Web www.overloud.com
Contact Time+Space, 01837 55200

System requirements

PC P4/Athlon XP 2GHz, 1GB RAM,
Windows Vista/XP/7, VST/RTAS host

Mac Intel 1.5GHz/G4 866MHz
CPU, 512MB RAM, OS X 10.5,
AU/VST/RTAS host

Alternatively

Softube Spring Reverb

N/A >> N/A >> \$99

Excellent emulation with the option to vary the number of springs

Genuine Soundware GS201

N/A >> N/A >> €19

Emulates the Roland RE-201, a tape echo with spring reverb

Spring theory

Spring reverbs use the mechanical properties of springs to create a pulsating echoey reverb. The electrical input signal is transformed by the input transducer into a magnetic force. This applies a twisting motion to small cylindrical magnets that are physically attached to one end of a stainless steel spring.

Each twist creates a ripple that travels to the other end, where two things happen. Firstly, an output transducer converts the

magnetic action of the cylindrical magnets being twisted at the far end back into an electrical output signal (ie, audio). Secondly, the ripple bounces back along the spring, and then to and fro until the motion fades away to nothing.

Additional friction is applied with damper discs around the spring. The nature of these dampers - and of course the springs themselves - determine the tone, decay and delay time of the resulting reverberation.

Verdict

For Very realistic spring reverb sound
Drive control gives even more character
Full tonal control
DSP-efficient

Against Limited range of sounds
More warm options would be good

While spring reverb isn't for everyone, those seeking its distinctive sound won't regret springing for this plug-in

8/10

Universal Audio PC MAC EP-34 Tape Echo \$199



For genuine flavour and echoey weirdness, you can't beat tape delay – and this plug-in aims to recreate all of its gooey goodness

> Yet another Universal Audio emulation of classic analogue gear here, this time sourced from Maestro's later transistor-based EP-3 and EP-4 Echoplex tape echo units. Most of the original features are present, along with some new ones like tempo sync, delay time readout, panning of the delay signal, manual echo send and a 100% wet mode for aux/send channels.

UA have reimplemented some aspects of the original hardware: for example, you can switch between the Hi and Lo input options (microphone and instrument jack inputs on the original) for 'dirty' and 'clean' sounds. The original units also included a tension adjustment screw for the delay slider, and again this is represented as Lo and Hi options (loose and tight respectively).

The original used a mechanical slider/lever to adjust delay time, and there's a recreation of this on the EP-34's interface, ranging from 80-700ms. Also present are the knobs for repeat (feedback) and volume (wet/dry mix), along with treble and bass tone dials (+/- 10dB) for the delay signal. Finally, there's a recording volume control with accompanying input meter, which enables you to control the tape saturation that is part and parcel of the Echoplex sound.

Delays likely

Like the original, the delayed signal is mono, but for a stereo or mono-to-stereo instance, you can pan the delay. However, the dry part of the signal remains stereo. This is significant because even if you run the plug-in completely 'dry', the input stage still warms up the signal.

Some original units included a 'sound on sound' option, overdubbing audio as the tape loop came round (some two or three minutes for a typical tape cartridge). Unsurprisingly, this hasn't been included.

One interesting aspect of the plug-in is that it's effectively always functioning, so even when you're not playing your project, you can crank



up the Repeat control to hear the emulated noise and hum feeding back and building up.

It won't be long before you feel the urge to start tweaking the controls on the fly, and when you do, EP-34 Tape Echo behaves with amazing fluidity. Part of the original's charm is its option to change delay times on the fly by moving the playback head, creating effects like 'tape squeal' that aren't possible with a varispeed design such as that of Roland's Space Echo. This feature is implemented excellently, and shifting between delay times (including to tempo sync and back) doesn't curtail the delayed signal. This means EP-34 can emulate the performance nature of the original Echoplex, at least as far as your mouse or hardware controller will allow.

We were surprised by just how good EP-34 Tape Echo is, and the quality justifies its use of around a third of the DSP power on our UAD-2 Solo card – roughly twice the hit of the Space Echo. However, it's less of an all-rounder than the RE-201 (which also features spring reverb), so bear this in mind if looking at both. **cm**

Web www.uaudio.com

Contact Source Distribution, 020 8962 5080

System requirements

PC 256MB RAM, Windows XP/Vista (32-/64-bit), UAD-2 card, VST/RTAS host

Mac 256MB RAM, OS X 10.4, UAD-2 card, AU/VST/RTAS host

Alternatively

SoundToys Native Effects V4

cm152 >> 10/10 >> \$495

Contains the incredibly flexible EchoBoy plug-in (\$179 on its own)

Universal Audio

Roland RE-201 Space Echo

N/A >> N/A >> \$249

An obvious alternative for UAD users after a tape delay

Verdict

For Fluid delay performance

Good hybrid of original features

Great for real-time tweaking

Impressively realistic and suitably gritty

Useful manual echo send

Against Large DSP hit

Fewer features than Space Echo

No stereo delay option

Another fantastic UA recreation of a characterful old-school classic

9/10

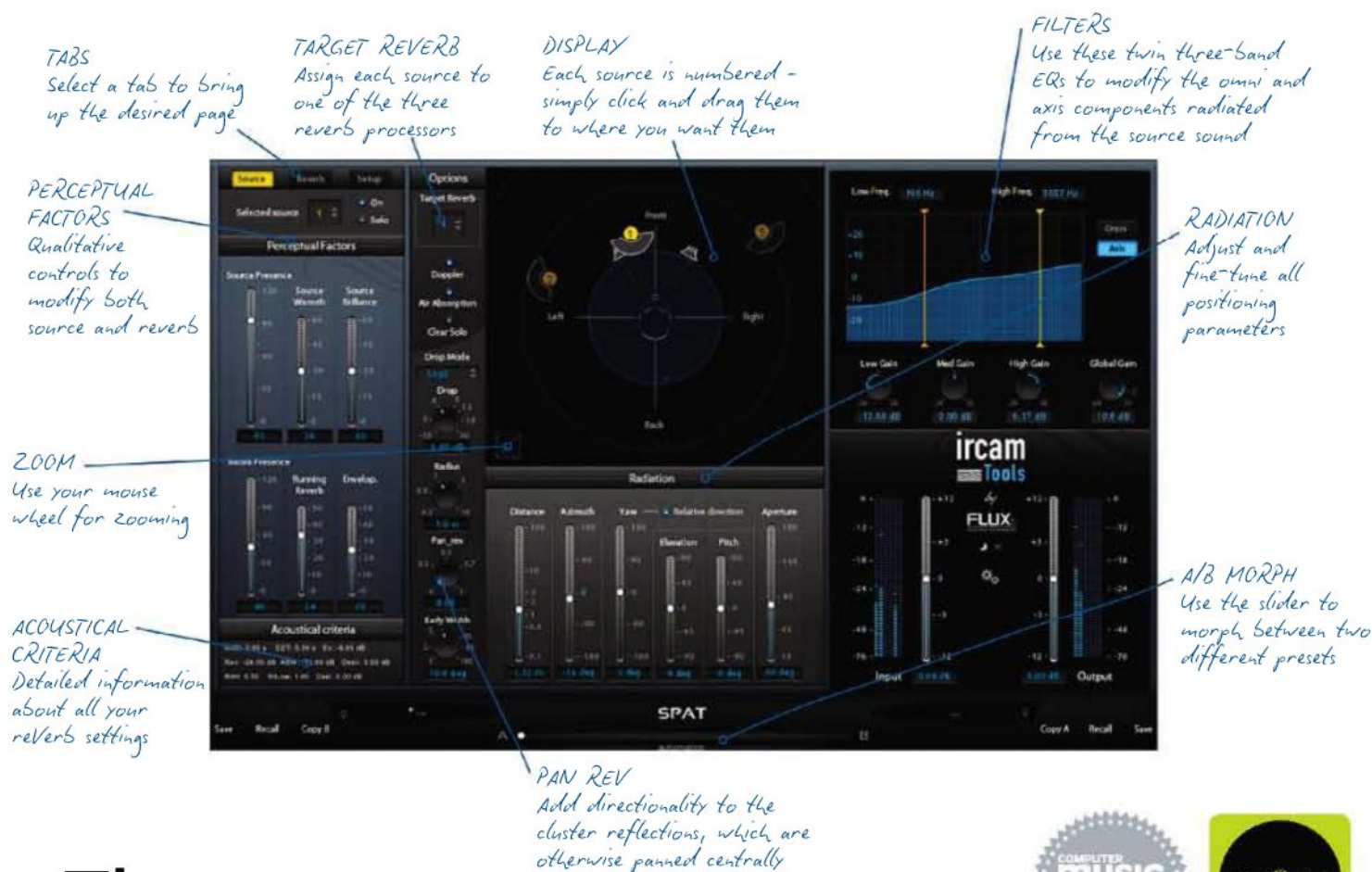
Head to head

Tape delays make use of record and playback heads placed at different points on a tape loop, incorporating this into a controllable design with various other features, including feedback and EQ.

The Echoplex includes a mechanical control that enables you to actually change the distance between the heads. This results in fully adjustable delays ranging from roughly 80-700ms. The tape loop itself is typically quite long (although this can be

changed), and on some versions you can disable the erase head to achieve 'sound on sound'-style effects.

The other two classic tape delays are the Roland Space Echo and WEM Copicat, and both use multiple fixed playback heads. However, the Space Echo is considerably more flexible than the WEM, not least because it combines adjustable tape speed with head-switching to provide fully adjustable delay times.



Flux IRCAM Spat

£1461

PC

MAC



System requirements

PC Windows XP, Vista, 7 (all in 32-bit and 64-bit format), VST/RTAS host (RTAS requires Pro Tools 7 or later)

Mac OS X 10.4 or later (32-bit), AU/VST/RTAS host (RTAS requires Pro Tools 7 or later)

> The IRCAM Tools range from Flux includes two reverbs: IRCAM Spat and IRCAM Verb. Both can kick out multichannel surround reverbs. However, we can essentially view Verb as a subset of Spat - which takes the effect, multiplies it by three and stuffs it into an eight-channel 3D surround processor with independent input channel positioning, subwoofer routing and surround encoding.

Spat enables you to position eight sound sources and control how they interact with one of the three reverbs. There's no dry/wet blend as with a conventional reverb processor (such as Verb), because the balance between direct and reverbed aspects is governed by where and how you place the sources in the room.

Source science

As you can imagine, there's quite a lot of science involved here, and to their credit, the design team have made a good job of presenting an interface that speaks the language of both musicians and sound engineers. Spat features two main windows - Source and Reverb - with a third, Setup, dealing with routing and outputs.

Source affords you control over the position and character of up to eight sources. Positional parameters include Distance, Angle, Yaw (orientation relative to listener), Elevation and horizontal Pitch. You can also adjust the Aperture of the source. This is essentially the directionality, ranging from narrow (like a torch beam) to omnidirectional (akin to a light bulb).

Sound characteristics are modified using the Perceptual Factors panel. These range from EQ options (Source Warmth and Brilliance) to balance options (Room and Source Presence) and qualitative controls for tweaking the reverb. Additional control comes in the form of three-band EQ for both the on-axis and omnidirectional parts of the source.

Further source settings include Doppler (for pitch changes if the source is moving), air absorption factor (based on distance) and signal attenuation settings (drop), controlling the way source distance affects signal level. Finally, you can also activate and solo the selected source and specify which reverb unit it will feed.

Switching tabs brings up the Reverb window, with the currently selected unit chosen and

"Spat's real power and stand-out feature is its source localisation"

activated in the top left. Once again, you get EQ-type parameters (Heaviness and Liveness), plus an overall Reverberance control. Beyond this, the room response panel offers considerable control over the first two stages of the reverb: Early and Cluster reflections. Features here include onset and end times for each stage, time distribution of reflections, and amplitude rise for the early reflections. As for the reverb tail, the start time can be adjusted, and for quick changes, the Room Size slider is a macro control for all decay parameters.

Further options include distance-affected air absorption (with its own cutoff frequency) and modal density (smoothness of the reverb). Finally, there's an infinite setting, whereby the reverb rings out indefinitely – great for creating really huge-sounding effects.

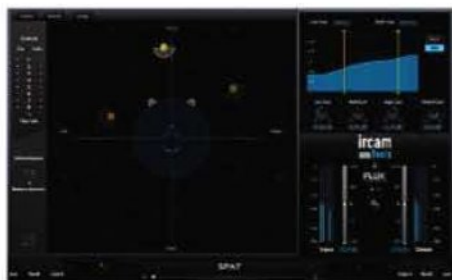
In practice

With conventional auxiliary reverbs, you'd also use level, pan and inserts on individual channels to position them 'in space'. Spat gives an all-in-one approach to this – once you've routed your sources in, it's your hub for placement. If you just want the sound of Spat's reverberations in your projects, you'd be best off loading up Verb, which is included with the Spat package. And while Spat is mainly designed to take multiple mono/stereo sources and generate a stereo/surround output based on source positioning, Verb would be a better choice for processing signals that are already in a surround format.

To our ears, the reverb engine is incredibly smooth and lush. The three-stage design (early/cluster reflections and reverb tail) combined with good visual feedback makes it simple to understand. We found it easy to design short, thickening room reflections; long, rich string reverbs; and the infinite setting is great for effects. If there's one criticism, it's simply that it has a very specific 'signature' sound.

Reverb nation

Spat's real power and stand-out feature is its source localisation. You can use this in various ways, and being able to position and control a sound in such a flexible way is very satisfying. Some of the parameters have more impact than others: particularly noticeable are the rotational (Yaw) setting – which enables you to point the



The source positioning panel can be expanded to almost twice its usual size, for more precise placement



Surround geeks will be in heaven with IRCAM Spat's well-equipped Setup tab

Ins and outs

IRCAM Spat's Setup tab includes useful signal flow features, such as individual phase reverse, input and output channel meters, linking of adjacent channels to create stereo pairs, and millisecond control over loudspeaker delay times for alignment purposes. Also, it's here that you set the desired output format, panning method and options for the subwoofer channel. You can also customise output routings via the routing matrix.

However, what you won't find is any control over input routing. This will be dictated by your DAW, where options can vary considerably. It took a bit of head-scratching, and a number of

buses, before we managed to achieve a flexible setup in Apple Logic Pro, allowing us to route individual sounds to individual Spat sources.

As mentioned, Spat can generate encoded formats, ranging from Surround LRS to Ambisonic. Those mixing for stereo will be pleased to hear that there's a binaural option with a number of HRTF head profile presets. These are created using test signals and a dummy (or real!) head, and, when used with headphones/earphones, give a realistic sensation of sounds coming from specific directions. You can even output in transaural format to produce a similar effect on loudspeakers.

source away from you – and Aperture. Doppler is interesting and, with automation, produces a good effect. Speaking of which, you have to use host automation if you want to move your sources around in the virtual space.

From a creative perspective, Spat works best when you can feed in multiple source signals (see *Ins and Outs* above), as you can build up not only a complex sound space, but also one with source-specific directional information. With three reverb units, it's like the concept of mixing with multiple reverb plug-ins. To be able to do all this and produce convincing surround output from one interface is excellent.

Spat will appeal most to those mixing for surround formats, but it's still useful for stereo applications where you want to influence source positioning and orientation. Verb is a well-conceived reverb also perfectly suited to stereo use. There's also plenty here for curious sound designers looking for new avenues. Overall, flexibility combined with the excellent sound of the reverb makes this another impressive – and expensive – plug-in in the IRCAM Tools range. **cm**

Web www.fluxhome.com
Contact DACS Audio, 0191 438 2500
Info IRCAM Verb, £730

Alternatively

Vienna MIR

N/A >> N/A >> €795

A standalone multichannel convolution mixing environment

Waves 360 Surround Tools

N/A >> N/A >> \$1182

Includes the R360 Surround Reverb and other surround tools

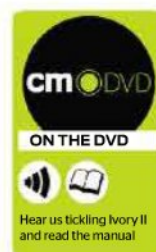
Verdict

For Lovely reverb effect
Virtual source positioning
Easy interface with friendly parameters
Surprisingly CPU-friendly
Good source display with zoom option
Surround encoding extras

Against Pro price tag
Multichannel routing is DAW-dependent

An impressive, novel space simulator that will be a big hit with surround jockeys and should win over a few 'stereophiles' too

Synthogy Ivory II Grand Pianos £235



Pianos are well suited to sampling but the quest for ultimate realism is ongoing, as evidenced by this superb sequel

> Synthogy's Ivory (cm81, 10/10) was a standout sample-based piano instrument when it arrived, but Ivory II takes things to a new level of realism.

Ivory II Grand Pianos is a 77GB collection comprising a Bösendorfer 290 Imperial, a Steinway D nine-footer and a Yamaha C7. If those aren't quite to your tastes, Synthogy's separately available Italian Grand and Uprights have both also reached Ivory II status.

As with all large sample-based instruments, installation is a bit of a snore; it took about two hours to feed all 11 DVDs into our machine. Once installed and authorised (via iLok), there were no hiccups. As well as the plug-in versions, there's a standalone version for Mac, and a version of Cantabile (a VST host) is supplied for PC users to use in place of a dedicated standalone executable.

The sound of Ivory II thumping down onto the cm test bench coincided nicely with the arrival of a Fatar VMK 188 Plus master keyboard. For our tests, we opened up the elegantly designed Ivory II in Pro Tools, which was hooked up to a Prism Sound ADA-8 interface and cranked through a pair of Focal Twin 6 monitors – a premium audio path that would easily show up any shortcomings. The Bösendorfer sounded vibrant, real, instantly playable and entirely at home in this top-notch environment, and after a lot of enjoyable playing, we turned our attention to the numerous presets and parameters.

The three grands have differing tonal qualities, smoothness and tightness of tuning, overtone variation, etc. The Böse came across as most natural, neutral and at home in its space. The Steinway seemed softer and mellower, and the Yamaha the most characterful – we'd call it 'cronky' even, especially in the bottom end.

Custom keyboard

Almost every aspect of the instrument can be manipulated from the Program page. There's Soundboard Resonance (choice of 11) and the



new Sympathetic Resonance (see *With deepest sympathy*) settings for starters. Most useful are the Key Noise, Timbre and Timbre Shift controls, which can radically transform the tone and 'knock' of the piano and would be very useful if, for example, you wanted to thin out the sound in order to place it in a busy mix. There's also the Synth Layer feature, which plays synth pad sounds alongside the pianos.

The Session page offers control over the likes of voice/memory allocation, tuning and velocity, while the Effects page offers well-implemented chorus, EQ and reverb/ambience treatments. In light of these comprehensive controls, it seems strange that there are no microphone or surround options.

In the end, it's all about playability and great sound, and Ivory has both in abundance. Its editability makes it truly flexible, and with the right master keyboard, you could lose hours just playing. That's the mark of a true instrument. **cm**

Web www.synthogy.com
Contact Time+Space, 01837 55200
Info Upgrade from Ivory I, £59;
Italian Grand, £119; Uprights, £199

System requirements

PC 1.8GHz Intel CPU, 2GB RAM, Windows XP/Vista/7, 7200RPM hard drive with 77GB free space, iLok, VST/RTAS host

Mac 2GHz PPC/Intel CPU, 2GB RAM, OS X 10.4.11, 7200RPM hard drive with 77GB free space, AU/VST/RTAS, iLok

Alternatively

Modartt Pianoteq v3 Standard cm144 >> 9/10 >> €249

Uses modelling technology instead of sampling. Highly playable and very editable

VSL Vienna Imperial cm144 >> 9/10 >> £495
Monster sampled grand, presenting a single Bösendorfer 290 Imperial pianer

Verdict

For Superb-sounding, playable pianos
Comprehensive modification options
Sympathetic resonance modelling
Half pedaling option

Against Long loading times
CPU- and drive-intensive
No virtual microphones

An excellent update to one of the best grand piano ROMplers money can buy, bringing it bang up to date

9/10

With deepest sympathy

A big part of what makes a piano sound like a piano is the fact that playing one key causes the strings of other (undamped) keys to resonate in sympathy. When you play middle C, the strings for the C below that softly ring out too. Not all harmonics of those strings will be heard, though – only those matching the original played note. This phenomenon is called sympathetic resonance, and Ivory's Sympathetic Resonance control attempts to model this elusive quality.

Although the control does enhance the realism of the sound, overdoing it can result in too much going on at once, creating an unpleasant 'beating' effect. Our advice is to use it subtly!

Other realism-preserving options include half pedaling, lid position, pedal noise, tuning tables and 18 velocity levels. Note that Ivory smoothly interpolates between levels, so you won't hear any 'jumps' at velocity boundaries.

izotope RX 2 \$1439/\$419



We awarded full marks to the original RX audio repair tool – and the sequel aims to clean up once again

> On the face of it, this latest edition of RX is much like its predecessor. We're going to focus on the new features here, so for details on the rest, check out the **cm DVD**, where you'll find the full manual.

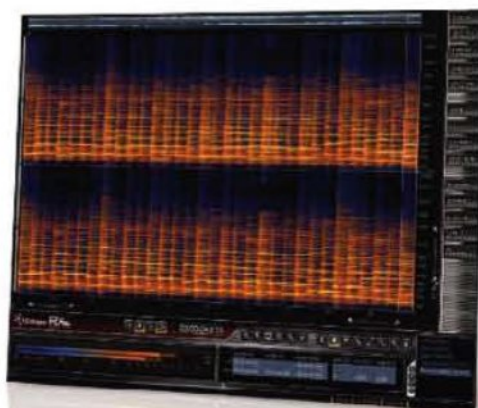
The primary objective is to repair damaged audio, and RX 2's strategy is multifaceted. The first aspect is an unconventional standalone audio editor built around a spectrogram view. This presents a three-dimensional display of the audio, where blobs of colour indicate frequency, time and amplitude. Spectral editing enables you to isolate and modify details of your digital audio that are out of reach with traditional waveform editors (though RX does have one of those, too).

Alongside the spectrogram/waveform view are a series of intelligent restoration modules. These are much more extensive than the (already impressive) lineup of the original RX.

The standard version of RX 2 retails at \$419, skimping only on the most in-depth of features, but here we're looking at the full-fat Advanced edition. The most notable additional modules for this version are Deconstruct and Plug-In, the latter of which enables you to process the audio with your favourite third-party effect plug-ins (DX/AU/VST). Furthermore, six of RX 2's modules are available in plug-in format, so you can use them within a compatible host.

Faith restored

It makes sense for a piece of software that heavily relies on visual editing to give us the kind of tools we're used to seeing in graphics apps like Photoshop, and the new selection tools in v2 are perhaps the most obvious examples of this. You now have a free-hand lasso tool, a scalable paint brush and even a magic wand, which analyses the point at which you click and guesses the appropriate region you want to select. Now it's possible to select the resonance of a snare or the sibilance of a vocal for isolated processing with a single click.



You can go into greater detail with your selection by holding down the Shift key, which enables you to add to your selection. You could, for example, draw a rectangle next to a circle. You can pick up your selection and move it, too, even after zooming in for a close-up. Refining a selection is easy – holding Alt/Option puts the tools into deselection mode, so you can, say, create a 'hole' in a selection.

These tools improve the ease of fixing clipped or clicking audio and removing background noises, unwanted incidental noises or hum. As a general rule, the closer you can zone in on the problem area, the better you can deal with it, producing seamless, natural-sounding results.

The new Deconstruct module (exclusive to the Advanced version) intelligently splits the audio into what it perceives as tonal and noisy qualities, and lets you mix them as desired. The results are most fascinating. You can't help but exploit the creative uses for this package, which go way past the obvious practical roles that it fulfils so excellently. **cm**

Web www.izotope.com
Contact izotope@izotope.com

System requirements

PC Windows XP/Vista/7, DX/VST/RTAS host for plug-in use

Mac OS X 10.5 or later, AU/VST/RTAS host for plug-in use

Alternatively

Sonnox Restore
cm152 >> 10/10 >> £1434

Suite of three targeted plug-ins, giving superb results

Adobe Audition 3
cm126 >> 8/10 >> £327

Full-blown MIDI and audio editor with awesome spectral editing

Verdict

For Astonishingly good results
Rescue damaged audio...
...or enhance decent audio
Easier than ever to use
Real-time and offline algorithms
Improved spectral editing features

Against Can be resource-hungry
Certain aspects take a while to grasp

iZotope keep up the pace with this great update to a first-rate audio-restoration tool

10/10

Easily converted

iZotope's MBIT+ technology is included in RX 2 Advanced to preserve the fidelity of audio that's been converted from a higher bit depth – say 32-bit – to a lower bit depth, like the consumer standard 16-bit. They've also included their 64-bit SRC technology for similarly clean conversion from one sample rate to another. It uses steep, linear phase filtering and, like the MBIT+ module, is both tailored to suit music and highly configurable. To our ears, both sound

flawless and are definitely suitable for the most demanding tasks.

Perhaps most intriguing for producers is the included Radius algorithm for timestretching and pitchshifting. Imagine being able to isolate a single drum hit in a recorded loop and stretch it 200% with minimal artifacts – maybe even cleaning it up with RX's restoration modules – before pasting it back into the mix. That's just one example of what you can do with RX 2.



Kuassa **PC** **MAC**

Amplifikation One \$50



From freeware frontrunner to commercial competitor, Kuassa get off to a solid start with this custom-designed amp sim package

System requirements

PC P4/Athlon XP, 512MB RAM, Windows XP/Vista/7, VST host

Mac PPC G4 minimum, 512MB RAM, OS X 10.4 or later, VST/AU host

> Guitar-slinging freeware junkies will no doubt be aware of Aradaz' line of free plug-ins, with their guitar amp simulations having picked up particular praise. Now the same developers have gone commercial as Kuassa Inc, with their flagship amp Amplifikation One aimed at amateurs and pros alike. With a price tag of just \$50, the price is decidedly un-pro, making it one of the most affordable amp sims around.

Further setting Amplifikation One apart from many of its competitors is the fact that it's not based on emulations of specific amps. Whereas, say, Digidesign's Eleven proudly claims accurate recreations of gear from Marshall, Fender, Mesa Boogie and the like, Amplifikation One is more akin to Magix Vandal, offering custom designs that aim to reproduce the most desirable aspects of schematic designs, tubes and electronics.

There are eight amplifiers, five cabinet models, five distortion modules and five microphones. There's also a four-channel impulse response loader that can be used in place of the regular cab sim, and although there are no effects (chorus, delay and so on), there's a configurable noise gate with threshold, attack and decay, a

limiter and dedicated input and output controls. 4x oversampling improves sound quality (though at the cost of more CPU usage), and it's worth noting that the software supports sample rates up to 96kHz.

Model behaviour

Diving into Amplifikation One's presets, it's clear that there are some impressive tones on offer. There's a touch too much drive on most, though, and with no input level meter on hand, it's impossible to know what kind of signal level the plug-in is expecting for optimum results. Oh, and there aren't any clean presets at all.

The noise gate works well, as does the output limiter, while the five distortion modules can provide impressive tonal modification. However, it's frustrating that input/output gain levels are saved with many of these presets, making it hard to compare tones without having to reset gain structures for each. It would have been preferable to have the input/output gain independent of the presets, as Peavey's ReValver does.

When it comes to clean tones, today's software amp sims tend to have things well

"Get to know the Kuassa Custom amp model and terrific results can be effortlessly achieved"

covered, and Amplifikation One is no exception. However, as soon as we get into slightly overdriven blues tones – à la Fender Tweed – matters become more interesting. Amplifikation One's Modern Blues Crunch preset makes a solid attempt, while the Custom Crunch preset has impressive bite, guts and tone. When you back off the gain, a credible Angus Young-style rhythm sound emerges.

Both of those presets use the Kuassa Custom amp model, which has clean, crunch and lead channels, and is billed as the software's flagship amp. This is without doubt the most useful of the amp models due to its 19 different tonestack (EQ) types (arranged in order of increasing mids and bottom end) and four power-amp output types. Get to know it and terrific results can be effortlessly achieved.

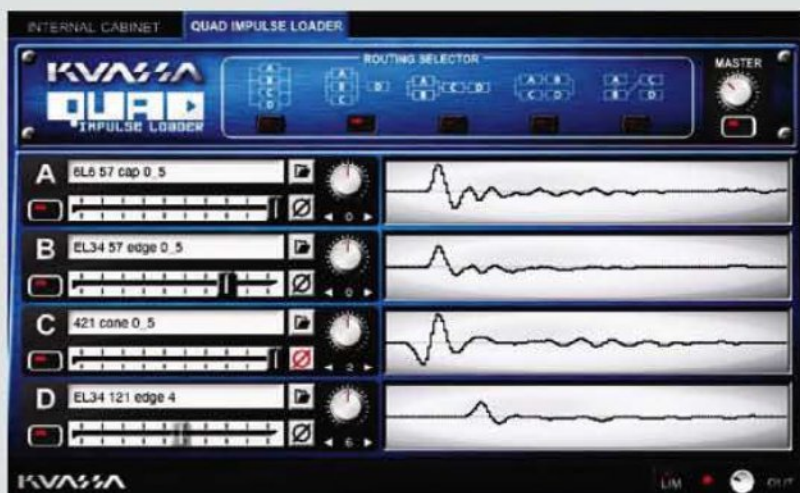
Unfortunately, the tonestack and power-amp types aren't available for the other seven amp models. Given that the Custom can deliver pristine, piano-like cleans right the way through to World War III levels of piledriving distortion, we can't help but question whether we would ever actually use the other amps.

In the real world

We had the opportunity to put Amplifikation One through its paces on preliminary mixes for a couple of real-life projects. First up was an Oasis-style indie band. We recorded the original guitar tracks using a Mesa Boogie Dual Rectifier on one side and a Peavey 5150 on the other, miked up with a Sennheiser MD421 and a Shure SM57 respectively. All guitars were recorded direct, too, so we could run the dry signals through Amplifikation One. The results were



The Scarlet high-gain amp delivers tons of drive and distortion. But then so does the Kuassa Custom amp



Mix and match up to four impulse responses with the flexible Quad Impulse Loader

Hailing a cab

Amplifikation One's cabinet and microphone modelling are definitely two of the software's main strengths. There's a striking variety of textures available from the vintage, standard and modern 4x12, as well as the two 1x12s, combined with the choice of the ubiquitous Shure SM57, the Sennheiser MD421, a condenser and two different ribbon mics.

Not only that, but you have the option of two completely separate cabinet/mic configurations to mix between, each of which can then be customised even further by moving the mic placement away from – as well as around – the speaker cone, with an on-

or off-axis mic position on each. And there's phase inversion, natch.

The way the frequency response changes when moving the mic around isn't quite like we're used to from a real cab/mic setup, but the sound itself is very good, and overall, this is a fairly minor criticism of what is otherwise a superb aspect of this product.

If you'd rather use your own cab/mic impulse responses, then you're in luck because the in-built cab sim can be swapped for the Quad Impulse Loader. This lets you blend up to four impulses and has an offset knob for adjusting the point at which the impulse starts. There are four routing modes, too.

great, and it could be argued that its ability to manipulate tones in the mix makes the modelled tones work better than the real thing.

The second project demanded high-gain contemporary metal tones, and Amplifikation One scored relatively well. However, when we tried to dial in the aggressive high end, the software sounded slightly abrasive and struggled with the downtuned low end, not quite achieving the clarity and definition of the amp/mic.

Despite our few criticisms, Amplifikation One is extremely good value for money, and its versatility should allow most players to dial in a good representation of the tone they're seeking. However, we feel that it hasn't quite captured some qualities, including power-amp response, cabinet resonance, speaker cone break-up, etc; and thus the all-important feel and response to picking intensity isn't up there with AmpliTube or ReValver. Then again, it weighs in at a fraction of the cost of those heavyweights, and it's also Kuassa's first commercial product. For those looking to make a tentative financial step into the world of amp simulation, Kuassa Amplifikation One could be just the ticket. **cm**

Web www.kuassa.com
Contact info@kuassa.com

Alternatively

Magix Vandal
cm152 >> 8/10 >> £155.00

Impressively real amp tones with a playing experience to match

Studio Devil VGA2
cm160 >> 10/10 >> \$79

Splendidly valve-centric tones at an irresistible price

Verdict

For Custom amp is highly versatile
Covers all tonal bases
Superb cabinet and mic modelling
Simple, easy-to-use interface
Very attractively priced

Against Presets could be better
No input level monitor
Not as 'organic' as some amp sims
No standalone or RTAS version

Kuassa kick off their career in style with a tonally capable, value-packed amp sim

7/10

cm mini reviews

A rapid-fire round-up of sample libraries, ROMplers and more

Akai MPK mini £70

Web www.akaipro.com

Contact Akai/Numark/Alesis Europe, 01252 896000

Format PC/Mac, USB

At first glance, the USB-powered MPK mini looks like an amalgamation of Akai's LPK 25 mini-keyboard and their pint-sized LPD8 pad/knob controller. On second glance, it becomes apparent that that's essentially what it is!

The eight assignable velocity-sensitive pads feel as playable as you'd expect from the company behind the MPC range - two banks of assignments can be stored for additional flexibility. For a small device, the eight knobs are pretty well-spaced, too. Up to four banks of settings can be stored for quick recall, and control assignments can be made in a software editor.

All very nice, then, and the MPK mini is pretty good value for money, too. The question you have to ask yourself is whether you're happy to play its 25 mini-keys. They don't feel poor by any means (though there is a certain amount of sponginess), but some will still find them fiddly, particularly those with large fingers or who are used to a full-size 'board. That's the price you pay for having such a feature-packed and compact controller, though, and if you want a keyboard that does a lot and can be slung in a small rucksack, this is it.

8/10



Alesis Q25 £60

Web www.alesis.com

Contact Akai/Numark/Alesis Europe, 01252 896000

Format PC/Mac, USB

At a time when many MIDI keyboard manufacturers are keen to emphasise how many controls their hardware has and how easily they automatically map to your software's parameters, the Q25 feels like a refreshing change. In some ways, it's a throwback to the old days: there are just two assignable controls (mod wheel and a data entry slider), a 5-pin MIDI output as well as a USB one (which can also provide power), and fairly conservative styling.

This isn't to say that the Q25 is an anachronism, though - far from it. The 25 full-size keys are lighter and more playable than those you'll find on some of this keyboard's rivals, and it's a pleasure to have proper pitch and mod wheels. It's a fairly svelte piece of hardware, too.

It might not do a great deal - and multiple key presses are required to change settings - but at this price and with this level of performance, the Q25 fills a niche for those seeking a compact keyboard that they just want to play.

7/10



Prodipe 25C £80

Web www.zenaudiolimited.co.uk

Contact Zen Audio, 01924 476533

Format PC/Mac, USB

Let's get the bad news out of the way first: the USB-powered Prodipe 25C looks dated (it appears to have been inspired by the very first generation of M-Audio's Oxygen 8), its case feels slightly brittle and the 25 keys don't play so well. They almost feel 'stepped', with a discernable change halfway down the action.

What this controller does have in its favour, though, is a wide-ranging feature set. The pitch/mod wheels, two data buttons, data entry slider and four notched knobs are all assignable; in fact, the knobs can be switched between two banks of assignments and transmit on different MIDI channels. There's also a Dual mode that lets you send MIDI data from the keyboard and some of the controllers on two channels simultaneously. Round the back, you've got a 5-pin MIDI Out, a pedal input and the option to power from the mains.

This is worth looking at if you're on a tight budget, but there are smarter, better feeling 25-note controllers out there.

6/10



Korg iMS-20 £9.49

Web www.korg.co.uk
Contact Korg UK, 01908 857100
Format iPad app (iOS 3.2 or later)

For their second App Store entry, Korg have not only virtualized their legendary MS-20 analogue synth, they've coupled it with a recreation of the accompanying SQ-10 16-step sequencer, and then taken things another step further with a six-part drum machine, seven-channel mixer and built-in effects processing.

The MS-20 monosynth is the star of the show. You get a pair of oscillators, three and five-stage envelope generators, LFO, VCA and, of course, those gloriously squelchy MS-20 filters. Noise and ring mod are included, and the LFO can be synchronised to the sequencer.

Speaking of modulation, iMS-20 includes a proper patchbay complete with virtual patch cables. Not that you need them, because just like a real MS-20, iMS-20 works as a fixed-signal path instrument when no cables are jacked in.

Further control is provided via a virtual keyboard and a pair of Kaoss pads, one of which

can be made to trigger notes in a selected scale, while the other is a fun way to tweak synth parameters.

The 16-step sequencer sits atop the synth and can be dragged down with your finger. There are three rows of 16 steps and a row of trigger outputs. The sequencer can control volume, pitch and pan, or pump out a generic control signal.

The drum machine section provides six-part rhythm sequencing with each sound created from a dedicated MS-20. You can control notes, volume and pan via the sequencer knobs. It's fast, friendly and flexible.

Sequencer patterns can be arranged into songs and dumped via iTunes, and there's even built-in Soundcloud support.

The iMS-20 is a superb-sounding app, and



one that invites hours of tweaking. The patchbay might be a bit intimidating to raw recruits, but the seasoned vet will appreciate the familiar playing field. Note that the price rockets up to £19.99 from February onwards, so grab it at the introductory price while you can!

9/10

Reactable Systems SL Reactable Mobile £5.99

Web www.reactable.com
Contact via website
Format iPhone/iPod Touch/iPad/

Reactable is an attention-grabbing, interactive instrument that has wowed concert-goers during its appearances onstage with Björk. With its luminescent tabletop and building-block modules, it combines play and performance in a presumably inspiring fashion. We say "presumably" because the thing costs a pretty penny at just under £10,000. You can therefore imagine our glee at seeing this mobile version pop up in the App Store for a few quid.

Surprisingly, Reactable Mobile carries much of the functionality of the fully physical version, albeit with a few twists. The main limitation is that you can use only a limited number of each 'block' type in the mobile incarnation (eg, two oscillators, one filter, etc).

Reactable is inspired in part by modular synthesisers, with oscillators, filters, modulators, effects, sequencers and more represented as blocks that are placed (or dragged) onto the 'table'. Modules can then be patched together and tweaked by spinning them around, or dragging your finger(s) around the perimeter of

a given block. Each block provides a couple of parameters that may be manipulated in this way. For instance, an outer circle surrounding one half of the oscillator alters the played note, while an inner ring displays the octave. The other half of the block provides an amplitude control.

You can access further block parameters by double-tapping. For example, the filter block provides filter modes along with cutoff and resonance. The latter two are adjusted via a 2D graphical display. It's all very interactive and extremely intuitive.

Along with the usual oscillators, you get some sampler blocks. There's a dedicated loop block, along with an instrument/drum sample player. There are a number of samples included, and you can bring your own in through iTunes or via the built-in web server (which you can also use to retrieve recorded performances in WAV format).

Reactable is great fun. We wish we could access more blocks - we'd particularly like more sequencers and filters. Still, the price is right, and



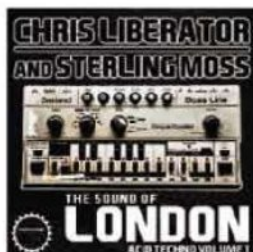
there's no shortage of inspiration on tap. And let's be honest: for most of us, this is as close as we're likely to get to the real thing.

9/10

Soundware round-up

Industrial Strength DOWNLOAD **The Sound of London Acid Techno** £23

Web www.loopmasters.com
Contact info@loopmasters.com
Format Wav, Acid, REX2, ReFill, Apple Loops,
Kontakt, Battery, GarageBand



This pack was created by acid dons Chris Liberator and Sterling Moss, and if you're at all familiar with the sound of acid techno, you know exactly what to expect: thunderous drum machine beats, staccato synth bass rhythms and distorted Roland TB-303 leads. The library isn't enormous (1000 loops and hits), but the content is spot on and there's a great selection of single-hit drums, basses, synths, FX and vocals that should be enough to provide the basis for dozens of pumping techno tracks. If you're into the harder side of techno, this is a must.

9/10

D16 Group DOWNLOAD **Plasticlicks** €69

Web www.d16.pl
Contact support@d16.pl
Format WAV, Akai AKP, SF2



Polish plug-in powerhouse D16 Group venture into the sample library market with this unusual collection of 1500 electronic drum sounds. Rather than concentrating on massive full-on hits à la Vengeance-Sound, D16's approach is more minimal, serving up edgy, unusual elements that are perfect for percussive duties or for layering up with meat-and-potatoes drum sounds. Each sound has samples for four velocity layers, covering all your favourite analogue-style drum types, from kicks to cowbells. Plasticlicks isn't a one-stop shop, and it won't be everyone's cup of tea, but if you're into anally sculpting drum sounds or programming weird beats, it's a terrific tool with a distinctive vibe.

9/10

Original Music DOWNLOAD **Dance Drum Samples** £15

Web www.original-music.co.uk
Contact admin@original-music.co.uk
Format Format WAV, AIFF, REX2, MIDI



While this title from newcomers Original Music is relatively cheap, it's not going to give established sample publishers any sleepless nights. It consists of 342 one-shots and 104 loops. The hits are generally badly recorded, and many are of real drums, which don't sound very 'dancey' and are often plagued by background noise. There are often many indistinguishable variations on the same sound (some are seemingly identical). The loops are poorly produced, with numerous useless variations on a theme. More positively, there are some decent ride cymbals, but overall, this is best avoided.

3/10

Zero-G **Alien Skies: Cinematic Ambiences 2** £90

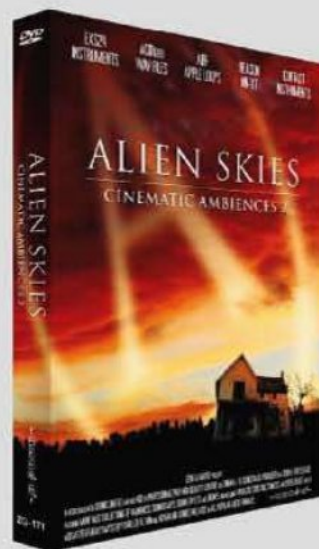
Contact Time+Space, 01837 55200
Web www.timespace.com
Format Acid WAV, Apple
Loops, EXS24, Kontakt,
Reason NN-XT

Alien Skies follows on from where its prequel, Dark Skies, left off. It's a two-DVD package including 36 huge-sounding construction kits full of hits, sweeps, ambiences and FX. Expect deep and atmospheric textures that will remind you of those unforgettable film moments. Each kit has a cue file so you can hear how all the parts work together in context.

You also get descriptively named folders containing ambiences, hits/stings, sweeps/swells - eg, the ambiences are filed under Grotesque, Intense, Sacred, etc.

The sounds demonstrate mind-blowing sound design skills, are insanely inspiring and are presented in 24-bit. While the content is perfect for game and film scores, don't discount its use in any musical project requiring added depth and dramatic tension. Highly recommended.

10/10

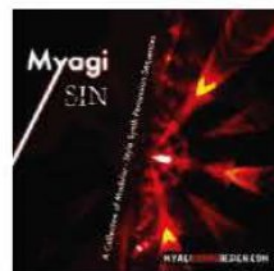


Myagi Sound Design DOWNLOAD **Sin** \$35

Web www.myagisounddesign.com
Contact myagi@myagimusic.com
Format WAV

Sin consists of just 50 samples, which isn't a lot for the \$35 entry fee. If they were, say, the best 50 drum hits, loops or synth noises of all time, you might be satisfied, but what you get is a handful of very mediocre bloopy, bleepy analogue synth-style percussive loops. They're described as "heavy duty", but only a few of them live up to this. The loops do build up as they play through, which is a nice touch and means there's more variety than there first appears, but to be frank, it sounds as if it was knocked out in an evening. Considering you can get much larger and more comprehensive libraries for around the same price, we suggest you look elsewhere for your fix of wobbly, envelope-following noises.

4/10



Producer Loops DOWNLOAD
Supalife Progressive House £25+

Web www.producerloops.com
 Contact via website
 Format Acid, WAV, Apple Loops, MIDI, Reason ReFill, REX

There are five construction kits here that leave nothing to the imagination. You get dry loops, MIDI loops, single hits, and even "unlooped riffs" with their tails intact. The musical parts suit the genre, the grooves are rocking, and there are some exceptionally modern and exciting sounds. We're not convinced that all of the parts in each kit work together so well and there's a slight lack of bottom-end in some sounds, including some kicks. Overall, though, this is a good pack, and the FX are especially slick.

8/10



Goldbaby DOWNLOAD
iAm-MS20 \$49

Web www.goldbaby.co.nz
 Contact info@goldbaby.co.nz
 Format WAV, Kontakt, EXS24

The Korg MS-20 analogue synth has been reborn digitally as a plug-in, an iPad app and even a Nintendo DS title, but this selection of patches from vintage kit lover Goldbaby is all about the authentic tones of the real thing. Plenty of other classic kit was involved in the recording, and iAm-MS20 oozes old-fashioned synth vibes. There are 140 patches including monosynth, polysynth, single cycle waveforms, drum and FX sounds, as well as some lush raw waveforms. None of the sounds are startling or revolutionary, but for classy vintage synth sounds, iAm-MS20 is a great buy.

9/10



Puremagnetik DOWNLOAD
Lady Vox \$6

Web www.puremagnetik.com
 Contact info@puremagnetik.com
 Format Ableton Live Pack, Kontakt, Apple Loops

The latest silly-priced Puremagnetik pack is a set of ten instrument patches made up, as you might expect, from female voices. Six of them are simple (but handy) 'ooh'- and 'ahh'-type patches. They span one to two octaves each and are in stereo (although the loop points aren't perfect). Then there's a single patch that has roughly an octave each of 'shoo', 'be', 'doo' and 'wah' sounds. The remaining three patches sound like convincing synth sounds, though they're also based on vocal samples at source and thus have qualities about them that conventional synths don't have. This pack is a lot of fun!

8/10

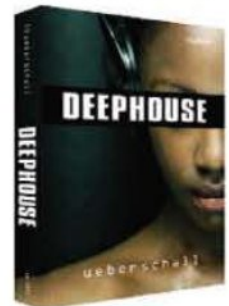


Ueberschall
Deep House €99

Web www.bestservicede.com
 Contact mail@bestservice.de
 Format Elastik Instrument Soundbank

These 24 construction kits range from 119 to 127bpm, but they don't demonstrate a great deal of authenticity. For example, none of the kick drums hit the mark and some of the kits don't sound like the deep house genre at all. On the positive side, there are some very interesting sounds included and the musical content is reasonable. Unfortunately, this title uses the Elastik player, which is pretty inconvenient for the production of serious house music. This isn't awful, but with the standard of house music libraries being so high, you can do a lot better for the asking price.

6/10



Prime Loops DOWNLOAD
Aquasonica £20

Web www.primeloops.com
 Contact info@primeloops.com
 Format WAV, Apple Loops, Acid, Akai MPC, FL Studio, Garageband, MC-909, MV8000, MV8800

Aquasonica is a library of loops, patches and one-shots made with the dub techno producer in mind. It seems to draw upon a wide range of influences, even though all of the sounds are synthetic. Spread across 232 loops, 301 drum one-shots, 35 bass patches and 26 synth chord patches are some of the wildest, most eccentric samples we've heard. You'll draw plenty of inspiration from the stylish and unique sounds here. Everything is nice and bright, with good stereo width where relevant. The tempo ranges from 108bpm to 120bpm with plenty of energy packed into the grooves.

9/10

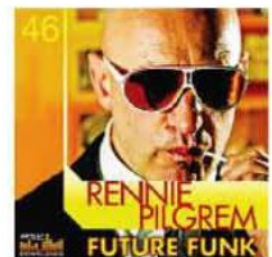


Loopmasters DOWNLOAD
Rennie Pilgrem Future Funk £25

Web www.loopmasters.com
 Contact info@loopmasters.com
 Format WAV, Acid, REX2, Reason ReFill, Ableton Live Pack, Apple Loops, HALion, Kontakt, EXS, SFZ, Stylus RMX, NN-Xt, GarageBand, MIDI

One of the main ambassadors of the nu-skoool breaks genre, Rennie shows off his musical pedigree with this title. There are 238 samples, ranging from 110bpm to 132bpm. Be warned, though, that some are quite similar to each other. There's also an inconsistency with regards to quality. The best samples are outstanding, with beautiful textures and a rich sound, whereas the worst sound cheap and suffer from clipping and similar symptoms of poor recording/mixing.

7/10



cm/recommends

The best new gear from the last three issues...



URS Classic Console Strip Pro 2 \$480

Rating 9/10
Reviewed **cm**158
Contact sales@ursplugins.com
Web www.ursplugins.com

What Is It? One of the most comprehensive analogue-modelling channel strips around, CCS Pro 2 doesn't replicate just one hardware unit - it does scores of 'em. There are 30 input/preamp stage models, 60 compressor/limiter types and five EQ band options. Features include dry/wet compression mix, a fast attack option, adjustable routing. Oh, and it sounds terrific!

Verdict "URS's flagship processor hangs on to its 'classic' status with this solid update."



Steinberg WaveLab 7 £497

Rating 9/10
Reviewed **cm**159
Contact Steinberg, +49 404 223 6115
Web www.steinberg.net

What is it? A long established audio editor, finally available for Mac as well as PC. New for this version are a bundle of Sonnox restoration processors, over 30 VST3 effects nabbed from Cubase and Nuendo, and a slicker interface with four dedicated workspaces. And with a 15-year pedigree behind it, it goes without saying that there's a ton of excellent pre-existing features.

Verdict "WaveLab is probably Steinberg's most cohesive and well-rounded product, capable of pretty much everything you could want from a modern audio editor"



Cakewalk Sonar X1 £379

Rating 9/10
Reviewed **cm**160
Contact Roland UK, 01792 702701
Web www.cakewalk.com

What is it? A PC DAW with a lineage stretching back more than two decades, now refreshed with a totally new interface that dispels previous criticisms of it being fiddly and obtuse to operate. Anyone who was previously turned off by Sonar's interface owes it to themselves to give it another go. Offering further enticement is the new channel strip, ProChannel, offering superb EQ, compression and saturation.

Verdict "More than a mere reskinning, X1's GUI truly revitalises Sonar's workflow, while ProChannel gives it a huge sonic boost"

What we've been using this month



Ronan Macdonald
Editor

FXpansion's Geist adds an impressive array of new enticements to their already-brilliant Guru groovebox. It's beautiful designed, powerful, sonically superb and stuffed with ace samples.



Lee du-Caine
Deputy Editor

Synapse Audio's Dune kicks sand in the faces of punier soft synths. It's perfect for everything from hardcore vibes to spice-laden sci-fi pads. Watch out for our full review in **cm**162!



Tim Cant
Multimedia Editor

Togu Audio Line's TAL-Filter II lets me create complex volume ducking curves with ease. Which is great, because relying on sidechain compression was driving me absolutely quackers!



Caity Foster
Production Editor

When I saw the Reactable instrument, my jaw dropped - when I heard it cost €9,700, it dropped again. I'm loving the Reactable iOS app - at just £5.99, it really suits my pocket **cm**



PRIME LOOPS

WE'RE IN THE MIX

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- The **cm** Guide to Sonar X1
- Super Synth Me
- Extreme Sidechaining
- Producer Masterclass: Charles Webster
- Apple GarageBand '11, LinPlug MorphoX, Rob Papen RP-Delay and more reviewed



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- Dubstep vs DnB, featuring videos from five top boundary-hopping producers on the DVD
- Make Killer Riffs
- Producer Masterclass: Dom Kane
- Steinberg Wavelab 7, Ableton Amp, ProjectSAM Symphobia 2 and more reviewed



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- Orchestral Extremes tutorial
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- Finger-drumming for beginners
- Gating and analogue warmth
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- Flux IRCAM Tools Trax, Voxengo HarmoniEQ, Audio Damage Axon and more reviewed



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>Your questions answered

Q&A

Driven to distraction by an awesome sound that you just can't reproduce? Pondering what your next piece of kit should be? Or simply stuck with a problem you can't seem to solve? Direct your questions to cmhelp@futurenet.co.uk

Bass-ically speaking

Question Recently, I've decided to venture into house production, but I've come up against one major stumbling block: how do you make a realistic funky bass sound - such as the one featured in Armand Van Helden's remix of *ADD SUV* by Uffie, and his Duck Sauce tracks - without recording a real bass? I'm a Logic user and have found nothing in my plug-ins that comes even close.



Rob Lawman

Answer While there are many instruments and sample libraries that aim to give you realistic bass guitar sounds, it can be tricky



Duck Sauce use real bass recordings based on old samples to anchor their funky, quacked-out tunes

you don't have to pitchshift it. You should chop it up and rearrange it to fit your track. This method has the advantage of not requiring filtering, plus you won't be using part of someone else's song.

If you decide to go down the programming route, you're most likely to get the best results by taking a bass guitar sound from a ROMpler - or even a synth bass patch - and running it through a bass guitar amp emulation. This will impart a great deal of character to the sound. You might even get away with using a simple synth bass noise without processing and just throwing in the occasional bass guitar slap sample to give you that disco vibe. Take a listen to the track at www.bit.ly/hQIBOE for a great example of this technique in action.

Take it low

Question I want to get the kind of low-pitched voice effect heard in lots of US hip-hop tracks. I've tried getting the effect in Live, but it doesn't sound right, and Reason doesn't have any way to do it without slowing down the audio. Do I need Pro Tools in order to produce this effect? Because if it's going to cost me hundreds of pounds, I'll just live without it!

Josh Wyatt

Answer Don't worry - you don't need to invest enormous amounts of money to get this effect in your tracks. In fact, it's eminently possible with free or cheap software. Both Audacity and Reaper - which uses the excellent élastique pitchshifting and timestretching algorithms - are capable of generating this effect with ease.

In Audacity it's as simple as selecting the audio you want to process, choosing the **Change Pitch** function from the **Effect** menu and entering the number of semitones you want to pitch down by. Reaper has slightly more involved pitchshifting options, -

Forget trying to doctor an electric guitar sound - there are plenty of sitar instruments and sample packs out there



COMPUTER music QUESTION OF THE MONTH



The writer of our *Question of the Month* will receive their choice of two Artist Series sample libraries courtesy of Loopmasters. www.loopmasters.com

getting the best results from them, especially if you're not familiar with real bass playing. You're probably not going to like this but your best bet is to use real bass recordings. Don't panic, though - you don't have to record anything yourself.

The secret to the Duck Sauce tracks is that for the most part they're based around great, funky samples. Just check out *Gotta Go Home* by Boney M and Final Edition's *I Can Do It (Anyway You Want)* if you want to hear some of Duck Sauce's hits in their original forms. We imagine that the bass parts on the Duck Sauce versions of these tracks were rerecorded by session players, but sometimes you can get a workable bass part from a sample by simply filtering or EQing the top end out.

If you're just after a bass sound rather than an entire musical loop, we recommend finding a bass guitar loop in a sample library. This should ideally be in the same key as your track, so

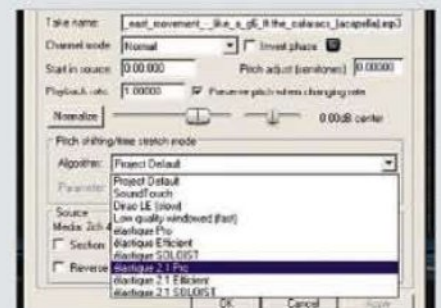


> Step by step

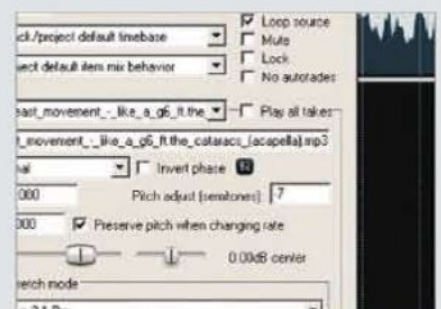
Pitchshifting audio in Reaper



- 1 > Start a new project in Reaper and create a new track by selecting **Track>Insert new track**. Drag the audio file of the vocal that you want to change the pitch of onto the new audio track.



- 2 > Right-click the audio file and select **Item Properties**. In this dialog you can change a large number of parameters. Reaper's timestretching and pitchshifting algorithm is *élastique* 2.1 Pro by default. If you've changed the project's default algorithm, set the algorithm to this manually in the **Algorithm** field.



- 3 > Set the **Pitch adjust (semitones)** value to whatever you desire - 7 semitones works well for the hip-hop pitch drop effect. Now click the **K** button to exit this dialog. No processing happens right away - the *élastique* algorithm will shift the pitch in real time. Finally, simply export the section of audio you want to use with Reaper's **File>Render** menu option.



Replacing the demo of Sylenth1 (or any other plug-in, for that matter) with the full version in energyXT is a relatively straightforward process, as XT Software's Jørgen Aase explains

see the *Pitchshifting audio in Reaper* walkthrough, right, for a quick and dirty guide to achieving this tasty effect.

Sounds from the East

Question I'm trying to recreate an authentic sitar sound, either with an electric guitar or soft synth. What do you recommend?

Mark Pearson

Answer You're not going to have a great deal of joy getting an authentic sitar sound out of an electric guitar or synth, but there are several instruments and sample libraries dedicated to recreating the sound of said instrument. These include the free Syntar (www.vst4free.com) and NUSofting's commercial offering Knagalis, a demo of which is at nusofting.liqihsynth.com. For a more complete set of sitar sounds, check out Native Instruments' Discover Series: North India sample library (€69, 9/10 in *cm*137). It includes a variety of instruments that can be played in North Indian modal, microtonal or chromatic fashion, as well as percussion sounds.

Sweet Sylenth

Question I use energyXT to make music, and recently I upgraded my demo version of Lennar Digital Sylenth1 to the full one.

It works perfectly, but how can I replace the demo version in my existing project? I don't want to have to redo all my MIDI tracks!

Steve

Answer We went straight to XT Software's Jørgen Aase to find out the best way to deal with this problem.

"One way is to load the Sylenth1 full version into the project, route the MIDI tracks to the new synth and remove the demo version," explains Jørgen. "First, right-click the MIDI track that uses the Sylenth1 demo. On the **Output** menu, choose **Add new**, and select the full version of Sylenth1. Now the track is routed to both the demo and full versions. Next, right-click the same track, select **Output** and uncheck the Sylenth1 demo. Finally, go to the mixer, right-click the title of the Sylenth1 demo in the channel strip, and select **Delete**. If you need to restore the preset as well, you can export and reimport the patch. This can be done in the Sylenth1 editor by clicking the dropdown button to the left of the preset name in the toolbar. Select **Save as...** to save the preset as a .fxp file. This can then be loaded into the full version of the synth."

Squeezing out power

Question I'm using a PC to make various types of dance music, but when my tracks reach a certain level of complexity, Ableton

"You're not going to have a great deal of luck getting an authentic sitar sound of an electric guitar synth"

> Step by step

Routing Kong's Aux outputs in Reason 5



- 1 > For this, we're going to need four different Reason devices: a Kong, a 14:2 mixer, and two effects set up as sends. Delay and reverb are the classic send effects, so add RV7000 and DDL-1 to the rack along with Kong and the mixer. The effects only need to output the processed signal, so set their **Wet/dry** knobs to 100% wet.



- 2 > Flip round to the back view. Route Kong's **Main Audio Outs** to the first channel of the mixer, and the **Aux Send Outs** to the mixer's **Chaining Aux** inputs. Route the mixer's **Aux** outs to the effects' inputs, with the effects' outputs routed to the mixer's **Aux** inputs.



- 3 > Confused yet? Don't worry - you can find an example patch in the **Tutorial Files\Q&A** folder on the **cm** DVD. What's happening is this: Kong's Aux outputs are connected to the mixer, which has its own auxiliary routing to the effects, the output of which is routed back into the mixer. Turn up the **Aux 1** and **Aux 2** knobs in the mixer and you'll hear the effect in action when you trigger the sound.



The MacBook Air may be beautiful, but its older brother, the MacBook, has more firepower, storage and screen real estate - so it's the better option for musicians itching to get creative on the move

Live's response becomes sluggish, especially when copying large chunks of audio and MIDI around. My machine isn't exactly the most high-powered, but it does have an Intel Core 2 Duo processor and I didn't buy it that long ago. Is there some kind of problem with my computer that's making it act like this? The PC was cheap but I only bought it a couple of years ago, so I'd like to avoid upgrading right away if possible.

Leo Morris

Answer Ableton Live can indeed become sluggish when working with complex projects on older processors, but you can improve its performance somewhat by doing something very simple: collapsing your tracks. When it doesn't have to display all those waveforms, Live can be a little more snappy during copy and pasting tasks, and you should find that it makes arranging projects more bearable.

If you haven't tried doing so yet, we also recommend that you have a go at upping your audio buffer size. This will make Live respond slightly more slowly when it comes to MIDI input and playback, so it's not ideal for recording, but if you're struggling with excessive CPU usage, it will help you to squeeze a few more instruments and plug-ins out of your trusty CPU. To change your audio interface's buffer size open the **Options»Preferences** dialog, select the **Audio** tab and click the **Hardware setup** button. For more info on your audio interface's settings, consult its documentation.

Another way to conserve CPU juice is to use Live's Freeze function, so give that a go if you haven't already. You should also consider using automation to bypass instruments and effects

that aren't currently playing or processing audio. For example, if you have a synth that only plays during the verse, you could disable it during the chorus. An easy way to turn off a whole channel's worth of instruments/effects is to group the whole lot together in a rack and bypass it.

Kong confusion

Question I recently bought Reason 5, and I love Kong, but I can't work out how its Aux effects work. Are they the same as the Bus FX? How do I access them?

Evan Connor

Answer Kong's Aux FX knobs are for routing audio out of the instrument to external effects, the output of which is then routed back to Kong. For a quick guide to routing these effects for yourself, see *Routing Kong's aux outputs in Reason 5*, left.

Crossed wires

Question I make trance using Ableton Live, and I've just started using ZebraCM, which is an amazing synth. The problem is, I can't work out how to use its arpeggiator. How do I access it?

Sean Webster

Answer The bad news is that ZebraCM doesn't have a built-in arpeggiator. However, the great news is that Live has its own MIDI arpeggiator effect, which you can use with all

"The bad news is that ZebraCM doesn't have an arpeggiator. The great news is that Live has its own MIDI arpeggiator"

your synths and instruments, not just ZebraCM. See *Using Live's arpeggiator effect*, below, for your guide to this powerful device.

Hot Air

Question I'm going to buy a new laptop for making music, and I'm considering splashing out on the new MacBook Air. I understand that the original version wasn't an ideal music-making tool, but the new ones look more like it. Would it be realistic to use this for making music? I don't want to have to compromise on performance and processor power, but I love the form factor. Should I get the Air or a normal MacBook? I can only just stretch to the base models, so upgrades are out of the question.

Sean Morris

Answer The MacBook Air is a tempting buy, for sure, and the 11" model in particular packs a lot of power into a small space. Both the 11" MacBook Air and 13.3" MacBook retail for £849

for the lowest-spec versions, so let's take a look at how they compare.

Memory-wise, both have 2GB of RAM, but the MacBook has a much larger 250GB hard drive compared to the Air's 64GB of flash storage, which would be eaten up very quickly if you use lots of sample-based content or audio recordings. You can, of course, use external storage, and both machines have two USB 2.0 ports. Neither of the current models have FireWire connectors, though, and both use the same modest Nvidia GeForce 320M graphics chip.

Another big difference between the two is their battery life. Apple claim you'll get ten hours of battery life out of the MacBook, but only five from the MacBook Air. There's no optical drive on the svelte Air, either.

For music-making, arguably the most crucial difference between the two machines is the CPU. They both feature Intel Core 2 Duo CPUs, but the MacBook's runs at 2.4GHz compared to the Air's less spectacular 1.4GHz. Although the Air's processor is slower, it's still in a different league compared to the Intel Atom processors

found in netbooks, and is capable of running projects of reasonable complexity. Push the CPU too much on either machine and you're going to have to start bouncing or freezing tracks, but that point will come a fair bit sooner with the Air.

Ultimately, we would suggest that the MacBook Air is ideal if you're not intending to work for long periods on the move or on hugely complex projects. However, if you want a computer for more general use or you would like to be able to use more plug-ins when you're producing, then the MacBook is a more serious music-making machine. Since you say that you're unwilling to forgo performance, we have to recommend that you plump for the stock MacBook rather than its sexier younger sibling.

Leap of faith

Question For a few years, I've been making industrial/EDM music using guitar, drum machines, synths and what is now a rather outdated MiniDisc-based four-track. I have

> Step by step Using Ableton Live's Arpeggiator



1 > Start by creating a new Live project, and drag ZebraCM from the list of plug-ins onto the MIDI track. Create a simple MIDI part that plays a few different sustained notes, as we have here. Next, open the **Live Devices** menu and open the **MIDI Effects** folder.



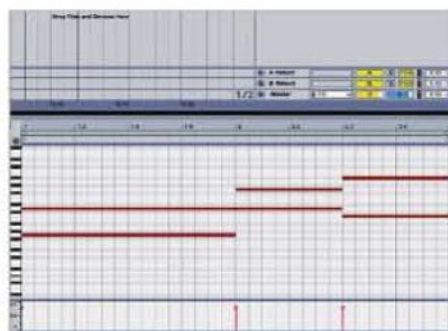
2 > Drag the Arpeggiator onto the MIDI track before ZebraCM. On playback, you'll hear that the Arpeggiator has turned the sustained notes into shorter repeating notes. You can change the length of these notes with the **Gate** control, and their tempo with the **Rate** parameter. Set the **Rate** to **1/16**.



3 > By default, the **Steps** parameter in the **Transpose** panel is set to **0**. This setting controls how many octaves the Arpeggiator spans. So, for example, setting this to **3** means that the Arpeggiator will play over four octaves - the original, plus three extra. Set it to **3**.



4 > The **Transpose** panel is only set to an octave by default. If you wish, you can change this using the **Distance** parameter. Set this to **7** rather than the default **12** and the note will jump a perfect fifth rather than a full octave each time.



5 > You can control the order in which the steps are played using the **Style** menu in the main panel. Many of these modes will only make a difference if you input multiple notes from the MIDI track at once, so change the MIDI part to chords, as we have here.



6 > The **Style** menu includes a **Chord Trigger** mode, which repeats the incoming notes as a block chord. You can create your own chords from a single-note input by putting the Chords MIDI effect before the Arpeggiator effect. Use the **Shift** knobs to set the intervals of each extra note over the original note.

used music software in the past but have always preferred using the four-track machine because I find it quicker and more intuitive. However, these days it doesn't really give me the level of control over the production that I require.

I already have a decent Intel i5 Windows 7 machine and have looked into several audio interfaces, but I was wondering if you could suggest some current software that would be suitable for making overdubbed multitrack recordings with.

Leo Hudson

Answer

There are plenty of appropriate Windows DAW packages to suit your needs, including the big names such as Cubase, Sonar and Live, plus less ubiquitous software such as Reaper and Podium.

Each of these applications has its own advantages and disadvantages: Cubase 5

(www.steinberg.net) has great MIDI editing features; Sonar X1 (www.cakewalk.com) has an awesome set of processing tools built into the mixer; Live (www.ableton.com) is incredible when it comes to on-the-fly timestretching and manipulation; Reaper (www.reaper.fm) has comprehensive routing capabilities; and Podium (www.zynewave.com) has very sophisticated automation tools.

You can make great music with all of these packages, and the best way to decide which is right for you is to give them all a try. Currently, there are demo or trial versions available for all of them apart from Sonar X1, though it's likely a demo will appear soon as the software is still very new. The Cubase 5 demo requires a hardware eLicensor dongle to use, but you can pick one up from the Steinberg site for a not-too-outrageous £16.

When you check out the demos, make sure you investigate the various pricing options for



All of the major DAWs, including Cubase, Sonar X1, Ableton Live and Reaper will do your productions proud - so download the demos and try them all!

each package, as Cubase, Sonar and Live all have more affordable versions available with reduced feature sets. These are worth checking out as the full-blown app could well be more than you really need. Reaper has two different licences, essentially depending on what you do with the music that you make with it.

Question

How can I make a Congorock-style carnival beat?

Sam Carr



1 > The carnival-esque rhythms used by Congorock, Foamo et al are really only a slight variation on the common or garden four-by-four house pattern, but with a couple of rhythmic variations that give them a quite different feel. Create two audio tracks in your DAW and drag **Kick.wav** and **Snare.wav** (in the **Tutorial Files\Q&A** folder on the DVD) onto them.

2 > You'll notice that **Kick.wav** is a pretty lengthy kick drum, verging on a sustained, hip-hop-style 808 sound but with a beefier attack phase. We don't need this on every beat, so use a fade to shorten the kick to about half a beat.

3 > Copy out the kick to create a four-to-the-floor pattern lasting two bars. Lengthen the first kick of the first bar, so that it nearly reaches the second kick - this gives the start of the two-bar loop a big, bassy push that contrasts nicely with the tighter beats that follow.



4 > The snare pattern is pretty simple. Rather than just having a clap on every other beat, carnival riddims usually employ a snare on the 4th and 7th 16th-notes. Repeat this pattern for the whole two-bar section, like so.

5 > At the end of the loop there's room for a little variation, so put another snare on the last 16th-note. This gives us the basic groove that you can base the rest of the drums and other elements of the track around.

6 > Generally, Congorock beats don't have loads and loads of elements, giving the drums plenty of room to breathe. However, the hits that are there are nice and fat, so you may want to layer up the snares with exotic percussion sounds. Here we've added **Hat.wav** over the main snare to fill out the high end of the mix.

Question How do I make a lead sound like the one in Chuckie's *Let the Bass Kick*? Anthony Martin



- 1 > The whiny, almost cat-like lead noise from Chuckie's *Let the Bass Kick* – also heard on the Chuckie vs LMFAO *Let the Bass Kick in Miami* mashup – can be recreated quite well using Rob Pape's Albino 3 soft synth. Load the synth into your DAW and select the **Diverse Sounds>z_initial** preset patch.



- 2 > The key to the whiny tone of this sound is frequency modulation. Set Oscillators one and two to **Analog**. Set both **Waveforms** to the square shape, with the **Symmetry** knob turned up to maximum, and change the output of the first oscillator from **F1** (filter 1) to **FM** (frequency modulation).



- 3 > We only want the first oscillator to modulate the second very slightly, so turn its **Cent** setting up to **14**. Turn the second oscillator's **Volume** up to full, and turn up the **Spread** control very slightly (as we have here) to give the sound a slight touch of unison detune.



- 4 > Set Filter 1's **Mode** to **24** and **Type** to **BP**. We want the band-pass filter to sweep through the sound, so turn up the **Envelope** to the level we have here. Also, copy our **Keytrack**, **Resonance** and **Cutoff** settings.



- 5 > To boost the level of the sound and make it a little rougher, set the **Saturation** mode to **4** and turn up the level. Next, select the Filter Envelope (click **F1**) and set the **Decay** to **0.549** and **Sustain** to **0.000** for a quick filter sweep.



- 6 > Next, select the Amplitude Envelope (**A**), and copy the values we've used here. Note that the shape of the **Decay** curve has been raised slightly from the default value. To do this, simply drag up on the curve shape under the **Decay** knob.



- 7 > The portamento is an important component of this sound. Set the **Number of Voices** to **Mono**, and the **Glide** mode to **On**. We found the best way to replicate the riff used in *Let the Bass Kick* was to automate the **Time** as above, ranging from **44** to **67**. This gives some notes a lazier feel than others.



- 8 > In Albino's effect section, activate two of the FX and set them to **Flange** and **Reverb**. These effects are quite subtle – for the reverb we're using a small **Room** size of **1.7** and a **Wet** level of **0.081**, while the flanger has a **Wet** level of **32**. Refer to the **Albino 3 Bass Kick.fxp** patch on the DVD for exact values.



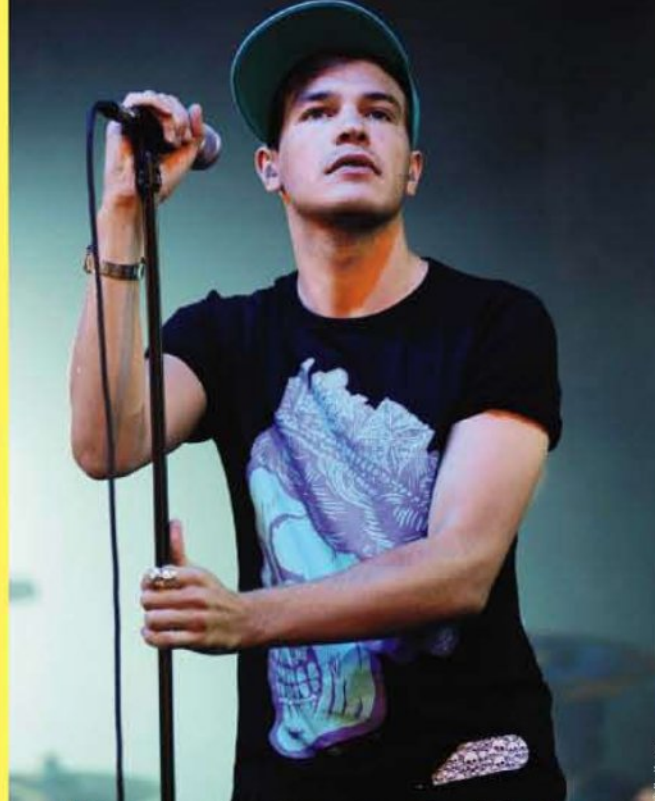
- 9 > For the final touch, use an EQ to roll off the low end and the **8kHz** region, and a clipper plug-in to boost the volume level and slice off any volume peaks at the end of the signal chain. **cm**

UK GARAGE

The turn of the millennium saw the country jumping to the high-energy sounds of UK garage. Its sound still lives on in other electronic genres, and we explain how to produce it



Our project files, synth patches and audio are in the **Tutorial Files** folder



> The great injustice for underground dance music genres is that they're usually remembered by their most commercial - and often least interesting - releases. Ask the average Joe in the street what UK garage sounds like and you'll likely hear them render the catchy choruses of So Solid Crew's *21 Seconds* or DJ Pied Piper and Masters of Ceremony's *Do You Really Like It?* As entertaining as UK garage's forays into pop were, there's a lot more to the genre than just that sort of thing.

UK garage evolved from the UK house scene in the mid-90s, combining the shuffling beats of US house and garage with the heavy, bass-driven sounds of jungle and drum 'n' bass. Initially known as speed garage, because it was faster than garage music from the US, it hit the mainstream in 1997 with tracks like Double 99's *Ripgroove* and 187 Lockdown's *Gunman*. These tracks took the reggae-sampling aesthetic and warped basslines of jungle, but were routed in the skippy 4x4 beats of house. UK garage would also mimic DnB's evolution, incorporating the 2-step drum pattern (à la Alex Reece's *Pulp*

"As entertaining as UK garage's forays into pop were, there's a lot more to the genre"

Fiction) on records like the Kelly G remix of Tina Moore's *Never Let You Go*. By 1999, 2-step tracks were breaking out of the underground and entering the charts, headed up by Artful Dodger's *Re-Rewind* (*The Crowd Say Bo Selecta*) and Shanks and Bigfoot's *Sweet Like Chocolate*.

Who's lovin' it?

That proved to be the peak of UK garage's popularity, and eventually it fell from favour with the nation's ravers. The genre didn't disappear, though, and aside from the UK garage scene itself, it's had an influence on many subsequent genres, including grime, dubstep, bassline house and so-called future garage. Contemporary artists as diverse as Joy Orbison, Burial, Twocker, Hostage and even The XX have been inspired by UK garage, taking it into strange new territories.

Here, then, is our guide to the UK garage sound, including tutorials on making beats and basslines, and some essential listening. Is it, is it wicked? Yes it, yes it is.

> Step by step Building a 4x4 garage beat



- 1 > Naturally, the most important element of four-four garage is the kick drum. Create a new audio track in your DAW and drag **Kick23.wav** from the **Tutorial Files\CM Focus** folder on the **cm DVD** onto it. We need it to really thump at the low end, so pitch it down **-5** semitones.



- 2 > Fade out the end of the sample and copy it over to every beat for two bars. The kick is a little quiet, so use a limiter to boost it by **3.5dB**, and insert an EQ to bring up the **77Hz** and **782Hz** areas a bit. Set your project tempo to **135bpm**.



- 3 > Create another audio track and place **Clap06.wav** on it. This sample has quite a reverb tail on it, so shorten it to a 16th-note in length, and line up copies of it with every other kick drum. Use EQ to bring up the top end by boosting at **10kHz** and **14.5kHz**.



- 4 > Next we need an open hi-hat. **OpenHat08.wav** will do the job - put it on a new audio track and shorten it to a 16th-note. Use a fade to prevent the sound from stopping dead, and place a copy of it on every offbeat, as shown. High-pass the channel at **900Hz** and boost at **8.32kHz**.



- 5 > Let's get some shuffle happening. You could use your DAW's groove or swing settings to inject some shuffle into your beats, but it's sometimes less hassle to manually put the drums where you want them instead. Add a new audio track and put **Higher Hats-57.wav** on the 12th 64th-note, as shown.

POWER TIP

>Set faders to stun

When programming garage beats, you'll often use lots of shorter drum hits, perhaps moving the end points of samples forward to make the sound snappier. This can cause unwanted clicks as the end of the sample jumps immediately from a positive or negative value to zero. To avoid this, apply a fade to the end of the sample. Don't make this so long that it changes the feel of the sound - just long enough to fade out the click. If you find that a given sample loses too much of its weight or character when shortened, considering finding a different sound instead.



- 6 > Just once is enough for that hi-hat, but let's add some more percussion to keep things interesting. Add another audio track and put **Clap04.wav** onto it. Shorten it to a 32nd-note, and have it play on the last 32nd-note of the first bar and the fourth 32nd-note of the second bar.



- 7 > You can make the beat less choppy sounding by adding a closed hi-hat on every eighth-note. **Higher hat-26.wav** is suitable for this task, but it should be turned down quite low - say **-18dB** - to stop it interfering too much with the rest of the beat.



- 8 > To get the beat sounding as loud as possible, group the audio tracks to a bus and insert a limiter, turning up the **Gain** up so that it's nice and loud, but not so high that it adversely affects the transients or audibly distorts too much.

Essential garage-influenced listening

Hadouken! *Mic Check*

An unlikely garage tribute from the archetypal new rave act, *Mic Check* takes obvious inspiration from Double 99's *Ripgroove*, including the same looped vocal sample from *Never Let You Go* by Tina Moore, 4x4 beats, and a variation on the bassline played with a grungy synth bass and lead sound. It just goes to show how influential UK garage was on the generation that grew up with it.

www.bit.ly/hm3zUM



Danny Byrd *We Can Have It All*

This is far from the first time Byrd has shown off his love of garage: veteran DnB heads may remember the blatant sampling of St Germain's *Alabama Blues* (Todd Edwards remix) on 2000's *Changes*. His latest track is a 140bpm affair featuring an MJ Cole 2-step drum pattern, garage-style vocal samples and a drop into an old-school hardcore breakdown.

www.bit.ly/9IPxaS



Florence and the Machine *You've Got the Love (The XX remix)*

Few could have imagined that this remix of mainstream crooner Florence by indie rockers The XX would be a modern 2-step classic, but just take a listen: shuffly beats, enormous subsonic basslines and some vocal choppage make this a slice of new-school garage that even the dance-phobic can enjoy.

www.bit.ly/bkTMX



Todd Edwards *I Might Be (MJ Cole remix)*

Two of 90s garage's biggest names reunite for a slice of modern garage genius. MJ Cole's awesome remix of Todd's high-energy 4x4-fest takes it in a different direction rhythmically, incorporating dubsteppy beats and a funky, twisting bassline. The result is an incredible track that shows just how beautiful garage can be.

www.bit.ly/ftAH1P



> Step by step Creating a rumbling garage bass



1 > Making the junglistic garage bass noise used by 187 Lockdown et al is fairly easily done with almost any virtual analogue synth, as long as it's got pulse width modulation. We're going to use Native Instruments Massive because it can sound extraordinarily fat. Load Massive (get the demo at www.native-instruments.com) into your DAW and click **File>New Sound** on the instrument's interface.



2 > Set the first oscillator's waveshape to **Pulse-Saw PWM**. Turn the **Pulse-Saw Pos** knob all the way to the left to set the output to a pulse waveform, and put the **Pulse Width** knob at 12 o'clock. This will give you one very meaty square wave sound. Drag the modulation handle from 5 LFO onto the first slot below the **Pulse Width** knob.



3 > Click the **5 LFO** tab, and slide the **XFade Curve** all the way up to the top. This means we're just going to use the first waveshape, a sine wave. Set the **Rate** knob to about 1 o'clock. Turn up the modulation amount to the level we have here.



4 > This gives the bass a suitably dirty movement. Next we're going to cut out the high frequencies to leave just the low, rumbling bass. Set the first filter to **Low-pass 4** mode. Immediately you'll hear the sound lowered to a sub-bass. Turn the filter **Cutoff** level up to about 11 o'clock so that it's not quite so muffled.



5 > We want the filter cutoff to rise and fall depending on the note played, so that the higher notes don't sound duller relative to the lower ones. Drag the **KTr** modulation handle onto the first slot under the filter **Cutoff** knob. Turn it up just a small amount, like so.



6 > Getting these settings spot on is essential to making the patch sound right, so if you want to check you're on the right track, consult the **Massive Rumble.ksd** files in the **Tutorial Files\CM Focus** folder. Finally, set Massive's effects to **Classic Tube** (with the **Drive** turned down a bit) and **Chorus** to bring the sound to life.

> Step by step Making a 2-step beat



1 > The generic 2-step beat consists of a kick on the first and sixth eighth-notes and snares on the third and seventh. Start by setting your project tempo to **135bpm** and drag **Kick23.wav** from the **Tutorial Files\CM Focus** folder on the **cm DVD** onto an audio track.



2 > This is a very solid kick, but it's a little high for our needs. Transpose it down **3 semitones**, fade it out to make it just longer than a 16th-note, and copy out this two-bar pattern. The extra kick in the second bar gives us a nice variation.



3 > Generally, 2-step snares don't have to be as full as DnB or dubstep snares, but they do still need to go low and have a bit of character. Drag **Snare25.wav** onto a new audio track and double it up with **Super snare and Cool claps-35.wav**. Shorten the samples, as we have here, to get a good snappy snare sound.



4 > This composite snare is good, but it doesn't have the lows we need. Drag **Snare30.wav** onto an audio track. This has a decent amount of energy in the low end, but we don't need the highs, so use an EQ to low-pass it at **500Hz**. We now have a snare made of three samples. Put copies of it on every other beat, like so.



5 > Next we need a basic hi-hat sound. Put **Higher hats-16.wav** onto a new audio track and place it on every eighth-note. You can help the kick and snare pump through the mix more by turning the hats that play at the same time as them down by **1-2dB**.



6 > Let's add a little ghost snare hit. We'll use a different snare sample for this sound, because we don't want it to sound just like the main snare. Plus, it shouldn't be as full-sounding as the main snare, so we can get away with using just a single sample. Add a new audio track and put **Snare34.wav** on it.



7 > Shorten the snare to a 16th-note and fade it out halfway through. Now place it on the 7th and 8th 16th-notes of the second bar, as shown here. This creates a cool little double-time ghost snare shuffle that provides a counterpoint to the rest of the laid-back rhythm.



8 > We can perform a similar trick with the hi-hats to give them a bit more hype. Add a new audio track and drag **Higher hats-57.wav** onto it. Put it on the sixth eighth-note of each bar. This gives the beat a little skip after the first snare.



9 > That's our beat! To make it sound polished and proper, balance the various sounds (see the project file in the **Tutorial Files\CM Focus** folder for our version) and route all the audio tracks to a limiter to boost the overall volume level.

Four old-skool garage classics

TJR ft Xavier
Just Gets Better

Groovy beats, strings, cut-up and pitched vocal, plus a big, funky bassline – those are the ingredients that make this one of the most musically satisfying UK garage tracks. The arrangement is superb, effortlessly building to a rush-inducing crescendo, then suddenly stripping back to the fundamental elements while retaining that all-important energy.

www.bit.ly/oP1MX



Agent X
Turbulence

A straight-up 4x4 bassline banger, *Turbulence* boils the jump-up style of garage down to its very essence. It's amazingly economical: the drum and bass elements really are the stars here, and there's minimal interference from the tasteful sound FX and subtle musical elements that crop up later in the track.

www.bit.ly/i5rxLc



Azzido Da Bass,
Dooms Night
(Timo Maas remix)

Oddly, one of tear-out garage's biggest tracks is this collaboration between two European house producers. The most memorable part of *Dooms Night* has to be the distinctive breakdown: simple but effective, it uses LFO-modulated synth wobbles that increase in tempo, building to an immense drop with a speaker-shaking reverse bass.

www.bit.ly/dfWwsO



Horsepower Productions
Giving Up On Love

Horsepower Productions would later go on to become dubstep innovators, but this soulful cut from 2001 is pure 2-step pleasure. The beats are UK garage at their finest, a synth organ riff plays a catchy call-and-answer riff with the pitchbending bassline, and the plaintive vocal is top class.

www.bit.ly/6wONZE



> Step by step

Composing a reverse garage bass



1 > You can make the 'reverse' bass sound, as used on tracks like Double 99's *Ripgroove*, with pretty much any subtractive synth. We're using Rob Papen's Albino 3 because it features a superb-sounding filter and envelopes with adjustable curve – you can get the demo at www.robpapen.com. Load the synth up in your DAW and select **Diverse Sounds>z_initial preset**.

2 > Set the first oscillator to the square **Waveform**. It's a bit quiet isn't it? Turn the oscillator's **Volume** up to full, and do the same for the synth's **Master Vol** while you're at it. Don't worry about this being too loud – using just a single oscillator, we're not even close to clipping the synth's output.



3 > Set Filter 1's **Mode** to **12dB**, and turn the **Cutoff** all the way down to **40**. We want the envelope to open the filter cutoff every time we play a note. Set the **Envelope** level to **0.82**.

4 > Click the **F1** button to the left of the Env panel to bring up Filter 1's envelope. Set the **Attack** to **0.512**, **Decay** to **0.924**, **Sustain** to **0.000** and **Release** to **0.166**. Next, drag up on the attack stage's shape to make it more curved, as shown.



5 > Getting the curve just right is an important part of the sound, so check out **Albino 3 Reverse Bass.fx** on the **cm** DVD to see and hear our version. We want the filter cutoff to follow the note, so, in the Filter section, change the **Track** (key tracking) level to **0.50**.

6 > That's the sound we want, but it's a little fluffy at the moment. To tighten it up, click the **A** button to the left of the Env panel to bring up the amplitude envelope, and turn the **Release** down to **0.077**. To give the bass a bit more bite, turn Filter 1's **Resonance** up to **33.cm**

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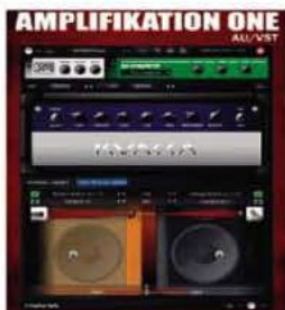
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POP MUSIC!

Today's commercial pop productions are **slick, inventive** and far more **complicated** than they sound. In our in-depth guide next month, we'll show you how to make tracks in this most **misunderstood** of genres

REVIEWS NI TRAKTOR KONTROL S4 / VENGEANCE-SOUND PHILTA XL / SYNAPSE AUDIO DUNE / TONE2 ELECTRAX / MADRONA LABS AALTO / WALDORF PPG WAVE 3.V / IZOTOPE NECTAR / UAD STUDER A800

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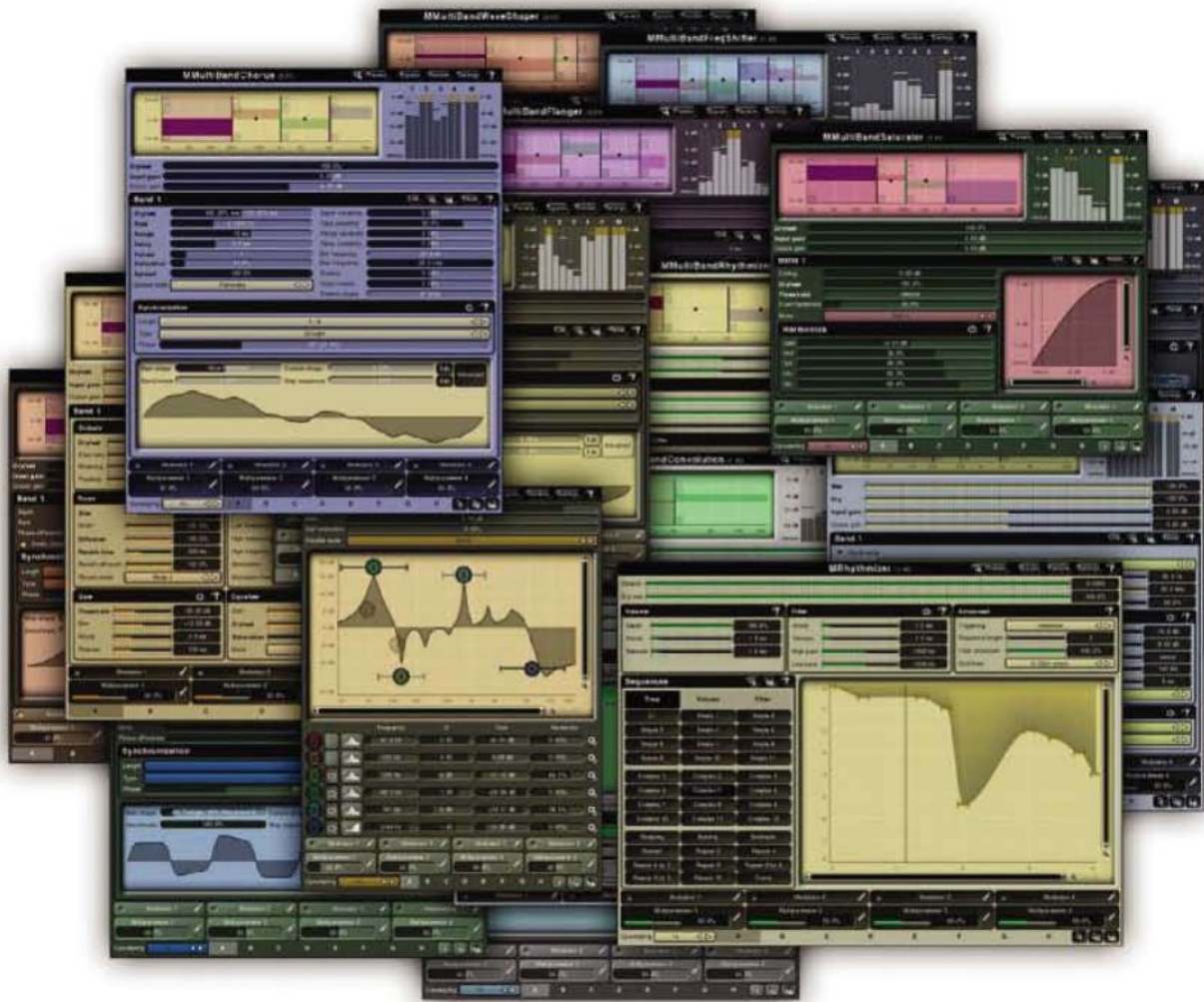
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