

**7.9GB DVD-ROM:** SOFTWARE, SAMPLES, VIDEO AND TUTORIALS

**cm** DVD

**7.9GB**

PC & MAC

# COMPUTER music

£5.99 / September 2009 / CM142

MAKE MUSIC NOW

**STEALING  
SOUND**

The music piracy  
debate from  
both sides

**2009**

# DRUM 'n' BASS

Our all-star line-up presents  
the ultimate DnB masterclass!

FEATURING

# SABRE CYANTIFIC SHIMON ALIX PEREZ XAMPLE & LOMAX

**cm** DVD

**7.9GB**  
DVD-ROM

PC  
MAC

**META-RECORDING  
IN ABLETON LIVE**

An amazing new system to  
help you make better beats!

**IN THE BALANCE**

Mixing and arranging  
tips and techniques

SUBMERSIBLE MUSIC

## DrumCore 3 CM

Create pro-quality drum tracks on your PC  
or Mac with this amazing plug-in, including  
1.8GB of samples and MIDI performances!

24-BIT ROYALTY-FREE SOUNDS

## 2025 SAMPLES

Massive library of  
drum 'n' bass synths,  
basses and processed hits

PRODUCER MASTERCLASS VIDEO  
**NATHAN FAKE**

EXCLUSIVE  
**FREE  
SOFTWARE**

**cm**  
STUDIO

ALL THE SOFTWARE  
YOU NEED TO START  
MAKING MUSIC NOW!

SEQUENCING

SYNTHESIS

SAMPLING

EFFECTS



**REVIEWED!**

**WALDORF LARGO**

**MAKEMUSIC FINALE 2010**

**AUDIO DAMAGE EOS**

**WAVES H-DELAY & H-COMP**

**FABFILTER TIMELESS 2**

**IK STEALTH PEDAL**

**AND MUCH MORE**

**Future**  
MEDIA WITH PASSION

9 771463 687022

SEPTEMBER 2009 #142 £5.99

**musicradar.com**



## ISSUE 142 SEPTEMBER 2009

Future Publishing Ltd.  
30 Monmouth Street, Bath, BA1 2BW  
Tel: 01225 442244 Fax: 01225 732275  
Email: [cm@futurenet.co.uk](mailto:cm@futurenet.co.uk)  
Web: [www.musicradar.com/cm](http://www.musicradar.com/cm)

## EDITORIAL

Editor: Ronan Macdonald, [ronan.macdonald@futurenet.com](mailto:ronan.macdonald@futurenet.com)  
Deputy Editor: Lee du Caine, [lee.du-caine@futurenet.com](mailto:lee.du-caine@futurenet.com)  
Multimedia Editor: Tim Cant, [timcant@futurenet.com](mailto:timcant@futurenet.com)  
Senior Art Editor: Rodney Dive, [rodneydive@futurenet.com](mailto:rodneydive@futurenet.com)  
Art Editor: Stuart Ratcliffe, [stuart.ratcliffe@futurenet.com](mailto:stuart.ratcliffe@futurenet.com)  
Production Assistant: Craig Hitchings, [craig.hitchings@futurenet.com](mailto:craig.hitchings@futurenet.com)  
Editor: **cm** Specials: Andrea Robinson, [andrea.robinson@futurenet.com](mailto:andrea.robinson@futurenet.com)

## CONTRIBUTORS

Scott Solida, Alex Williams, Paul Rigby, Jon Musgrave, Jono Buchanan, Paul Taylor, Ben Rogerson, Leon Macey, Andy Jones, James Uings, Owen Palmer, rachMiel, Peter Kim, Roger Cawkwell, Tim Oliver, David Newman, Hamish Mackintosh  
Illustration: *Burning Question*: Jake, *Guitar Lab*: Chris Haines, *The Balancing Act*: MagicTorch

Group Senior Editor: Steve Jarrett  
Group Art Director: Ian Miller  
Creative Director: Robin Abbott  
Design Director: Matthew Williams  
Editorial Director: Jim Douglas

## ADVERTISING

Ad Director: Clare Dove, [clare.dove@futurenet.com](mailto:clare.dove@futurenet.com)  
Senior Ad Manager: Matt King, [matt.king@futurenet.com](mailto:matt.king@futurenet.com)  
Senior Sales Executive: Daniel Fitzhenry, [daniel.fitzhenry@futurenet.com](mailto:daniel.fitzhenry@futurenet.com)  
Sales Executive: Leon Stephens, [leon.stephens@futurenet.com](mailto:leon.stephens@futurenet.com)

## MARKETING

Campaign Marketing Manager: Charlotte Pratten, [charlotte.pratten@futurenet.com](mailto:charlotte.pratten@futurenet.com)  
Promotions Executive: Rebecca Hodges, [rebecca.hodges@futurenet.com](mailto:rebecca.hodges@futurenet.com)

## CIRCULATION

Trade Marketing Manager: Verity Cooke, [verity.cooke@futurenet.com](mailto:verity.cooke@futurenet.com)

## PRINT &amp; PRODUCTION

Production Co-ordinator: Frances Twentymann, [frances.twentymann@futurenet.com](mailto:frances.twentymann@futurenet.com)  
Production Manager: Rose Griffiths, [rose.griffiths@futurenet.com](mailto:rose.griffiths@futurenet.com)  
Head of Production: Richard Mason, [richard.mason@futurenet.com](mailto:richard.mason@futurenet.com)

## LICENSING

Head of International Licensing: Tim Hudson, [tim.hudson@futurenet.com](mailto:tim.hudson@futurenet.com)  
Tel: +44 (0)1225 442244 Fax: +44 (0)1225 732275

## FUTURE PUBLISHING LIMITED

Associate Publisher: Rob Last, [rob.last@futurenet.com](mailto:rob.last@futurenet.com)  
Publishing Director: Mia Walter, [mia.walter@futurenet.com](mailto:mia.walter@futurenet.com)  
Chief Operating Officer: Simon Wear  
Chief Executive: Robert Price

## SUBSCRIPTIONS

Phone our UK hotline on: 0870 837 4722  
Subscribe online at: [www.myfavouriteimagazines.com](http://www.myfavouriteimagazines.com)

NEXT ISSUE ON SALE: September 1

Printed in the UK by Polestar, Colchester on behalf of Future.  
Distributed in the UK by Seymour Distribution Ltd,  
2 East Poultry Avenue, London, EC1A 9PT, Tel: 0207 429 4000

Want to work for Future?  
Visit [www.futurenet.com/jobs](http://www.futurenet.com/jobs)



A member of the Audit Bureau of Circulations  
**18,261**  
Jan 2008-Dec 2008



Future Publishing Ltd is part of Future plc. Future produces carefully targeted special-interest magazines, websites and events for people who share a passion. We publish more than 170 magazines and websites and 100 international editions of our titles are published across the world.

Future plc is a public company quoted on the London Stock Exchange (symbol: FUTR).  
[www.futureplc.com](http://www.futureplc.com)

Non-executive Chairman: Roger Parry  
Chief Executive: Stevie Spring  
Group Finance Director: John Bowman  
Tel: +44 (0)1225 442244

© Future Publishing Limited 2009. All rights reserved. No part of this magazine may be used or reproduced without the written permission of the publisher. Future Publishing Limited (company number 2008885) is registered in England and Wales. The registered office of Future Publishing Limited is at Beauford Court, 30 Monmouth Street, Bath BA1 2BW. All information contained in this magazine is for information only and is, as far as we are aware, correct at the time of going to press. Future cannot accept any responsibility for errors or inaccuracies in such information. Readers are advised to contact manufacturers and retailers directly with regard to the price of products/ services referred to in this magazine. If you submit unsolicited material to us, you automatically grant Future a licence to publish your submission in whole or in part in all editions of the magazine, including licensed editions worldwide and in any physical or digital format throughout the world. Any material you submit is sent at your risk and, although every care is taken, neither Future nor its employees, agents or subcontractors shall be liable for loss or damage.



We are committed to only using magazine paper which is derived from well managed, certified forestry and chlorine-free manufacture. Future Publishing and its paper suppliers have been independently certified in accordance with the rules of the FSC (Forest Stewardship Council).



## welcome

Drum 'n' bass has always been one of the most popular genres among **cm**'s readership. From reader surveys to questions sent in to Q&A, it's clear that DnB is one of those styles that you lot are endlessly interested in, intrigued by and hungry for more knowledge of.

The reasons are pretty obvious, I'd say. Apart from the fact that it's just a fantastic kind of music, the world of DnB production is heavily software-based and its exponents always strives to push the sonic envelope. Whether you favour liquid, jump-up or the oldest-skool of jungle, there's something about those rolling beats, juggernaut basslines and tight edits that's joyously unique to the form as a whole.

And that's why the **cm** drum 'n' bass cover feature has become an annual event. DnB is ever-evolving, and every year, there are new tricks to be learnt and techniques to be assimilated. For 2009, we've put together what we reckon is our best masterclass yet, featuring no less than seven of today's most influential drum 'n' bass producers. So whether you're a die-hard DnB head or a 'genre tourist' looking for something new and inspirational to take back to your music of choice, our videos and walkthroughs are sure to get the creative juices positively pouring. Now load up that DVD-ROM and turn to p25 to get started.

**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.

**SUBSCRIBE AND SAVE! SEE P19**





ISSUE 142 SEPTEMBER 2009

# cm/contents

2009

# DRUM 'n' BASS

Our unmissable guide to the latest DnB production techniques, hosted by some of the genre's biggest names, gets rolling on p25!



## 53 THE BALANCING ACT

Learn how to strip back and build up your mixes and arrangements for truly show-stopping tracks

## 64 META-RECORDING IN LIVE

An innovative system for beat construction, brought to you from the hallowed halls of Berklee

## 77 BAND AHOY!

Taking a long, hard look at all sides of the music piracy debate



## 82 THE cm INTERVIEW

Charlie May, of production duo Spooky, waxes lyrical about software



## Tutorials

- 48** **PRODUCER MASTERCLASS**  
Nathan Fake shows us how he created *The Turtle*
- 60** **GUITAR LAB**  
We cover the basics of using delay plug-ins with your axe
- 70** **TOTALLY TRACKERS**  
Renoise's new Key-Tracking device thoroughly dissected
- 71** **THE EASY GUIDE**  
Exploring major modes
- 72** **OFF THE DIAL**  
rachMiel creates an album for the 21st Century
- 74** **SYNTH ESSENTIALS**  
Scot Solida gets involved with multi-stage envelopes
- 114** **Q&A**  
Readers' production problems solved
- 120** **CM FOCUS**  
Programming thunderous metal drums and dialling in shredding guitar tones

## Reviews

- 90** **WALDORF LARGO**  
Tabulating the pros and cons of this brand-new wavesequencing synth
- 92** **MAKEMUSIC FINALE 2010**  
We score this professional notation software
- 94** **FABFILTER TIMELESS 2**  
Delay processor with modulation options galore
- 96** **WAVES H-DELAY**  
The first in the brand-new analogue/digital hybrid line
- 97** **WAVES H-COMP**  
Dynamics plug-in that blends analogue with digital
- 100** **AUDIO DAMAGE EOS**  
The kings of bizarre effects tackle algorithmic reverb
- 101** **IK MULTIMEDIA STEALTH PEDAL**  
Sneakily rocking your virtual rig
- 102** **TOPTEN CANTABILE 2.0 PERFORMER**  
Streamlined plug-in host for those taking centre-stage
- 104** **MOTU TRAVELER-MK3**  
Road-testing the latest mobile audio interface
- 106** **MINI REVIEWS**  
A rapid run-down of sample packs, ROMplers and more
- 111** **CM RECOMMENDS**  
Our favourite apps and plug-ins of the month



## Essential cm

- 6** **INBOX**
- 8** **NEWS**
- 12** **THE BURNING QUESTION**
- 18** **FREWARE NEWS**
- 19** **SUBSCRIBE**
- 112** **USA SUBSCRIPTIONS**
- 113** **BACK ISSUES**
- 130** **NEXT ISSUE**

# cm DVD CONTENTS

7.9GB

PC MAC



**P38** Get a big-name drummer in your virtual studio with DrumCore 3 CM

- 38** **FULL SOFTWARE**  
Submersible Music's DrumCore 3 CM, for PC and Mac, will take care of all your tub-thumping needs!
- 39** **DEMO SOFTWARE**  
Trial versions of the latest releases, including FabFilter Timeless 2, Topten Software Cantabile 2.0 Performer and much more
- 40** **SUBMERSIBLE MUSIC DRUMCORE 3 CM**  
We show you how to create great-sounding using Drumcore 3 CM's MIDI loops, audio files and one-shot samples



**P39** Be sure to check out FabFilter's Timeless 2 tape delay plug-in demo



**p43** Watch Nathan Fake show off his production skills in his Hackney studio

- 43** **SAMPLES AND VIDEO**  
Drum 'n' bass samples and videos, plus our exclusive Nathan Fake Producer Masterclass
- 44** **CM STUDIO SESSION**  
Discover the remarkable range of applications, instruments and effects that await you in our exclusive software suite
- 46** **READER MUSIC**  
We review the **cm** readership's latest productions and offer some expert advice

### PDF GUIDES FOR NEWCOMERS

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



# cm/inbox

To  
share your  
views, visit  
**musicradar.com**  
News • Reviews • Tuition  
Community • Forums

Your chance to sound off about all things **cm** - email [cminbox@futurenet.co.uk](mailto:cminbox@futurenet.co.uk)

## Message of the month

Love you long time

It seems somehow apt that in this month's (**cm**140) *10 Years Back* section, you have the issue of *Computer Music* that really kick-started my music-making career. And also apt that, if printed, this letter will appear in one of your DnB issues, the genre I've dedicated my life to since way back in the early 90's. After 8-bit outings using OctaMED on Amigas, and the agony of audio and MIDI not syncing in Cubasis Audio, it was **cm** that blazed a new direction for me with Making Waves free on the cover disc. I knew that making a complete track

using only software must be possible, and **cm** made it reality.

Ten years on, me and my production partner have achieved the DnB holy grail of a real vinyl release, and should hopefully have many more to follow. **cm** has

been indispensable to me over the years, and I would say almost everything I've learnt has come from its pages. On a Pro Tools, Logic and SSL course that I'm attending, there hasn't been a moment when I've been unsure about anything, and I even feel confident enough to teach others on the course. I definitely owe this wealth of knowledge and experience to *Computer Music*.

I would urge everyone reading to never give up on your music-making ambitions, no matter how long the road seems. Read the mag from cover to cover every month, and try all of the tutorials - many things that have not been associated with 'my' genre have proved more than useful on many occasions. I'm still never 100% happy with my creations, but they're improving all the time, which is why I'll continue to subscribe to the bible of computer music production. *Computer Music* staff, this drum 'n' bass soldier salutes you!

**Ben, Harlow**

Nice work! Hopefully this month's cover feature (and your new soft synth) will improve your skills even further. **RM**

The  
writer of our  
Message of  
the Month will  
receive a copy of  
Rob Papen Blue for  
Mac and PC, worth  
£165, courtesy of  
Rob Papen and  
Time+Space!



[www.timespace.com](http://www.timespace.com)

## Galactic sounds

I always look forward to receiving my copy of *Computer Music*, and issue 140 certainly didn't disappoint.

I did notice, though, that in the Q&A section on p117, you directed readers to the online sequencer at **Splicemusic.com** for collaborations.

I wanted to inform you that **Splicemusic.com** has been acquired by **RemixGalaxy.com** and folded into our website. We've put a great deal of effort into significantly upgrading the sequencer, resulting in huge performance gains and several new features.

Our site, which debuted on May 1 2001 in public beta, is a remixing social networking site, where users can create original tracks or purchase commercial

music in multitrack format for remixing (the largest inventory of multitrack files on the internet!). Once posted, tracks or remixes can be shared with and reviewed by other users.

I wanted to make you aware of the change and encourage you to visit the new site.

**Kyle A Reed, President,  
RemixGalaxy.com**

**Thanks for letting us know.  
Readers, take note, and do  
indeed check out  
RemixGalaxy and its  
impressive browser-based  
MixStudio DAW. RM**

## Praise you

As an ambient musician of 20-plus years, let me congratulate you on such an

informative and wonderful mag.

As a loyal Ableton Live user, I just had to pick up your July issue, featuring a comprehensive overview of the new Ableton Live 8.

Ever since I started incorporating Live into both my composing and music production, I've found my

creativity and experimentation have grown exponentially.

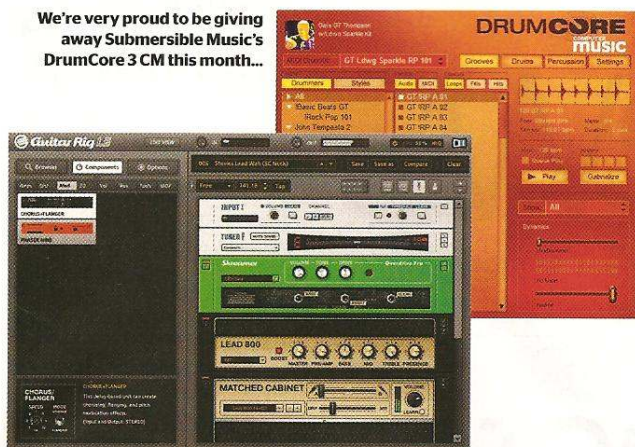
My latest album, *Rubaiyat*, was produced and mastered entirely in Live, and thanks to the demo software included on your DVD-ROM, I can now explore the various features and dynamics added to Live 8, which of course, I had already been

**Splicemusic.com has  
changed hands, so head on  
over to RemixGalaxy.com  
and get remixing!**





We're very proud to be giving away Submersible Music's DrumCore 3 CM this month...



...And last month's free software, Guitar Rig 3 LE, was no slouch either

boning up on through articles in the magazine.

Computer Music has become an invaluable resource to me as an electronic musician, and though I've never written to a music magazine before, I just felt I had to give praise where praise is due. Bravo!

David Gerard, Boston, USA

And it's much appreciated by everyone on the cm team. Turn to p64 for our guide to Meta-Recording in Live - I rather think you'll like it. RM

## Low-end woes

Let me set the scene. I've been working away for the past week on a song, and it's going really well. The build up is nice and atmospheric, and the bass is

"I had lost my wonderful bass tone. And I hadn't saved the sound as a preset - my song was ruined!"

sounding super-fat. As soon as I get home from school, I rush to the computer to get to work on my fantastic track. I start playing it and... hang on, something's wrong. That's not the amazing, fat bass I had there before!

For some unknown reason, I had lost my wonderful bass tone. And I hadn't saved the sound as a preset anywhere - my song was ruined!

I just thought I'd email you guys, so that you could pass on my message to your readers: always save everything! Synth presets, backup copies of your

projects, samples you've recorded, everything... you never know when something might go wrong, as is always the risk when working with anything electrical. Otherwise, you might end up like me, mourning my incredible bass sound and trying to restore my track to its former glory.

Simon Tarbet, Address not supplied

Ouch. Good advice, clearly. With storage being so cheap these days, it's only the most thrifty or reckless musician who doesn't have some sort of backup strategy in place. It's nothing short of essential, so disregard it at your peril. RM

## Location, location

On your letters page, when someone's from America, why do you put "USA" after their address, but when they're from England, you don't put "England"?

'English' Bob, Chorley

Because, quite simply, we're an English magazine with a primarily English readership, so that's our default, as it were. And it's not just America that gets 'specified' - anywhere other than England qualifies for the same treatment. RM

## Rig up

Guitar Rig 3 LE in cm141 has to be one of the best software freebies you've ever given us! I can't believe you guys actually managed to convince NI to let you have it. Thank you!

Mark Dawson, Brighton

Yup, quite the coup, that one. Hopefully you'll agree that this month's DrumCore 3 CM makes for an equally impressive follow-up. RM

**CLICKPRODUCE**  
SAMPLES, LOOPS, INSTRUMENTS & EFFECTS

FULLY DOWNLOADABLE  
INSTANTLY AVAILABLE

MUSIC IN TWO SIMPLE STEPS  
CLICK... PRODUCE



**CLICKPRODUCE**  
www.clickproduce.com



# cm/news

NEW RELEASES > COMMENT > INDUSTRY HAPPENINGS

## It's hall or nothing!

Say hello to a shedload of new reverbs from Rob Papen, VirSyn, D16 Group, 112dB and Sanford

> You spend weeks waiting for one, then five come along at once. Yes, we're currently inundated with fresh reverb plug-ins, with new releases from Rob Papen, VirSyn, d16 Group, 112dB and Sanford Sound Design.

First up is Rob Papen's RP-Verb, an algorithmic reverb plug-in designed in collaboration with Jon Ayres. Papen himself claims that it's "a unique reverb", and tweaking the sound is said to be a breeze, with control over Early and Late Reflections, EQ, Envelope, Mix and more.

Rob Papen's RP-Verb is out now for Mac and PC, priced €149.

[www.robpapen.com](http://www.robpapen.com)

VirSyn's latest ambient offering comes in the form of Reflect 2.0, a sequel to the original Reflect, built on the company's new ReallR engine. Reflect utilises "direct convolution of the critical early reflections without compromising the algorithmic tail generation," say VirSyn.

Reflect 2.0 "uses impulse responses from real acoustic spaces and classical reverb algorithms," offers true surround reverb and a four-band EQ section, and comes in VST3, AU and RTAS formats. There are over 150 presets onboard and it can import other surround reverb impulse responses.

VirSyn Reflect 2.0 is out now for Mac and PC, priced €169.

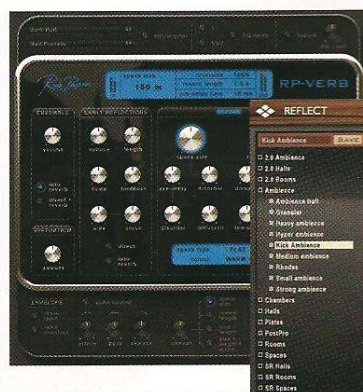
[www.virsyn.de](http://www.virsyn.de)

The latest addition to D16 Group's 'budget' SilverLine Collection is Toraverb, a "Space Modulated Reverb". The plug-in offers control over Early and Late reflections (with a dedicated knob for crossfading between the two), Early EQ and Late EQ, as well as PreDelay, Modulation, Wet Gain and FX balance.

At the time of writing, D16 Group hadn't revealed a release date or price, so keep an eye on the company's website.

[www.d16.pl](http://www.d16.pl)

112dB have released Redline Reverb, "a fully algorithmic and true stereo reverb, with possibilities far beyond the conventional." It

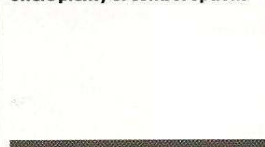


Rob Papen's RP-Verb is an algorithmic reverb that the company says is "unique"



VirSyn's Reflect 2.0 uses surround reverb impulse responses

d16 Group's Toraverb is the latest in their SilverLine Collection, and offers plenty of control options



112dB's Redline Reverb is a true stereo algorithmic reverb plug-in unit



Sanford Sound Design's Reverb 2.0 has six Early Reflection modes

achieves all of this by employing the "Rev-6 and Space Master Reaktor ensembles by Martijn Zwartjes."

112dB's Redline Reverb for Mac and PC is out now, priced \$149.

[www.112db.com](http://www.112db.com)

Last but not least, Sanford Sound Design have released Reverb 2.0, offering control over six Early Reflection types, the Pre-Filter section, tail Modulation and more.

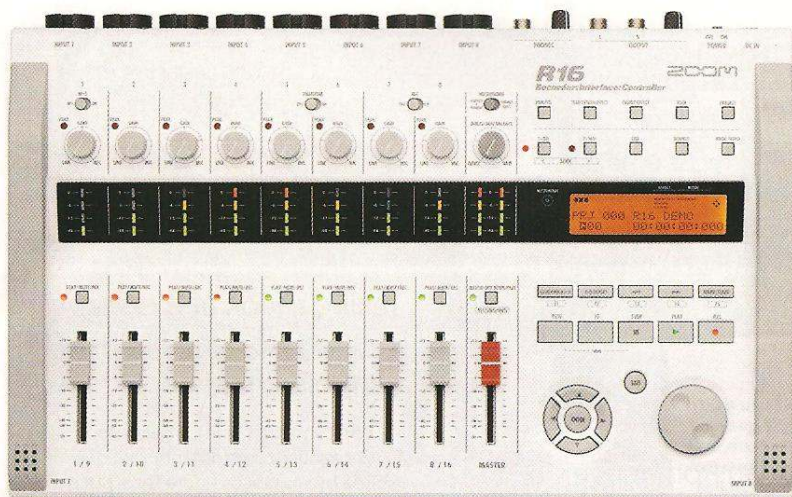
Reverb 2.0 for Mac and PC costs \$35.

[www.lesliesanford.com](http://www.lesliesanford.com)



# Zooming in

Zoom release R16 recorder/interface/controller unit



It can record tracks as a standalone unit, but Zoom's R16 is also an 8-in/2-out interface and controller

**Zoom have released a portable all-in-one 16-track recorder, audio interface and MIDI controller.**

The unit includes eight combination XLR/quarter-inch jack inputs and two outputs. There are also two built-in condenser mics for basic stereo recording. As a standalone system, it records up to eight tracks simultaneously at 16-/24-bit and 44.1kHz quality, and plays back a maximum of 16 tracks from the supplied 1GB SD card (expandable to 32GB). However, hook the device up to your computer via USB and the

eight inputs can be routed into your favourite DAW at up to 24-bit/96kHz quality. There's Mackie control emulation, too, for using the unit's faders, knobs, buttons and transport section to control a range of DAWs, including Cubase, Logic and Digital Performer. Built into the device are over 100 "advanced DSP" effects that can be used in conjunction with a DAW or standalone.

The Zoom R16 is out now, is Mac- and PC-compatible, and costs \$400.

[www.samsontech.com](http://www.samsontech.com)

**WHAT THEY SAY** "Zoom once again revolutionises digital recording with the first digital recorder with 16-track playback and eight-track simultaneous recording, utilising Secure Digital (SD) memory"

**WHAT WE SAY** As you'd expect, we're not hugely fussed by the unit's standalone digital recording functionality, but combined with a software DAW, the R16 looks like it offers a lot of bang for your buck

# Passive attack

Softube unveil the three-unit Passive-Active Pack

**Softube have released the Passive-Active Pack, a bundle of three EQ plug-ins.**

The Passive Equalizer offers three bands of EQ, "with an extremely wide and open sound"; the Active Equalizer comprises three parametric bands with Sharp or Blunt Q settings; and the Focusing Equalizer is a three-band EQ with Saturation control.

The Pack, for Mac and PC, costs \$249.

[www.softube.se](http://www.softube.se)

Softube's Passive-Active Pack offers three flavours of EQ with very tasty silver interfaces



## Mixdown



After years of struggle, our Deputy Editor is finally living the computer music dream

> It's surely not escaped your attention that a great number of plug-ins are either direct emulations of vintage analogue (or, indeed, digital) gear or are 'inspired' by such equipment, and there's a good reason for this: all that dusty old gear *does* sound great, and many top-name producers are still

"Computer-based music technology has reached a new plateau in the last year or two"

getting plenty of mileage out of their Pultec EQs, LA2A compressors, and so on.

The idea of emulating this stuff is nothing new, but to my mind, computer-based music technology has reached a new plateau in the last year or two. I say this because it's finally becoming viable to run a full studio's worth of virtual instruments and effects on the average computer, all with a quality of sound approaching that of hardware.

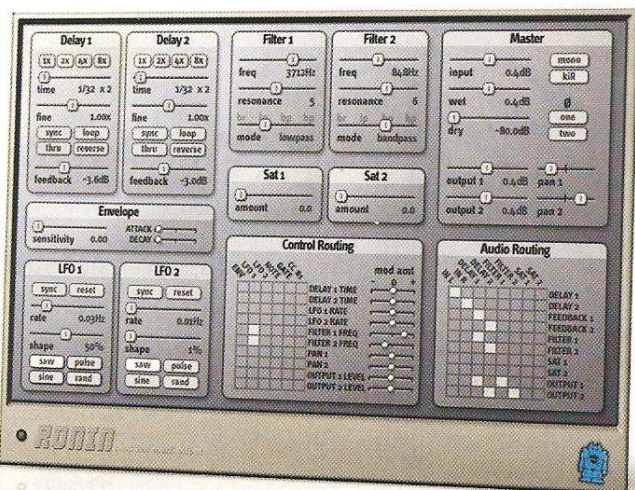
Of course, even ten years ago you could mix tracks to a reasonable standard on a computer, but I feel that we've reached a turning point, because not only is it very difficult to tell the best emulations apart from the real thing, but we've got enough processing power to actually use them when and where needed. This is a far cry from the bad old days when I had to use a wave editor to render tracks with the tastiest effects applied and then import them back into my DAW (no freeze function back then, see?).

In terms of sound quality, there's still a little way to go, in my opinion, but attaining that 'final 10%' in authenticity won't necessarily equate to a proportional hit on your CPU. For instance, Peavey's ReValver Mk III gives the most authentic 'amp in a room' sound that I've heard (which can be something of a double-edged sword!), but to get the best out of it, you have to run it in the full 4x oversampling, 64-bit processing mode. However, with this engaged, the CPU usage increases so much that I can't even run one instance in real time on my Core i7 machine because the plug-in uses more juice than a single CPU core can provide! So I'm back to the old rendering/freezing situation - but if that's what it takes, then so be it.

What's exciting for me is knowing that there is still room for sonic improvement, even if we have to wait until the next generation of CPUs and coding trickery to take full advantage of it.



Audio Damage's redesigned Ronin uses an old-school matrix design for routing its wealth of modulation options



## Damage control

Audio Damage introduce their revised take on Ronin

> Never ones to shy away from creating innovative and out-there plug-ins, Audio Damage have announced a new version of Ronin, their modular multi-effects plug-in. The original, released in 2005, was eventually discontinued, but the company are reviving it, the big draw being a new GUI and the addition of an AU version.

The unit comprises two delays, two filters, two saturators and two LFOs, along with a global envelope follower and master settings panel, for mixing and panning the stereo signal. The echo panels are "modelled after traditional analogue bucket-brigade type delays," which mimic tape-style pitchbending effects, such as chorus, flanging and flutter, whenever the Time parameter is adjusted or modulated. Both delay lines can also be tempo-synced, looped and reversed.

The filter modules comprise low-pass, high-pass, band-pass and notch types, and each unit is capable of self-oscillation at high resonance settings.

The dual LFOs can generate four basic wave shapes - sawtooth, sine, pulse and random - with a separate Shape control for "continuously varying the waveforms." What's more, the rate of each LFO can be tempo-synced, the second LFO can be reset by the first, and each can modulate itself when its own Rate is set as a mod destination - this last is for "very extreme waveform shapes".

The envelope follower acts as a modulation source, too, with separate Sensitivity, Attack and Decay sliders.

For sound-mangling, look to the Control Routing and Audio Routing panels. The first of these is for assigning the various modulators to target parameters. The second is for shuttling the audio signal around, which can be routed nearly anywhere, including back in on itself.

At the time of writing, Audio Damage's Ronin had no set release date or price, but keep an eye on the website for more info.

[www.audiodamage.com](http://www.audiodamage.com)

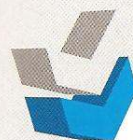
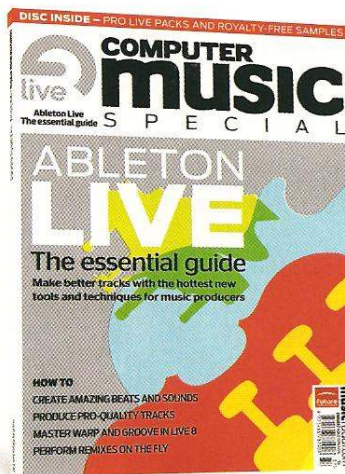
## cm Special

> The cm Special 37: Ableton Live: The Essential Guide brings you over 80 pages of brand new tutorials, advice and tips completely dedicated to Ableton's famous DAW. Learn how to make better beats and sounds, produce pro-quality tracks and get the most from the new Live 8 instruments and features.

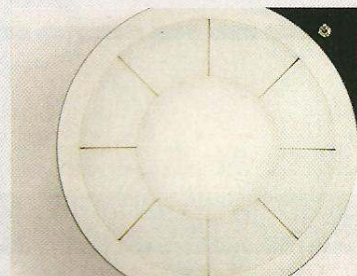
The disc, meanwhile, is full of exclusive Live Packs, samples and construction kits.

cm Special 37 is available from August 5 in the UK, August 8 in Europe, September 2 in North America and September 16 everywhere else.

[www.myfavouritemagazines.co.uk](http://www.myfavouritemagazines.co.uk)



## Downsampled



Taking a look at the shape of things to come in the controller market

> What should music hardware look like? For acoustic instruments, that question is limited by sound considerations. But digital technology removes these restraints - provided you're in a music manufacturer's R&D lab. However, thanks to cheap, accessible technology for DIY hardware, this question is open to anyone, and this is yielding strange new breeds of music gear.

Luca De Rosso, a design student at the University of Venice, exemplifies this new generation of music-technological imagination. While everything from step sequencers to DAWs are based on grids, Luca's new musical prototype elegantly places beats in a circle, enabling users to interact with a rotating loop via touch,

"The tools make short runs and boutique hardware more readily available"

mashing up audio files, with feedback from red LEDs beneath the surface. It's a real performance instrument for loop lovers.

The prototype became a reality partly because of some Lego-like development tools. Luca built his creation using Cycling '74's Max/MSP 5 for sound production, and the open source Arduino microcontroller platform for the brains of the hardware, freeing up his programming time for focusing on the physical design.

The challenges of scale and distribution remain - Luca is looking for a partner to produce his creation. On the other hand, the tools available to music technology designers today make short runs and boutique hardware readily possible. Devices like the limited-run monome controller, for example, are likely to be the first of a new wave of collectable hardware. Indeed, perhaps the days of look-alike design in music gear have come to an end.

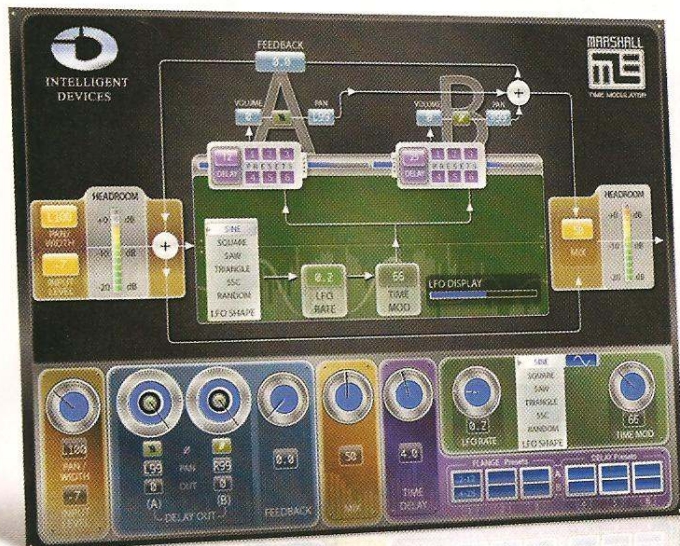
create digital music

CDM: Downsampled is brought to you by Create Digital Music, the must read online blog expressing the long view on music technology trends  
[www.createdigitalmusic.com](http://www.createdigitalmusic.com)



# Intelligent designs

Three new plug-ins from Intelligent Devices



This plug-in is based on the sought-after Marshall Time Modulator hardware unit

**Intelligent Devices have released three plug-ins: The Time Modulator, MegaMassDelay and Slip-N-Slide.**

The first is based on the Marshall Time Modulator, a bizarre hardware flanging unit, and features two delay lines in 1:2 or 1:4 ratio, each with their own volume, phase and pan controls, plus a joint feedback knob. These lines "can be swept over the range from minimum to maximum time over the LFO rate."

MegaMassDelay employs up to 100 delay

**WHAT THEY SAY** "Stephen St. Croix (born Stephen Curtis Marshall) called it The Marshall Time Modulator. You'll call it 'indispensable'. We'll say this much: there is no flange like it, and hasn't been for the past 25 years"

taps that can be tempo-synced or randomised for anything from non-linear reverb sounds to resonant, metallic tones.

Slip-N-Slide is "a unique frequency domain audio morpher/mangler", with Hold, Space and Thin (or bands) sliders.

The Marshall Time Modulator (\$149), MegaMassDelay (\$49) and Slip-N-Slide (\$79) are all out now in VST format for Mac and PC.

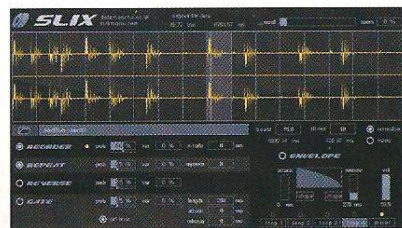
[www.intelligentdevices.com](http://www.intelligentdevices.com)

**WHAT WE SAY** With the Marshall Time Modulator being a favourite of Stevie Wonder, the plug-in version is sure to be worth a go, but we'll see how indispensable it really is in our upcoming review.

# dlM go for the slix

**Plug-in developers de la Mancha have released slix, designed for chopping up, effecting and mangling your WAV files. The company say that "slix is a randomising loop slicer, which switches between up to four loops, whilst shuffling, repeating, reversing and gating the slices of each loop according to user-defined probability."**

Once you've loaded a 16-, 24- or 32-bit WAV (or one of the 295 supplied loops) into one of the four slots, you can slice it as many times as you want. From there, Reordering plays the slices out of sequence, Repeating creates a stutter effect, Reversing plays the slices backwards, and Gating adds tiny gaps into the loops. It's possible to tempo-sync beats of different tempo or length, and



slix chops up your loops for all manner of manic slice-based action

there's a Variation range to control the amount of randomisation.

de la Mancha's slix for Mac and PC is out now, priced \$39.

[www.delamanha.co.uk](http://www.delamanha.co.uk)

## Trackers & Demoscene



A brand-new podcast from 'scene legends Farbrausch and a VSTi from Alcatraz

> What Picasso is to Cubism or Brian Eno is to ambient music and really long track names, the group Farbrausch are to the demoscene. With a history going back nine years, their groundbreaking productions (incorporating their own soft synths) have turned Farbrausch into a name that 'sceners hold in reverence. The newly released *BitJam Podcast #70* is a compilation mix of some of the outfit's greatest moments. Head over to [snipurl.com/bitjampodcast](http://snipurl.com/bitjampodcast) and tune in to some real demoscene magic.

Speaking of demoscene-inspired soft

"Their groundbreaking productions have made Farbrausch a name that 'sceners hold in reverence"

synths, eminent Amiga legends Alcatraz have just released a VSTi that's specifically designed for use in 4k demo productions. Called 4klang, this promising-looking miniature instrument is free, naturally, and comes with Renoise and Madtracker examples, too.

## PRODUCTION OF THE MONTH

**Ho no, the reality has been RUPTURED! by United Force**

A stunning exercise in light and sound, *Ho no...* recently took first place in the animation competition at the SceneCON 2009 party. Slysby, the musician who worked on the soundtrack, says he took inspiration from a 'How to make music like Philip Glass' tutorial. The sense of pastiche gels seamlessly with the unsteady camera work and scratchy film appearance, making this production feel like something out of the late 60s. Find this, the 4klang VSTi and more on your **cm** DVD.



United Force have created a great retro production





# Should I build my own music PC?

**> When the inevitable happens and you either decide or are forced to change your PC, what should you do? The easiest and safest option is to buy a brand-new machine that's been purpose-built for music making, but that's not the only route you can take. More adventurous sorts may be tempted to test their hi-tech DIY skills by building their own system, but is it really worth the bother?**

If the very thought of constructing a PC from scratch scares you rigid, then it's probably best not to entertain the idea, but although there are challenges to be faced, the toughest are likely to come when you're designing rather than building your new machine.

Pete Gardner is the Audio Solutions Specialist at Scan Computers, makers of the 3XS audio systems and vendors of computing

explain how the bits all go together, but to be honest, the building can often be the easy part of putting together a great audio system."

As well as ensuring that all the components work with each other, you also need to consider any music-specific hardware that you may own or want to buy in the future. If you have a FireWire audio interface, for example, you'll want a motherboard with Texas Instruments' FireWire chipset or one of the company's FireWire PCI cards, as these are universally accepted as giving the most trouble-free performance with FireWire audio interfaces and the like. And if you do go for a FireWire PCI card – or intend to use an internal DSP or audio card – you need to ensure that you'll have enough PCI slots available to accommodate them.

Anyone who decides to build a PC for audio has some homework to do, then, but while this may put you off the idea, you will at least have the advantage of being able to spec exactly the components you want. What's more, you could save yourself some cash.

"If you research your solution and manage to build a system that works first time, then you'll save yourself a build charge on the machine," confirms Pete Gardner. What kind of saving are we talking about here? "It could be up to a couple of hundred pounds, if you source your components carefully," he replies.

Money isn't the only consideration, though; for many of us, time is equally valuable. And if things don't work out quite as you'd hoped, this may be something that a self-built PC can drain.

"Hunting down a faulty component in a full system, then having to chase up its return and sort out a replacement, is time consuming, and for someone who may be working in a full-time job and only has limited time to devote to a hobby, this can be very frustrating," explains Gardner.

This, of course, is where builders of audio-orientated PCs come into their own. Not only will they spec, construct, test and configure a machine for you, you'll also have a warranty should anything go wrong with it. If you self-build, you're pretty much on your own.

## Playing catch up

You might think that an easier option would be to upgrade the PC that you already have. However, technology moves on, and if your current machine is getting on a bit, the issue of component compatibility is again likely to rear its ugly head.

"Once you reach the point of having to replace the motherboard, CPU and memory at the same time, it's worth asking yourself if it's not better to just start again," opines Gardner. "If your machine's over three years old, then the chances are that your hard drives and PSUs are starting to get on a bit as well, and it can make troubleshooting down the line easier if you're not having to match old and new components. I'm more a fan of taking your old PC and using it with FX-Teleport or Steinberg V-Stack to work as a VSTi host outside of your main machine, to give you even more resources."

Of course, it's not just a Windows-based desktop PC that you might consider building, and you'll probably have seen the YouTube videos showing OS X running on non-Apple

*If the thought of constructing a PC from scratch scares you rigid, then it's best not to entertain the idea*

components. He notes that: "Anyone can learn to build a PC, but you have to be willing to put some time and effort into researching the components and potential issues that can arise when you're putting it all together.

"There's a multitude of guides online that



## Ins & outs

hardware. So is building a so-called 'Hackintosh' computer viable?

We spoke to our sister magazine *Mac Format* and they said that, while many people have done this, the bottom line is that installing OS X on anything other than a 'proper Mac' breaks the terms of the license agreement and is therefore illegal. What's more, it's not simply a case of building an Intel-powered PC and then sticking the DVD-ROM in the drive - there are technical hoops that need to be jumped through. This being the case, unless Apple suddenly decide to allow users to run their operating system on standard PC hardware, if

Installing OS X on anything other than a 'proper Mac' breaks the terms of the license agreement

you want to use OS X, the best course is simply to buy a Mac.

Another project you might consider embarking on is the building of your own laptop, but again, you're likely to conclude that, although this is theoretically possible, it's more trouble than it's worth.

"There are a couple firms that offer base kits that then enable you to spec the laptop to your requirements by purchasing CPU, memory and drives," says Pete Gardner. "There are not many of these about, though, and the reason is that you don't really save much money in doing so. Laptops are normally put together by large firms with established supply partners and, as such, they can get the costs right down. Few retailers sell all the parts you need to build a laptop, so even if you get a barebones system, you're still paying more for the parts than a large retailer would charge for them inside of a completed system. It's also hard to specify motherboards with components you may want - for instance, certain FireWire chipsets that are compatible with hardware you may be using."

### Should you do it?

If you're time-rich and relatively cash-poor, building your own PC can be a worthwhile project to undertake. "It can be quite interesting specifying and building up your PC," admits Pete Gardner. "It can also prove quite beneficial if you put the time in to understand it all properly. You'll find yourself able to troubleshoot and fix a lot more of your own problems down the line, as you'll understand that much more about the machine."

It should also be noted that a self-build is preferable to buying an off-the-shelf PC from the high-street, which is unlikely to have any audio-specific considerations (a quiet power supply and fans, for example) and might well contain components that can't be replaced.

That said, you need to go into the building process with your eyes open: research the components that you're thinking of buying and make sure they'll work with each other and any current music-making hardware you currently own - and finally, be prepared to deal with the problems that will inevitably crop up. **cm**

### STEPPING UP TO THE PLATE

We've reviewed several quality reverbs recently, including 2CAudio Aether, Audio Damage Eos and LiquidSonics Reverberate. The five new ones detailed on p8 will really have to give it their hall to be heard above the cavernous din, then...



### FASTER IPHONE

The new iPhone 3GS is here, with its scorching 600MHz CPU and 256MB RAM. Here at **cm** we can remember when high-end PCs didn't have a fraction of that power, and look forward to more amazing music making software from the iPhone App community.

### ONLINE DAWs

Both Indaba and RemixGalaxy have seen major updates that make recording your music with an online app a realistic possibility. Hobnox's Audiotool has also been updated with the new Tenori-on-style ToneMatrix instrument.



### NO-SHOW FOR NI

Native Instruments have announced that they're no longer to have a presence at music industry trade shows, such as NAMM and Musikmesse, and will instead deliver all news via their increasingly Flash-y website. Will other companies follow their lead?

### PIRATE BUY

Notorious torrent-tracking site The Pirate Bay is being bought out by internet café company Global Gaming Factory X. The deal, worth nearly £5 million, will result in an above-board Pirate Bay site where you *get paid* for sharing. We'll believe it when we see it...

### BAD NEWS

It's farewell, then, to legendary musician Michael Jackson, but we're sure his musical legacy will live on, both in his own tracks and in a million dodgy bootlegs.



© JAN NEMENEN / EPS / CORbis

## Busting jargon



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

**Convolution** is a technique whereby the characteristics of a processor - eg, a reverb or preamp - are captured and used to process other signals. This is most commonly used for reverb, and your DAW might include a convolution reverb, such as Logic's Space Designer and Cubase's REVerbance. Unlike an algorithmic reverb effect (which uses a mathematical formula to create a virtual space), convolution uses recordings made in real-life spaces (or from real hardware reverb units), which is intended to give more realistic effects.

The recordings employed are called **Impulse Responses (IRs)**, and can be created by sampling the reverb tail of a short, loud noise (such as a balloon popping or a starter pistol firing) in a space. A convolution reverb effect can use the resultant IR to create a facsimile of real-life spaces, from box-rooms to cathedrals, not to mention devices like spring reverbs and digital reverb units.

In fact, any 'linear' process can be simulated with convolution. Analogue preamps, EQs and speaker cabinets can thus be approximated, and this often begins by recording a sine wave sweeping in pitch through them. Put

simply, the resulting output describes how each frequency is affected by the processing. The sweep is 'deconvolved' using a special piece of software, to create an IR that can be employed in a convolution processor to recreate the sound of the kit in question.

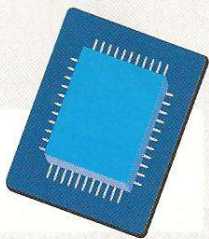
One caveat is that convolution cannot reproduce non-linear processes, meaning those that add harmonics to the signal (ie, saturation/distortion), affect the level in a non-proportional way (dynamics) or use modulation (eg, flangers, some digital reverbs). While IRs from such devices can sometimes still be useful, they won't sound exactly like the real thing.



SIR2: a fine example of convolution reverb



## System check



The latest goings-on in the wider world of computer technology

### PSYSTAR STRIKES BACK

Everyone's favourite knock-off Mac manufacturers are back! According to Psystar's latest newsletter, they're emerging from bankruptcy proceedings, and are also offering a new machine. The Open(7) is an Intel Quad Core 2.66GHz Xeon W3520-based tower that retails sans monitor for a mere \$1499. Not only is the bang-for-buck factor an appealing prospect for the computer musician, but the company claims that the tower benefits from "innovative three-layer sound-deadening side panels and front door", for the company's "most quiet computing configuration available".



**Pssst! Want a Hackintosh? Then act fast, as we reckon Apple will be coming down heavy on Psystar**

Quite what Apple will make of this latest development is unclear as yet, but looking on the bright side, they might at least shift some extra copies of Logic Studio... [www.psystar.com](http://www.psystar.com)

### CHROME ALONE

The stage is set for the ultimate clash of the titans: Google are taking on arch-rivals Microsoft with their own operating system. The not-at-all-sinister corporation have announced the "natural extension" to their Google Chrome browser: the Google Chrome Operating System. It's a lightweight platform that will apparently enable users to boot up their computers and be on the web in seconds. The operating system runs on a Linux kernel, and already has the support of such big names as Acer, Asus, HP and Texas Instruments, amongst others.

While this news is unlikely to have any immediate impact on audio software development, with web-based music applications such as Indaba becoming a more realistic prospect for producers, perhaps one day we'll all be making music in Chrome. [googleblog.blogspot.com](http://googleblog.blogspot.com)

### QUANTUM LEAP

There's plenty of big news for the future of computing this month, as researchers at Yale University have managed to create a rudimentary all-electronic quantum processor that can perform simple algorithms, while boffins at ETH Zurich have created an optical transistor from a single molecule. These are both important steps towards making practical quantum computing a reality.

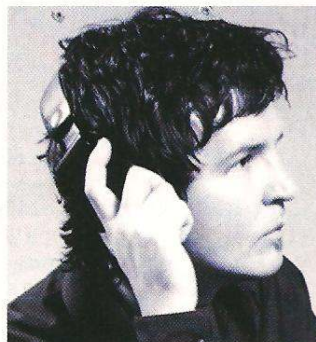
Additionally, research conducted at Stanford University shows that the topological insulator bismuth telluride could be used to create much faster and more power-efficient computers, potentially making cooling fans a thing of the past. The technology uses the intrinsic spin of electrons to store and transport information, rather than the value of a voltage, as in today's electronics.

[opa.yale.edu/news/article.aspx?id=6764](http://opa.yale.edu/news/article.aspx?id=6764)  
[www.ethz.ch/index\\_EN](http://www.ethz.ch/index_EN)  
[tinyurl.com/km3g6f](http://tinyurl.com/km3g6f)

2CAudio

## Andrew Souter

The Galbanum founder and 2CAudio co-founder reveals the future of the amazing Aether reverb



### Eye on the Industry

**cm** How did 2CAudio come to be?

**AS** "2CAudio was founded by myself and Denis Malygin - it was announced to the public on January 1, 2009, along with Aether. Denis and I develop concepts, features, functionality, mathematical models and similar things jointly, but it is his genius that translates our wildest ideas into workable and efficient code. Denis worked previously at SpinAudio and more recently with the Sound Toys team. He's a true hardcore coding genius who dreams in assembly language!"

**cm** And what about your sound design business, Galbanum?

**AS** "Galbanum is solely my vision and my responsibility - its products are inspired by my desire to explore the more extreme realms of electronic music and sound technology. As I've said before, music is a

balance between predictability and surprise. So generally, I'm looking for new ways to create some element of surprise.

"My process is a bit more involved than an average sound designer, I'd guess. I develop a private library of new low-level resources; these efforts represent the technical and academic side of the process, and include custom waveforms, LFOs, tuning files, impulse responses, graphic tools, etc. This process is much closer to science than art. Then when designing the patches, I'm able to go into a more creative mode and focus on the art side of things."

**"As I've said before, music is a balance between predictability and surprise"**

**cm** Have you always been a software user?

**AS** "I have always wanted to be a software user, but I was a little early for this period historically, and thus started using hardware

from vendors such as Kurzweil, Korg and E-MU. My vision is to have a small network of workstations connected to a wall of flat-panel monitors and one 88-note master controller combined with a properly ergonomically-designed, specialised mixer/controller/input device.

"I suppose my ideal would be something like a Yamaha CFIIIS Disklavier in the middle of a domed holographic computational visualisation surface - like the Vulcan training school in the new *Star Trek* movie, or *Minority Report* - controlling a hidden array of quantum computers that render interactive digital audio directly from continuous, non-discrete mathematical models. These sort of extreme visions are the sort of thing that motivates my work."

**cm** What's next for 2CAudio?

**AS** "Our goal with Aether and future pro products is to cater not only to electronic musicians, but also the high-end, outboard processing market segment - meaning pro engineers and commercial studio owners. We'd like to appeal to serious classical and jazz audiophiles, who may be more traditional and conservative in their musical tastes, and pop and rock acts, and everyone in between these extremes.

"We're making a few derivative products from Aether, such as a light version, an extreme version and a surround version. We're also making a series of creative effects that will be more influenced by my Galbanum experiences."



# Devil's in the details

> Studio Devil have released another plug-in aimed at guitarists. AMP, also known as Amp Modeler Pro, is their "flagship tube amp modelling plug-in, featuring all of the authentic tube guitar amplifier realism that you expect, bundled with some killer effects and a super-low-processing impulse modeller."

AMP contains 15 Preamp Models that employ Studio Devil's "proprietary digital vacuum tube modelling technology." Standard controls come in the form of Gain, Bass, Mids, Treble and Presence, with additional Boost, Deep and Bright switches for getting the most out of your tone.

There are three Power Amp Models to choose from, comprising Tube Class AB, Tube Class A and Solid-State MOSFET. These hook up to the 32 Studio Devil Cabinets, with 58 ReCabinet demo impulse responses also included. Further shaping is done via a 7-Band Graphic-EQ or Parametric EQ.

**WHAT THEY SAY** "This plug-in has everything you need to get professional guitar tone straight from your axe. Now, nothing stands in between your guitar and awesome tone... except a guitar cord"



Studio Devil's AMP (Amp Modeler Pro) is fair bristling with guitar tone-shaping controls

For effects, you get a Compressor/Sustainer, Wah-Wah, Echo/Delay Modeler, Reverb, Noise Gate and four modulation units, plus there's a built-in Chromatic Tuner.

Studio Devil's AMP is out in August for Mac and PC, although there wasn't any pricing information at the time of writing.

[www.studiodevil.com](http://www.studiodevil.com)

**WHAT WE SAY** The latest Studio Devil modelling software looks the business, and we can't wait to plug in an axe, crank the volume and rock out - the guitarist-friendly interface is certainly a refreshing sight, too

## Game overture



The game soundtrack making the headlines this month is Sascha

Dikiciyan and Cris Velasco's score for *Prototype* by Radical Entertainment. It's a very big, stomping, loud game, and its pioneering high-tech soundtrack makes the perfect accompaniment.

Almost *Bioshock*-esque, avant-garde orchestral elements (recorded at the legendary Skywalker Sound facility) collide with a vast library of fine-tuned, custom percussion samples, making this one serious project:

"It's an easy thing to record a bunch of string FX and throw some percussion hits over it to create tension, but that's not what we set out to do," said Cris Velasco in a recent interview with Music4Games. "*Prototype* deserves a unique-sounding score and we put in a lot of work to try to accomplish that."

You can read more on the music of *Prototype* at [www.music4games.net/Features\\_Display.aspx?id=352](http://www.music4games.net/Features_Display.aspx?id=352)

*Game overture* is brought to you by [www.music4games.net](http://www.music4games.net), the ultimate games soundtrack resource

## Soundware news

> UltimateSoundBank have released Beat Box Anthology (£115) for the UVI Workstation, featuring 10,000 samples and loops from over 80 classic drum machines built in the 70s, 80s and 90s. Ueberschall have packaged 1.8GB of live and funky drums, bass, guitar, keys and synth loops and samples into Studio Works (£90).

[www.timespace.com](http://www.timespace.com)

Prime Loops have unleashed Tribal Percussion Loops (£15), comprising over 170 African/Latin riddims and samples. And from the same stable comes Gasolina Beats (£20), featuring over 380 hip-hop drum loops by Justin Bendo, who has collaborated with Dr Dre, Eminem and 50 Cent in the past.

[www.primeloops.com](http://www.primeloops.com)

Loopmasters have released Moguai: Punx Electro, Tech and Progressive House (£25), featuring over 220 loops, 770 hits and 107 patches by the electronic dance producer. Push Button Bang have unleashed Infinite Element (£30), a ReFill comprised of 4595 patches and 3777 WAV files in many styles.

[www.loopmasters.com](http://www.loopmasters.com)

Sample merchants Sonokinetic have a new website, featuring content from orchestral percussion to epic rock construction kits.

[www.sonokinetic.com](http://www.sonokinetic.com)

## News in brief

### IT'S TWINS FOR AUDIOXYGEN

Audioxygen have released a new VSTi synth: Gemini. The plug-in features two of nearly everything,



including oscillators, filters, step sequencers and overdrive units. There's also the usual complement of LFOs, envelopes and effects, including reverb and delay. Gemini, for PC, costs £17.

[www.audioxygen.com](http://www.audioxygen.com)

### BRIGHT IDEA

db audiware have teamed up with lighting specialists ENTTEC to create the DMXIS plug-in.



Specifically designed for live performers, the unit controls any DMX-512 compatible lighting rig, via the supplied hardware interface and software plug-in. DMXIS is out now for both Mac and PC, priced £190.

[www.db-audiware.com](http://www.db-audiware.com)

### MADNESS FROM MYOSIS

Myosis have been very busy indeed, releasing no less than five plug-ins.

The effects are based on Moog's Moogfooger range of analogue guitar stompboxes.

The PC-only units

are PhraseDelay

(£49), PsychoDelay

(£39), MF OscBox

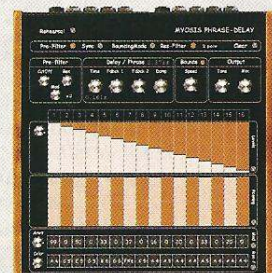
(£22), MF LowPassFilter

(£22) and MF RingModulator

(£22). The last three are

also available as a bundle for £49.

[www.myosismusic.net](http://www.myosismusic.net)

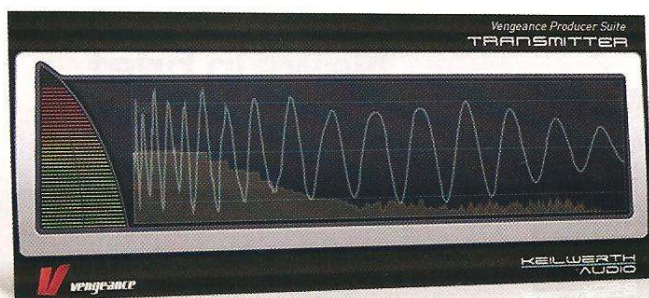


### COMPETITION WINNERS

Readers of cm140 could bag a copy of Ableton Live 8 in our competition, and now the results are in. The winner of the massive Ableton Suite 8 is Paul Ryan, who entered via SMS, while Colin Rouse is the runner-up and receives the rather good Ableton Live 8.

Now turn to p86 for another chance to win the Suite 8, along with a frightening amount of KRK and Novation gear!





Vengeance-Sound's Multiband Sidechain gives plenty of visual feedback on the behaviour of the sidechain curve and the ducked audio signal - above is the Transmitter plug-in



## Taking Vengeance

Vengeance-Sound announce a line of dance-oriented plug-ins

> Known for their revered series of dance-oriented sample discs, Vengeance-Sound are releasing a range of plug-in effects, "all specialised and dedicated to dance music," according to the company's main man Manuel Schleis. The first in this new Vengeance Producer Suite range is Multiband Sidechain.

The plug-in is entirely dedicated to sidechain pumping effects (ie, it doesn't work as a normal compressor), and can operate in single-band or multiband modes. The latter is more unusual, so we'll concentrate on that here.

There are two envelopes, Low and High, with a Split Frequency dial for determining

the point at which the bands separate. Each of these envelopes can be independently set up and mixed. What's more, there's a two-band Equalizer, with a FFT analyser for accurate editing. There are two filter modes: Digital is "perfect and without artifacts" and Notch "can be used for special effects, due to its heavy phase cancellations."

Three trigger modes offer plenty of options to get your signals pumping appropriately. In Audio mode, you can use, say, your kick drum track to trigger the compressor, via the Transmitter plug-in pictured above. MIDI mode will simply route any MIDI track to the plug-in. And lastly, Host

Sync mode will get rid of the need for an audio or MIDI trigger by pumping the signal in a 4/4 rhythm that's locked to your host's project tempo. Another handy-sounding feature is the "anti-click" mode, for eliminating audio artifacts in the attack phase, even when it's set to zero. And lastly, every single dial is fully automatable.

Vengeance-Sound's Multiband Sidechain for Mac and PC will be released in the middle of August. There's no official price announced as yet, but the company have said that the plug-in will be around or below the €100 mark.

[www.vengeance-sound.de](http://www.vengeance-sound.de)

## Jam session

Rayzoon drum up the brand-new Jamstix 3

> Just as we went to press, Rayzoon announced that the latest version of their virtual drummer software, Jamstix 3, will be released in Q4 of 2009. The company were kind enough to let us in on



This is a very early screenshot of Jamstix 3, so the GUI and feature set may change - but it sure looks promising!

the features list, but warned us that these details are subject to change before the official release.

According to Rayzoon: "The heart of Jamstix 3 is a rule-based groove engine that can simulate dozens of different styles, accompanied by a high-quality sample player, with multi-sampled kits, controllable ambience, alternate hits and load-on-demand capability."

Expected additions and changes for version 3 include the SongWizard for aiding song structuring; the GrooveBuilder audio analysis algorithm; more styles and drummers; sample load-on-demand for reducing memory usage; snares and toms with left/right/centre variations to mimic real sticking; and time signatures up to 15/8.

At the time of writing, Rayzoon hadn't confirmed the exact release date or price of Jamstix 3, but they say that it will initially be PC-only, with a Mac version set for 2010.

[www.rayzoon.com](http://www.rayzoon.com)

## Arturia 10 Year Suite

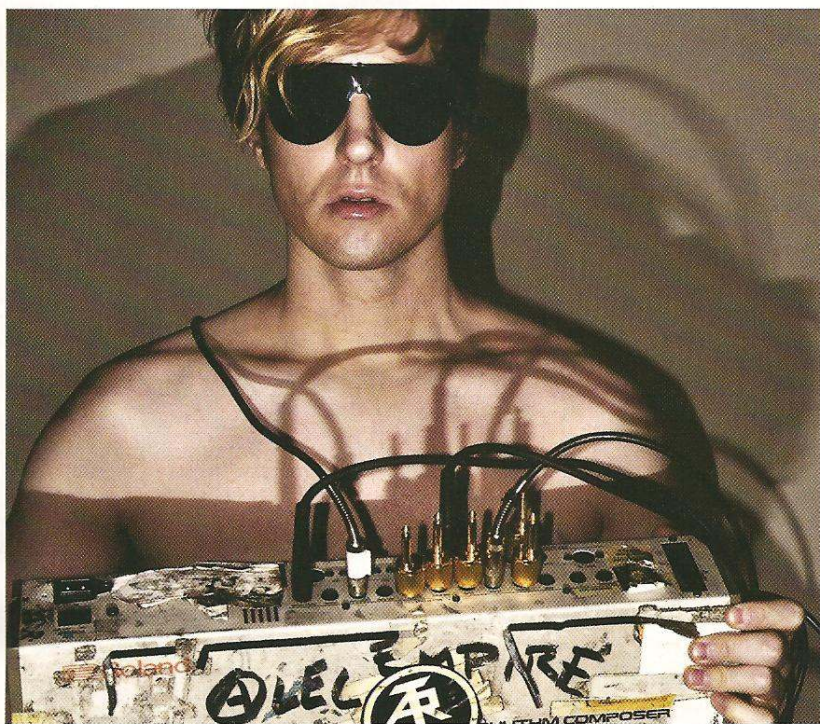
> Arturia, the French development house responsible for some of the most amazing soft synths money can buy, are celebrating their tenth birthday. The company started up in the summer of 1999 and displayed their Storm virtual studio at the 2000 Winter NAMM show under the banner "Time for a new paradigm".

To celebrate the landmark date, Arturia are releasing The 10 Year Suite, comprising many of their previously-available synth emulations and other modelling software. The full list of software includes the minimoog V, Moog Modular V, CS-80V, Arp 2600 V, Prophet V, Prophet VS, Jupiter-8V, Analog Factory and Brass. The company say that "loaded with 400 presets and modern features, each instrument will receive a free online upgrade this summer as part of our 10th anniversary celebration."

The 10 Year Suite is available now for Mac and PC, priced around £449.

[www.arturia.com](http://www.arturia.com)





Drive time

## Alec Empire

The Atari Teenage Riot founder and proponent of digital hardcore tells us of his favourite software

### ATARI NOTATOR SL

"People keep asking why I keep using this software, but the timing is so tight and it does one thing really well. It's such an old program, but it still works fine. I do most of my beats with Notator."

### AUDIO EASE SNAPPER

"This is a very cheap, Mac-only program that lets you edit and convert all the audio files on your computer. That might not sound such a big deal, but it's so fast and easy to use. A lot of people I know who work in music and films use Snapper rather than loading up a bigger piece of software. It syncs perfectly with Pro Tools, too, so that you can edit an audio file, then place it exactly where the cursor is in Pro Tools."

### PROPELLERHEAD RECYCLE 2.1

"I keep using ReCycle for various things and I always update to the newest version. It's great for cutting up audio files quickly - I've been using it since it came out. It's a good example of how Propellerhead make improvements over the years. In the music-making process, I don't want to spend too much time on technological bureaucracy, as I like to call it. If you want to get something done, even five minutes wasted can have an effect on your song."

### DIGIDESIGN PRO TOOLS

"I have to mention it, just because of the sound quality. It has a lot of disadvantages, as well as advantages. Pro Tools has come under attack from people who prefer Nuendo or Live, but I think if you're just recording some multitracks, it's still top of the league."

"If you'd asked me years ago if I'd use old analogue emulations on a phone, I would've freaked out!"

### AUDIOREALISM TECHNOBOX

"It's a really stupid name, but the 303, 808 and 909 sounds are surprisingly good. If you hook it up to a DJ mixer, the quality is fantastic for an iPhone app! I never found ReBirth much fun to use compared to the real machines, but the filters are great on this. I program ideas on it, then transfer them to the real thing. If you'd asked me years ago if I'd use old analogue emulations on a phone, I would've freaked out!"

Alec Empire's LP *Shivers* is out now on Eat Your Heart Out Records  
[www.alec-empire.com](http://www.alec-empire.com)

COMPUTER  
music10 years  
back

Issue 12 packed in the hard/  
soft debate, a round-up of  
MiniDisc recorders and more

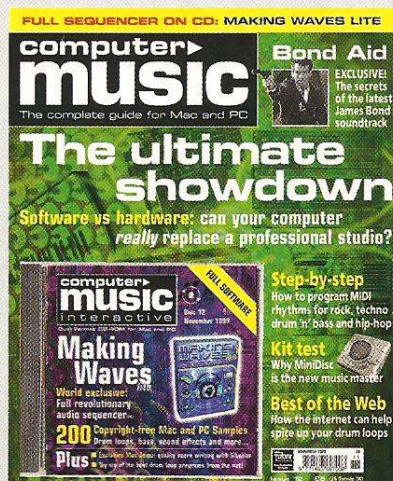
> Continuing where the previous issue left off, **cm12** featured more interviews with the producers behind various big movie scores. We caught up with Gareth Cousins and Julian Kershaw, who managed all of the tracks used in *Notting Hill*, and David Arnold, composer of the soundtrack to the then-latest James Bond blockbuster, *Tomorrow Never Dies*. Arnold used racks of hardware gear, including old Akai samplers and E-MU sound modules, alongside two Macs running Logic, Cubase and Pro Tools to

"The team pitted soft synths, modules and samplers against their hardware equivalents"

get the job done. Funnily enough, such a combination of software and hardware turned out to be highly topical in **cm12**...

The cover feature strove to answer the question of the day: 'Can your computer really replace a professional studio?'. To get to the bottom of the matter, the team pitted soft synths like ReBirth and Vaz, soundcards and sound modules by companies such as Gravis and Creative Labs, and soft samplers like Reaktor and GigaSampler against hardware equivalents by the likes of Korg, E-MU, Yamaha, Akai and Roland. At the time, no concrete resolution was reached, but today the answer is a resounding 'yes'.

Finally, the reviews section featured a round-up of MiniDisc recorders - the state of the art in mobile recording!

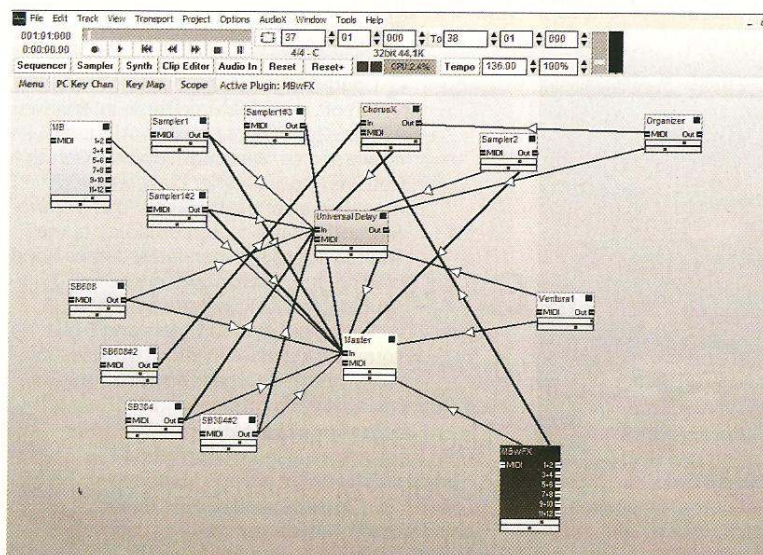


cm's 12th issue was dominated by the  
hardware/software debate... and MiniDisc



# Macaw

If you need a Windows DAW but don't want to spend any money, look no further than Robin Holmes' amazing freebie



Developer **Robin Holmes**  
Format **PC**  
Web [code.google.com/p/macaw/](http://code.google.com/p/macaw/)

The PC DAW Macaw has been around for a while now in various guises, including OscillaStation and Delta SP. It features modular routing of virtual instruments and effects, plus a built-in wave editor, and its creator, Robin Holmes, has just made it freely downloadable and open source. So how did the idea for the software come about? Robin casts his mind back...

"I was using a SoundBlaster Live! soundcard with an old version of Cakewalk in 1999, but there were no effects, so I needed something else. I got a program called Buzz by Oskari Tammelin, which had many effects. Then disaster struck - Oskari's hard drive, which contained all of the Buzz source code, crashed.

"At this time, I started making a program called Delta SP with the Delphi 5 compiler in Windows 95. I had no idea what I was doing back then, in 2001, so I read publications on effects and physical modelling from Stanford, by people like Julius Orion Smith and Perry Cook, and websites like **MusicDSP.org**. I gradually put together my first synths and

effects, which weren't very good at the time, but they were all stereo at least. And that became Delta SP, which is now available free as Macaw."

What's wrong with existing DAW software? "The plug-ins are made wrong. Currently, everybody compiles the plug-ins as DLL files. A new approach is to JIT (just-in-time) compile each preset at runtime to achieve the fastest playback. This is not a new idea - it's just not implemented very universally, as far as I know. A DAW that could JIT compile its processes on the target CPU, using specialised instructions such as AMD 3DNow!, would work somewhat faster than your average, statically-compiled DAW."

Will there be a commercial version of Macaw? "I originally made software in part to get money, but it never happened, so now I don't try. If you take a look at the net, you will see that almost all of the big websites are 100% free. It's a clear indication of the intent out there. When Macaw was commercially available as OscillaStation, I had two emails relating to the program in a year - since it's been free, there have been 15GB of downloads."

You can find more information on Macaw and its accompanying suite of VST instruments and effects on the author's website.

## Gun control

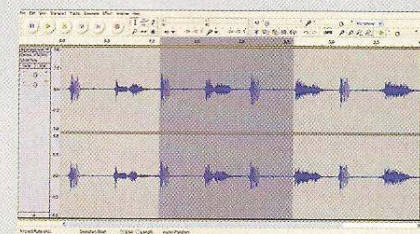
FL Studio funsters Image-Line have released a crazy, free version of their Ogun synth. Autogun doesn't feature any parameters, as such - instead, the instrument enables you to audition patches from over four billion presets. The success of these will be determined by users uploading comments on the sounds they've discovered, which can then be shared with other Autogun users or loaded into Ogun for tweaking. [www.image-line.com](http://www.image-line.com)

## Smooth Kriminal

Freeware fiend Kriminal has been extremely busy this month, releasing two new synths in a flurry of activity. Krolar SX-2 is inspired by the hardware Roland SH-2 synth, and is a virtual analogue with two oscillators, a low-pass filter and separate tuning control for the second oscillator. Mozi is a monophonic, single-oscillator synth that's based on the EDP Gnat. [homepage.nflworld.com/lisa.millington/](http://homepage.nflworld.com/lisa.millington/)

## The Spice is right

Two second-year students at Paris' Ecole Centrale have released Spicy Guitar, a new virtual instrument. Its synthesis engine is based on a physical modelling algorithm, offering three guitar simulations, three reverbs and two different types of string. The inharmonics and hardness of each string can be defined independently, and there are also controls for selecting the plucking position. [www.spicyguitar.com](http://www.spicyguitar.com)



## Freeware Classic Audacity

Developer **The Audacity Team**  
Format **Mac, PC**  
Web [audacity.sourceforge.net](http://audacity.sourceforge.net)

This audio editor has been a long-time *Computer Music* favourite for a number of reasons: it's easy to use, has a variety of useful features (including MP3 export, although the codec must be downloaded separately) and is, of course, free. It also has extremely modest system requirements, and will work beautifully on any machine that has been made in the last ten years or so. It's also admirably cross-platform, supporting Windows, OS X and Linux, making it one of the few bits of audio software that you can use on almost any computer. This makes it especially useful if you find yourself working on multiple machines, and its extremely light footprint means that it's possible to install it on other people's computers with little hassle.

"It's also admirably cross-platform, supporting Windows, OS X and Linux"

Although Audacity doesn't compare feature-wise to the more advanced commercial audio editors, it's still got plenty of tricks up its virtual sleeves. As well as the standard recording and editing functions that you'd expect, it offers multitrack mixing, built-in effects, various generators (including tone and noise) and spectral analysis.

It's worth noting that Audacity is available in two versions - a stable one (currently 1.2.6), which is rarely updated, and a beta that includes many more features, currently standing at 1.3.7. You can find the stable version on the **cm DVD** in **Software\Mac Software\Library (Mac)** or **Software\PC Software\Library (PC)**. Audacity is one of the most useful freebies that we've ever come across, so if you need an audio editor without any outlay, we simply can't recommend it enough.





2009

# DRUM 'n' BASS

Some of the biggest names on the DnB scene today let our cameras into their studios and lay bare their most treasured production techniques!

> For 20 years now, drum 'n' bass has been at the cutting edge of music production, and it remains one of the UK's biggest home-grown genres. Largely ignored by the mainstream media, it represents a rich seam of musical and sonic innovation, always brimming with new ideas and sounds.

Recently, DnB/rock crossover acts, such as Pendulum and the Qemists, as well as remixes of chart tracks by the likes of High Contrast and Blame, have seen the genre stray back into the limelight, but these are just part of story. 2009's DnB sound is as broad a church as ever. Few genres can claim to be as all-encompassing as

drum 'n' bass, which is able to assimilate other styles with ease, and in turn, influence newer, younger styles of music, such as grime, bassline house and, of course, dubstep.

For this year's cm DnB masterclass, we've hooked up with artists from every niche of the genre, from full-on dirty bass rippers, such as Shimon and Xample & Lomax, to the more esoteric sounds of Alix Perez, Sabre and Cyantific. Each of the producers featured here has something completely different to bring to the drum 'n' bass table, and over the next 11 pages, you'll see just how they create their trademark sounds, program beats, process

samples, record percussion, create edits and arrange tracks. Even if you're not a DnB fan, you'll find plenty of intriguing techniques to get your teeth into, as most of the tricks and tips used in this style can equally be applied to a wide spectrum of other musical styles.

As well as working through the walkthroughs here, head for the **Video** folder on the cm DVD to get your eyes on over two hours of exclusive accompanying footage. You'll see and hear our stars dissect their latest tracks, and create brand new sounds and beats from scratch. You won't get this sort of intimate access to DnB's big names anywhere else - enjoy the show! **cm**



# XAMPLE & LOMAX

The Ram Records renegades show you how to make a massive jump-up anthem

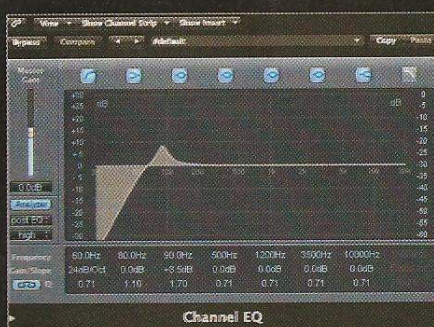
Xample (Gavin, right) & Lomax (Nick, left) are the original DnB odd couple: Xample's dirty, grinding rollers are a sharp contrast to Lomax's soulful beats. "Many people wouldn't put us together, because Gav has written a lot harder tunes in the past and I've written a lot more liquid stuff," admits Nick, "but he got me into a lot more synthesis and taught me a lot about production - I didn't really know how to use EQ, compression and other stuff. We hit it off quite well, productively speaking, and we've come up with good ideas together. I've done loads of collaborations in the past, but there aren't many people I can say I work better with than Gav."

Indeed, they work together so well that they're in the process of writing an album for legendary DnB label, RAM Records. In this tutorial and video, the pair show us how they create their massive dancefloor sound in Logic.

[www.myspace.com/xampleandlomax](http://www.myspace.com/xampleandlomax)



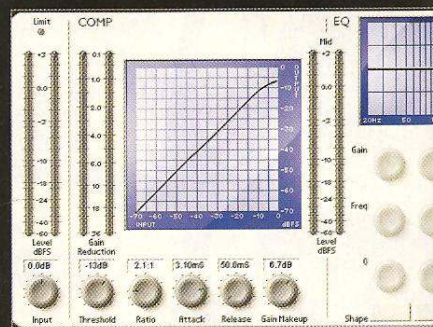
## >Step by step Making beats and basslines in Logic Pro



**1** > The pair start their track by searching for a solid kick drum sound. Once they locate a tasty sample, they load it into Logic's EXS24 sampler - they employ the spectral analyser in Logic's Channel EQ to tune it correctly with the EXS24, so that the peak frequency sits at 90Hz. They then boost this frequency and use a low-pass filter to attenuate the sub bass.



**2** > Next, they add a snare sound, again tuning it with EXS24 until it sounds good alongside the kick. The low-end frequencies are cut, too, then it's put through an Overdrive effect with a **6dB Drive** setting. These effects help boost the snare and punch it through the mix.



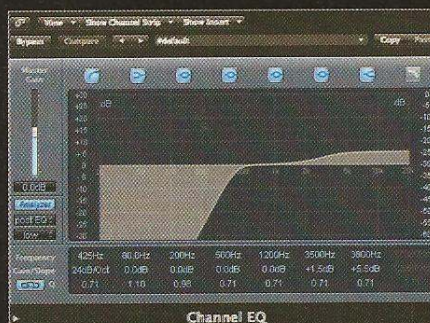
**3** > Another snare is layered over the first one. This has a small dip in the 1200Hz region, so the Channel EQ is used to boost this range. The duo put this through an Overdrive effect, then pump the entire drum mix through a LiquidMix compressor plug-in and bounce it all down as separate kick and snare tracks.

### POWER TIP

#### >Bass in the place

The track that Xample & Lomax show us in the video uses a variety of different bass sounds, and getting these to work together is an important part of the production process, as Nick explains:

"The key thing with the bass elements is to make them sound like they're all one sound: we want those parts to gel together, so we'll bounce them all down individually and adjust basic things like levels and EQ. Once we've got them sounding right together, we'll bounce down the whole thing."



**4** > With the foundation of the beat established, Xample & Lomax add some funk with the Amen break. They load up a version of the beat that they've processed and reprocessed over the years into an EXS24, then distort it, low-pass filter it and boost it a little at the top-end. This, too, is bounced down through LiquidMix.

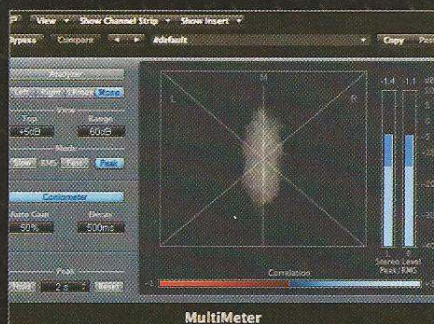


**5** > A tambourine is layered in next, along with some reverb. Nick plumps for various percussion sounds, including a clap, rides, hats and a cowbell. "These little rhythmical devices are simple - there's no complicated sequencing, but they add energy to the beat. We tend to have them quite low in the mix, but they all add to the general feel of the beat," explains Lomax.



## &gt;Step by step

## Making beats and basslines in Logic Pro (continued)



**6** > At this stage, Xample adds a variety of effects to the master channel, which help get that 'smashed' DnB sound while the track is being created. These include a Gain to control the over track level, an Overdrive to give the mix a harder, louder feel, a MultiMeter to check out the stereo field, and a Linear Phase EQ in case any frequency adjustments need to be made.



**7** > Once the pair have a good beat, they start working on the bassline. Here, Native Instruments Massive is used to create a growling mid-range sound as a foundation for the bass part. This utilises some of the synth's rougher oscillator tones through a **Scream** filter, modulated with a triangle LFO and distorted with the **Classic Tube** effect.



**8** > The pair create an alternative version of the bass sound, too, for switching up at the end of each 16-bar section. This uses different oscillators, filter modulation and Massive's **Parabolic Shaper** effect, to get a different tone. Various EQs and a distortion effect help shape the sound, and both basses are high-passed, to make room for the sub bassline.



**9** > To create the deep, low-end of the bassline, EXS24's standard sine wave preset is used, which follows the same notes as the Massive patches. The pair layer this with a distorted and high-passed sine wave, which adds some beefy harmonics to the mix. This distorted bass has a subtle pitch envelope, too, adding punch to the start of the sound.



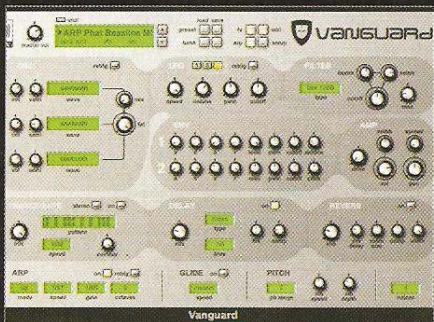
**10** > Xample & Lomax bounce the Massive parts for further processing, where more distortion is added via Logic's Overdrive plug-in and a Channel EQ brings out the highs. They also opt for the Space Designer reverb, set quite short, to 'stereoisie' the sound and give it a sense of space.

## POWER TIP

## &gt;Analyse this

One of the most widely used tools in Xample & Lomax's plug-in collection is Logic's Channel EQ, not just for equalisation, but for its built-in spectral analyser:

"We'd want to have a spectral analyser on every sound," says Gav, "really just to see what's happening with it. For example, the arpeggiator has quite a lot of subs, and we're going to add a low pad later, so we might want to cut this, to stop the sounds conflicting. I couldn't live without it!"



**11** > To create a suitably atmospheric intro, the pair call upon their arsenal of virtual synths. First up is reFX Vanguard, providing the typical trance-style arpeggios for which it's renowned. This is underpinned by a low-passed pad sound from Rob Papen Albino 3.



**12** > The dark feel of the intro is enhanced by the addition of a sinister, sustained chord from Albino 3, along with a simple lead line from Massive. These are sparse at first, but are later fleshed out to be more musically complex - check out the Xample & Lomax video on the **cm** DVD to see just how they do this.



**13** > The final touch is a spoken vocal that the pair record themselves, then pitch down in Celemony Melodyne. This results in some errant high frequencies, so the duo use a tight-notch EQ to tame them. The vocal is also slightly distorted and limited, to make it as loud as possible.



# CYANTIFIC

The Hospital Records duo take us on a tour of their old-skool roller, *Transmission*

Cyantific blend a love of old-skool jungle and tech-step with the trademark liquid sound of their label, Hospital Records. Never easily pigeonholed, Matt Whitehead (left) and Jon Stanley (right) experiment with a variety of styles, from the Kenny Loggins-sampling *Heart Beating* to the Burial-meets-Vangelis vibes of *Empty Streets*. As well as operating a shared studio in Surbiton, the pair work individually before bringing ideas together, as Matt explains: "We've both got pretty much the same software on our laptops, and we'll hook up to swap Logic files, though with something like *Empty Streets*, we did pretty much the whole tune together." So let's see how the duo break down their work-in-progress project *Transmission*, which is inspired by Dillinja's output from the mid-90s, and incorporates contemporary twists made possible with virtual instruments and effects.

[www.myspace.com/cyantific](http://www.myspace.com/cyantific)

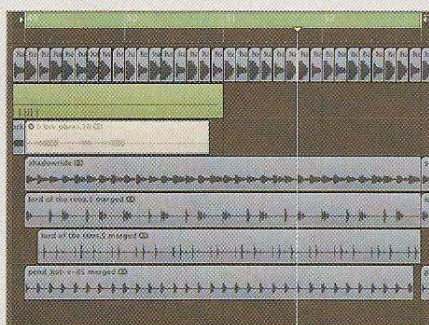


## >Step by step

### Creating *Transmission* in Logic Pro



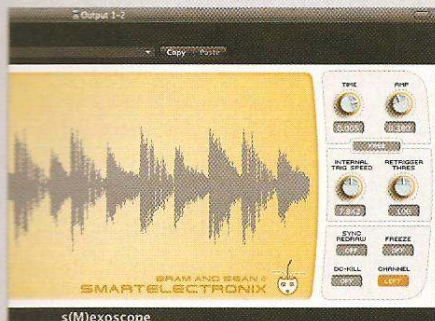
- 1 > The basis for the track is a classic 'Paris' breakbeat taken from one of the Jungle Warfare series of sample libraries. The pair chop this up in Logic Pro 8 and layer it with another rhythm from the Cyantific library of pre-processed beats.



- 2 > They create all of the beats on audio tracks in Logic. "I'm not into cutting up beats in samplers - I find it a lot easier when you can actually see what's going on," Jonathan notes. They add further layers to build up the beat, including a ride sampled from a DJ Shadow track and some hats from a Pendulum sample pack.



- 3 > Next, another mid-90s fave, the *Apache* breakbeat, is brought in. This played through *Computer Music*'s own Ohmygod! effect (in the **CM Studio** folder on the DVD) by Ohm Force, which is used to apply a filter to the edited break, the **Cutoff** of which is controlled by the effect's built-in LFO.



- 4 > Cyantific's secret weapon is the Smartelectronix s(M)exoscope oscilloscope plug-in. This displays level information as a waveform in real time, enabling the duo to see how dynamic or squashed a particular track is. "If it's that triangular shape, with a decent attack on it, that's right, that's how it should look," explains Jonathan, scientifically.



- 5 > The bassline in the track consists of two main parts. The first is a dirty, distorted 808 bass sound, played through an EXS24 sampler. There are actually two version of the same track, one high-passed, one low-passed. This enables the duo to balance the high and low components of the sound more easily.



- 6 > The other bass sound comes originally from a hardware Access Virus Rack synth. This also uses a couple of EXS24 tracks, the high-passed version of which is run through d16's Devastor plug-in. This multi-band distortion effect gives the sound some extra crunch and a strange, almost reverb-like texture.



## CYANTIFIC SYNTHESIS

**As you might imagine from hearing their electro-inspired sounds, Cyantific are not averse to having the odd twiddle on a synth or two. There are a few lying around the studio, so which are their favourites?**

"The Virus Rack was the first synthesiser we got - it's what we started writing tunes on back in 2001. I don't use it much any more, but it just feels comforting to have it there!" admits Matt. "Quite a new addition is the Sequential Circuits Pro One - I like using analogues in tracks occasionally, just here and there, to give it a bit of a rougher

edge, make it a bit more earthy. Sometimes I'll do a whole bassline on it - it won't be exactly tight, but I like imperfection."

Jonathan agrees: "Plus, the sound you get out of these might not be the same the next time you turn it on!"

"We've also used the Roland SH-101 in loads of our tracks - it's great for bass. I'm always surprised at the funny sounds that come out of it," says Matt.

"It's quite flexible for what it is," Jonathan adds, "but it takes a while to warm up. And sometimes it even picks up radio transmissions!"

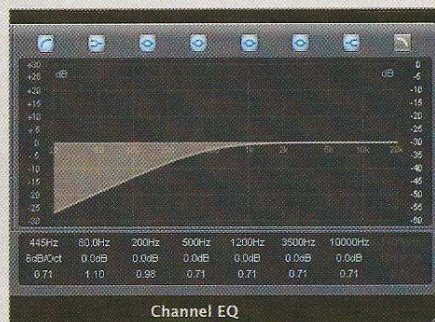
### And on the soft synth front?

"We discovered Togu Audio Line's plug-ins a few months ago, and they've done some pretty decent old-school synths," says Jonathan. "They did an SH-101 plug-in, which was a bit shit, but the other ones are really good. I used to have a Roland Juno 106, so I know it fairly well, and the TAL version is really good. They've also got a plug-in that's just the chorus off that synth, which is really nice, though you do need to put a bit of EQ on it, as it seems to cut the top-end off. We also use NI's Pro-53, a Prophet 5 emulation, as well as FM8. One of

my favourites is the impOScar emulation of OSC's OSCar. I've got the original, and I've compared it to the software - the plug-in does pretty much the same job as the hardware, so I'm gonna sell it. I love the filter, as you can sync it to the LFO and start changing patterns - it mashes up the sound a lot!"

"I'm quite into Rob Papen's Predator," says Rob. "There are some really old-school dance presets and cool 80s arpeggios."

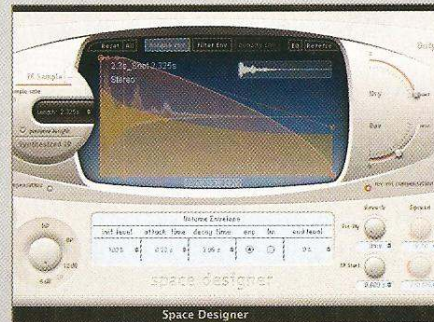
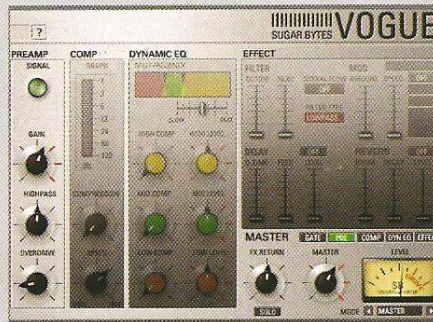
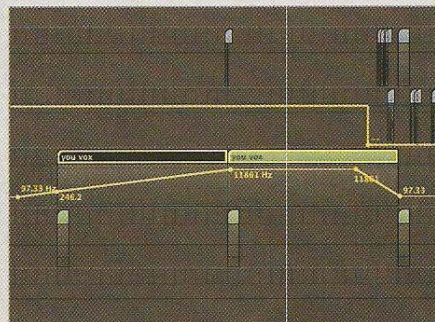
Matt agrees: "It does really nice, full bass sounds and has a good effects section, too, which you can use as an effect plug-in on its own."



**7** > The pad chords are samples from a piece of 80s library music that the duo cut up and play back via the EXS24. A Channel EQ cuts all of the low-end from the track. "Anything that isn't a subby sound, we tend to cut the low-end, which enables us to give more space to the bass and beats," elucidates Matt.

**8** > To compliment the pads later on, a high string sound from a JP-8000 comes in, again sampled and played back via the EXS24. The retro beep noise on the track is run through another Channel EQ, too, where some of its peaks are tamed, and a stereo delay unit is employed to create a rhythmic texture.

**9** > Back in the day, creating glitchy edits with hardware samplers used to take an eternity. Not any more! Matt uses Sugar Bytes' Effectrix plug-in to apply timestretching and filter processing to some of the samples.



**10** > A short, looped vocal sample, played back again via the EXS24, is employed at the start of the track, to create added atmosphere. This is run through Ohmygod!, the filter **Cutoff** of which is automated to gradually open up and reveal the sample's higher frequencies.

**11** > Yet more atmosphere is provided by obscure 70s soundtrack samples. Some of these are dropped straight onto audio tracks, but others, which require retuning, are played through an EXS24. These are also run through Sugar Bytes' Vogue channel strip emulation, to really bring out their inner warmth.

**12** > The final touch at this stage comes from a couple of Roland 727 percussion samples, sent through an atmospheric reverb preset in Space Designer to create a classic Source Direct-style effect. The track isn't finished yet, so you'll have to wait for the final release to hear the results.

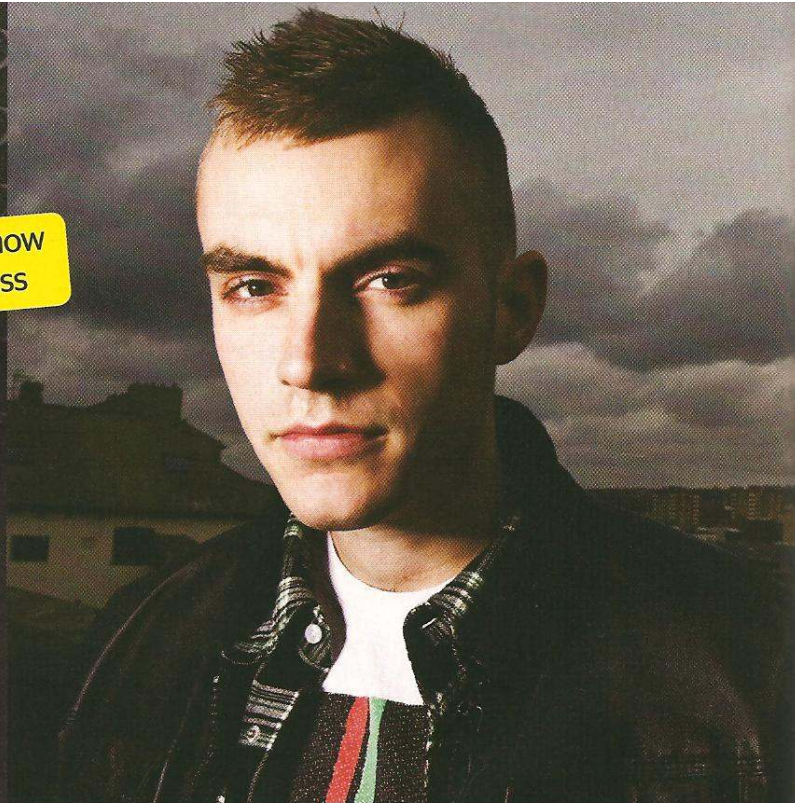


# ALIX PEREZ

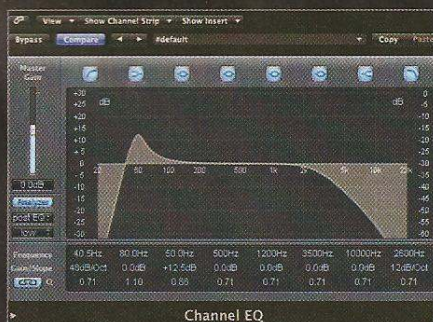
The liquid DnB producer demonstrates how he records percussion and processes bass

North London DJ and producer Alix Perez has had an unusually speedy rise through the ranks of the DnB hierarchy. Starting out with releases on some of the finest floaty labels around, such as Strictly Digital and Fokuz, with a soulful, liquid sound, Alix' music has gradually become darker and more experimental. Recently he released a 12" on the legendary Metalheadz label with Sabre, and later this year, he's set to release his debut album on Shogun Audio - see the *Sho' you right* boxout for more on that. We caught up with Alix in his Haringey studio, where he was in the process of creating a brand new track. In this exclusive walkthrough and video, you can see and hear how he gets his signature sound, including recording his own percussion on the spot and creating dirty bass riffs with samples from his beloved Access Virus TI Polar synth.

[www.myspace.com/alixperez](http://www.myspace.com/alixperez)



## >Step by step Creating a track from scratch in Logic Pro



**1** > Beats are usually first on Alix's to-do list when creating a track, and to start things off, a tried and tested kick drum sound is sequenced. Alix low-cuts this at 40.5Hz to take out some of the sub frequencies, and boosts at 50Hz to make it punchier. The top-end is also gently rolled off to soften it slightly.



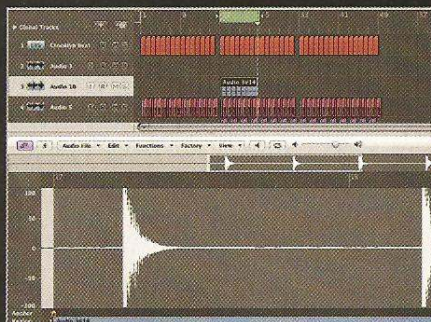
**2** > Alix has a penchant for recording his own percussion sounds, and to get a rim-shot style snare for the track, he samples a woodblock with a Neumann TLM 193 mic into his Edirol FA-66 audio interface. This is put through Logic's PlatinumVerb plug-in, with a **Reverb Time** just short enough to stop the mix getting muddled up.



**3** > To make the snare fuller, Alix records the clicking noise from a rattle. This is layered up with the woodblock, and both are panned slightly to create a stereo effect. Alix applies reverb on the rattle sample, too, though this time, it's from the similar GoldVerb effect.



**4** > To boost the level of his drum sounds, Alix routes them to the same bus, where dynamics processing can be applied. Here, Logic's Adaptive Limiter is used to jack the **Gain** of the drum mix by 8.2dB. Alix also often uses EQ at this stage to equalise the drum mix as a whole.



**5** > The snare needs more high-end 'air', so Alix makes a recording of himself striking a tambourine with a drumstick. He records several different takes, so that he has a choice of hits to pick from. Special care is taken when editing the start point of the audio, too, so that it sits nicely with the existing percussion.



**6** > Once the tambourine hit has been mixed successfully, reverb is applied to stop it sounding so dry. This time, Alix plumps for Logic's SilverVerb, and he uses the effect's low-cut to attenuate the reverb's low-end. This helps emphasise the splashy higher part of the sound.



"I can't stress enough that you start with a palette of sounds that are strong. Don't be scared to experiment - when you first start, you attempt to emulate people and want to sound like your influences, but eventually you need to take that and develop your own sound. If you're sampling, it's really about spending time looking for sounds, like the old guys did. With the old samplers, they really had to make sure that the sound was good." Alix's LP will be released in October. [www.shoqunaudio.co.uk](http://www.shoqunaudio.co.uk)





# SHIMON

The ex-Ram legend gives up the techniques behind his dirty beats and basslines

Shimon has been making drum 'n' bass since his junglistic 1994 debut on Ram Records, *The Predator*, and is one of few DnB producers from that era to continue innovating to the present day. His career highlights include the crossover hit and seminal shuffle anthem, *Body Rock*, with Andy C, breaks releases on Finger Lickin' Records with Nixon, a massive remix of Capone AKA Dillinja's *Tudor Rose*, and most recently the launch of his own label, AudioPorn. We caught up with Shimon in his Hornchurch studio to find out more about his production style and the ins and outs of running a label (see *Boogie nights* boxout). In this walkthrough and its accompanying video, Shimon reveals some of the secrets behind the making of his trademark filthy beats and basslines, and gives advice on good workflow habits and how to get the most out of your plug-ins.

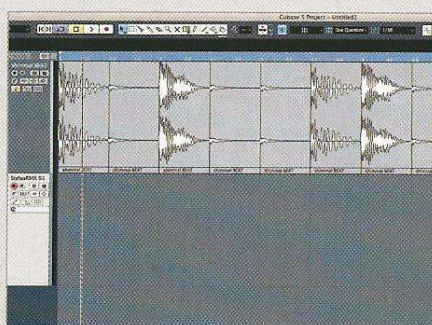
www.myspace.com/shimonram



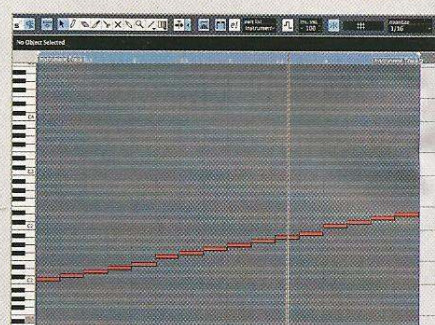
## >Step by step Making beats and basslines in Cubase



**1** > Shimon is a big fan of Iced Audio's AudioFinder software, which he uses to search and organise audio files. "Workflow is pretty important - you don't want to sit there looking for sounds all the time, when you're trying to get your beats together," he says. Shimon begins by sourcing a decent loop.



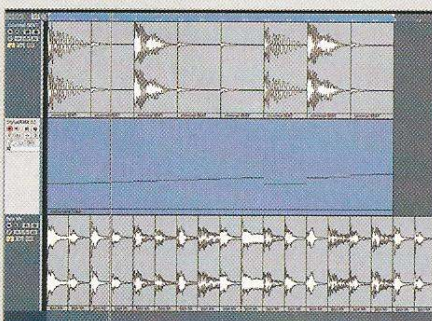
**2** > Eventually he finds a loop he's happy with - a fairly simple kick and snare pattern from another project - and loads it into Cubase. The loop is tightly quantised, so chopping it into its constituent parts is a quick and painless process. Shimon rearranges the loop into a new pattern, and uses Cubase's fade system to tighten up some of the hits.



**3** > Happy with this element, Shimon searches for another, this time using Stylus RMX. Once a complimentary loop is located, he drags its MIDI data into the project. Shimon brings this up in the grid edit window and quantises it, so that it fits with the first beat better.



**4** > The rhythms of the two different beats don't quite gel perfectly at first, so Shimon rearranges the MIDI part of the second loop slightly. He assigns the **Coarse** parameter to a knob on his MIDI controller, so that he can easily change the pitch of this beat to suit the first loop.



**5** > The next part is an audio loop comprising some serious conga action. This is conveniently at the project tempo, so Shimon easily cuts the loop into 16th-note slices by holding down **Alt** and cutting with the Scissors tool at the first 16th-note. He checks the slices to make sure that each beat is perfectly timed.



**6** > To tighten up the entire loop, Shimon applies fades to each slice. Additionally, Camel Audio's CamelPhat 3 plug-in is used, set to the **DRM CLHH Run 2** preset. This employs a band-pass filter tied to an LFO, giving the beat a rushing effect. He fine-tunes the tempo and frequency to get the desired effect.



## BOOGIE NIGHTS

**Over the past couple of years, Shimon has left the comfort of Ram Records to start up his own label, the interestingly-named AudioPorn. But why risk leaving one of the biggest labels in DnB?**

"I was happy on Ram for years and years, so for me it was the next step in growing and having more control over what I do - how I want it to look and stuff like that.

"Even though I've been in this industry for 15 odd years, I've never wanted to be in the business side of it. I just wanted to sit in my studio, smoke weed and make tunes, and go out and DJ, and all of the fun

stuff. This was great for me, though to be honest, I wish I'd thought about the label sooner. I'm loving it - I've got artists now and I'm all about keeping them happy and bringing them through, and if I can do that for someone else, then that's reward enough for me."

**How exactly does he get involved with artist development?**

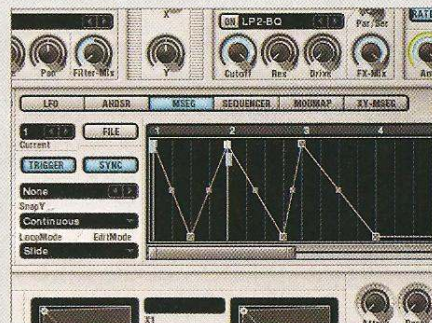
"I met Dirtyphonics through Tali - they were sending me tracks and I could tell straight away that they had talent, but they weren't quite what I want to be putting out. Those guys were a unique case,

because I gave them minimal advice and as they listened to everything I said, they got a lot better quickly. I get sent different stuff all the time by different people, and if I can hear talent in it, whether I want that tune or not, I'll keep an eye on these people, give them any advice that I can and just try to steer them in the right direction. When you're coming through, just for someone to take notice of what you're doing is a big motivational thing for you. That can be a lot of help to people. I'll take that time out to go, 'Yeah I like it, but can you change this, think

about doing that?', until we've got something that we can work with."

**Is the internet an important factor in locating new talent?**

"Absolutely - the entire business is now run through the internet: you use the internet to source your material, for samples and software, and you sell your music through it. It's kind of a shame, because you don't see everyone like you used to in the Music House days, where everyone would go with their DATs to press up dub plates - that was how you used to hear new music." [www.myspace.com/audiopornrecs](http://www.myspace.com/audiopornrecs)



**7** > The final element is a shaker loop. Shimon inserts another CamelPhat plug-in on this track, using the **DRM OPHH Pump** preset, which causes the volume level to duck on each beat. This creates a sidechain-like pumping effect.

**8** > Bass-wise, Shimon's current synth fave is Camel Audio's Alchemy. As well as being a rather sophisticated sampler, this instrument offers some cool virtual analogue capabilities. Shimon starts with saw and square oscillators, tuning them a fifth apart to create a basic chord. These are run through a low-pass filter.

**9** > To modulate the movement of the filter's cutoff frequency, Shimon calls Alchemy's MSEG (Multi-Stage Envelope Generator) into play. This enables him to create complex modulation curves graphically, which can also be looped, much like a very sophisticated LFO.

### POWER TIP

#### >Effects on the fly

To quickly and easily create drum-based effects, Shimon will run all his drum tracks through the one bus, into which Sugar Bytes Artillery 2 is inserted. A MIDI track is created and routed to this effect, enabling Shimon to program in effects, such as delay, filtering and looping, all in perfect sync with the rest of the track.

"I find it really cool for little fills and edits," advises the junglist, "and if you quantise the MIDI triggers, you can get everything really nice and tight."



**10** > To rough up the bass sound a little, Shimon activates the synth's **Distortion1** effect, and turns up the **Bit Crush** and **Mech** parameters. The effect is a bit over the top, however, so he turns the **Post Gain** down slightly. Overall, this gives the sound a bit of a crustier top-end.

**11** > Shimon programs in a simple riff to trigger the bass patch, so that he can tweak the sound in context. The final touch again comes courtesy of CamelPhat, which adds some extra movement with its tempo-synced LFO filter sweeps.

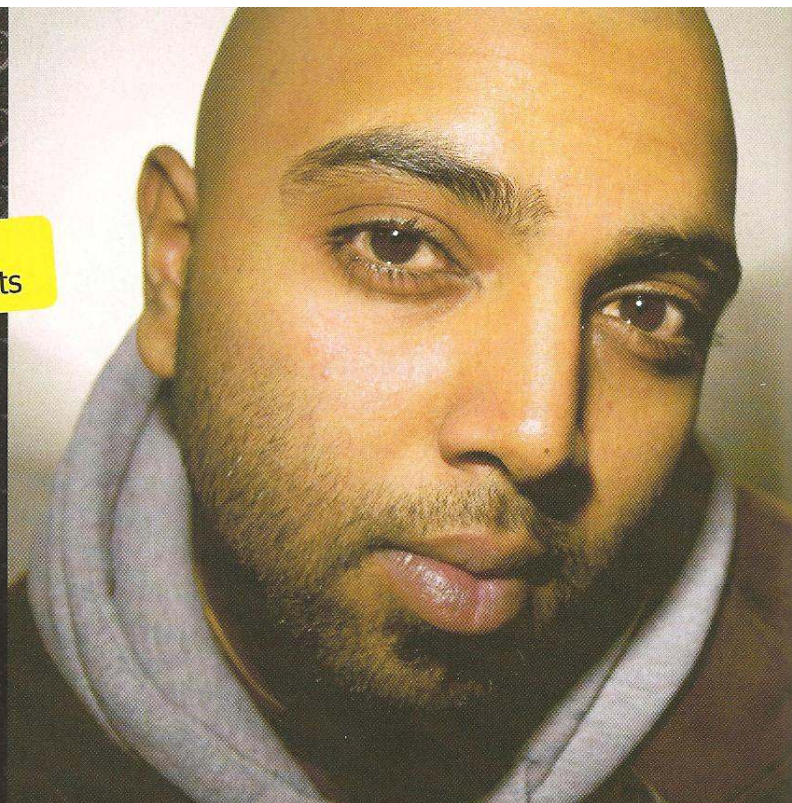


# SABRE

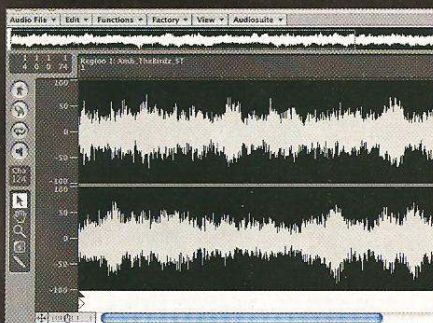
The doyen of dark DnB reveals how he creates techy sounds and orchestral parts

Sabre's interest in music was first sparked by hip-hop, but in the late 90s his attentions were drawn to the futuristic sounds of Photek, DJ Trace, TeeBee and Future Forces. After DJing on pirate stations, including UK Rumble and Rude FM, Sabre took a music technology course and began producing his own tracks. Inspired by the crate-digging styles of his hip-hop heroes, such as DJ Premier and RZA, as well as the sound of the darker side of DnB, Sabre's tracks are an intriguing fusion of warm, organic samples and dark synthesis. With releases on Critical, Bassbin and others, Sabre has become a fixture on the DnB scene, and has recently contributed to the score of *American History X* director Tony Kaye's latest film, *Black Water Transit*. Here, he shows us how he makes his signature minimal beats and basslines, and explains his use of Garritan Personal Orchestra in his productions.

[www.myspace.com/sabrelondon2u](http://www.myspace.com/sabrelondon2u)



## >Step by step Building the intro to *Decorum*



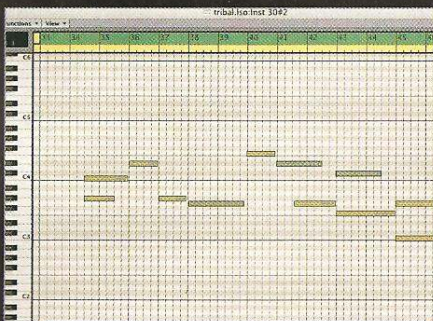
**1** > The seed of the Sabre track *Decorum* is a drone sound. This is actually a looped white noise-like effect taken from a record, which is used to create a patch in an EXS24 sampler. Sabre pitches this sample down a couple of octaves, revealing the subtle movement and rhythms in the sound more clearly.



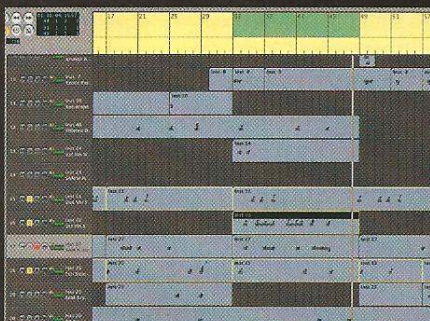
**2** > The sound carries a lot of harsh resonant frequencies. To make these less apparent, Sabre uses distortion, in the form of Logic's Guitar Amp Pro to saturate the sound and squash the unwanted peaks. He then uses Logic's Stereo Spread effect to move the sound around the stereo panorama automatically, and a GoldVerb reverb to add a sense of space.



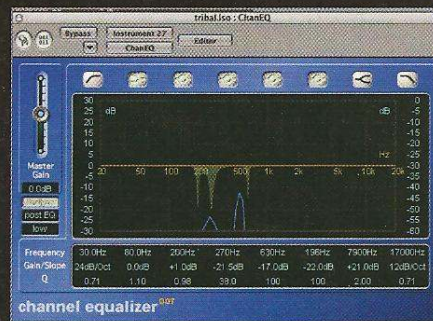
**3** > Sabre finds this sound very useful, as a kind of atmospheric foundation on which to set the rest of the music. Throughout the track, the volume level of the drone is automated, bringing it to the fore when the mix is less occupied by other instruments.



**4** > The orchestral sounds come courtesy of the Garritan Personal Orchestra library, which Sabre plays back via an EXS24. Having no formal musical training, Sabre programs these string parts by trial and error, until he gets the desired effect. To achieve a more natural result, Sabre avoids quantising these parts.



**5** > Solo string parts sound artificial and MIDI-like on their own, so Sabre builds up ensembles. Some of these parts have long attack and release times, helping to create a flowing effect. At the track's densest section, there are four or five strings parts, two or three channels of brass and a lower pad sound - this last fills out the bottom-end of the mix.



**6** > According to Sabre, many of the patches in the Garritan library have excessive resonant peaks, so he uses Logic's Channel EQ to identify and attenuate them. While removing these can lead to artifacts and an unnatural sound, taming the peaks can help the parts sit better, making them easier to mix.



## ACOUSTIC EXCELLENCE

**While many DnB producers operate in relatively lo-fi spaces, Sabre has gone to a lot of trouble to ensure that his studio sounds as good as possible.**

"If you're going to spend £1200 on a pair of speakers, you're never going to get the best out of them if you put them in a painted square bedroom in a new-build," he explains. "I was dissatisfied with some of my previous listening environments - this kit has been set up in the edge of bedrooms, in other purpose-built studio rooms, but it's never really quite sounded right. The room I have at the

moment is actually a room within a room. The floor is up about 5cm, the ceiling down about 10cm and the walls in about 10cm. I've also got baffles: one on the ceiling, two behind the speakers, one for reflection on the back wall and two on the walls for side reflections. The windows are 6mm, and the door is double padded with two insulation strips to make sure that it seals hard, because that's probably the weakest point. This is partially to make it sound better, but also to make sure that I'm not annoying my neighbours, or the people that live in this house along with me."

**Working out where to put all of this must have been a challenge...**

"Some people will go into a room and put up acoustic proofing across the entire thing - which may not be necessary - or not put enough up. It's about putting the right amount up, with the right density in the right places. When it came to all of that, there are people I could call on - Audio Tactics label owner Survival has been great at this kind of stuff for years, and there are other producers that know how to work out what I need and where to place it."

"The plastering and electrics

were done by builders, but in terms of putting the boards up, and getting the double glazing and tables set up, I did that myself. One of the main disadvantages of a room like this, if you're ever thinking about building something like this, is ventilation: If you completely seal a room off, you're stopping air getting in. So if you can afford it, consider some kind of air con - I wish I'd spent £200 to have a unit fitted outside, because it would have made it a much more pleasant environment to be in. But yeah, no regrets, as hot as it is in here, it's a brilliant situation to be in!"

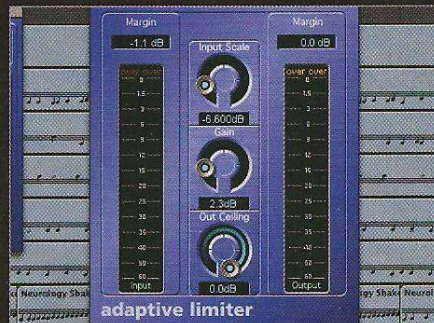
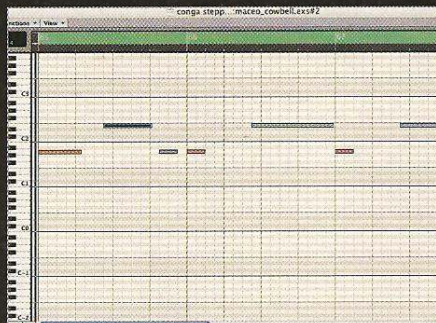
## >Step by step Making the bass and beats for *Leaf*



**1 >** To get a cohesive bass sound, Sabre recommends using a single source sound split over multiple channels. The original bass sample from his techy roller *Leaf* is a bloated, saturated synth. To create the sub for the track, this sound is sampled and low-pass filtered in an EXS24, the cutoff frequency of which is modulated by an LFO.

**2 >** As well as the sub, two other versions of this sound are used, both with added processing: a mid-range part, and a higher one. These are exactly the same as the sub part to begin with, right down to LFO and filter settings, until Sabre pumps them both through Multipressor, Guitar Amp Pro, Fat EQ, and CamelPhat 3.

**3 >** The mid-range and top-end parts have different settings. Here we can see that the top part has the **Treble** control on Guitar Amp Pro whacked up full, to create a dirty high-end noise. The mid part's CamelPhat plug-in is bypassed for most of the tune, but it becomes active at certain points in the track, to provide a different feel when required.



**4 >** To create the beats for *Leaf*, Sabre starts out with a jungle-sounding breakbeat REX file, which is loaded into an EXS24 and rearranged. It's also pitched up 5 semitones, which emphasises the glitchy quality of the original beat. This does a good job of providing energy in the 5-10kHz range.

**5 >** The track uses two different kick drums - a main one that plays at the start of the bar, and a secondary one (with a much shorter decay) that plays mid-way through the bar. The snare is a rim-shot with the bottom end EQ'd out: "The pace of a beat gets pulled down by a big snare, and you get a much funkier sound with a little rim as your snare," explains Sabre.

**6 >** Next, Sabre adds some more drum sounds, including another break - see the video on the DVD for more details. He then sends all of the drum tracks to a dedicated drums bus, where he applies Logic's Silver Compressor and Adaptive Limiter plug-ins. These stop the drums from peaking too high, and help glue all of the individual sounds together.



# 20 years of drum 'n' bass

Our pick of classic tracks that any aspiring DnB producer should have on their list of essential reference material



**The Black Dog – *Virtual* (1989)**

*Virtual* was one of the first records to combine breakbeats, techno synths and big basslines in a recognisably DnB-like fashion. What's more, it still sounds fresh today.



**The Scientist – *The Exorcist* (1990)**

An early darkside jungle tune, *The Exorcist* combines a collision of funky hip-hop beats with sinister horror samples and a sprinkling of rave-style synths.



**Son'z Of A Loop Da Loop Era – *Far Out* (1991)**

*Far Out* is a pure slice of piano-fuelled fun that fuses the then-emerging jungle sound with more euphoric elements.



**Liquid – *Liquid is Liquid* (1992)**

Foreshadowing the sounds of atmospheric drum 'n' bass, this cinematic, dub-influenced roller was well ahead of its time.



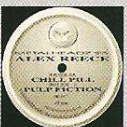
**Omni Trio – *Renegade Snares* (1993)**

A rave anthem to this day, Omni Trio's masterpiece showed the musical possibilities of drum 'n' bass, as well as the potential for audacious drum edits.



**LTJ Bukem – *Horizons* (1994)**

This breakbeat classic took the mellower side of DnB to new heights, combining chilled chords and hypnotic riffs with crispy beats and epic 808 hits.



**Alex Reece – *Pulp Fiction* (1995)**

A true game-changing moment for DnB, *Pulp Fiction* boldly moved the focus away from the chopped breaks of jungle to the funky sound of two-step.



**Ed Rush – *Skylab* (1996)**

Ragga jungle's dominance gave way to the bleak, gritty sounds of tech-step, focusing on fills and edits more than polyrhythmic madness, as this minimal masterpiece perfectly illustrates.



**E-Z Rollers – *Retro (Guardians of Dalliance remix)* (1997)**

*Retro*'s catchy chords and brilliant vocal sample make it a timeless and accessible DnB classic, and one of the Moving Shadow label's finest moments.



**Ram Trilogy – *No Reality* (1998)**

The Ram Trilogy series of 12"s took tech-step by the horns and injected it with faster beats and bouncier, more twisted basslines.



**Bad Company – *The Pulse* (1999)**

Bad Company utterly dominated the DnB scene at the turn of the century, and this classic release on Grooverider's Prototype label sums up their sound to a tee.



**John B – *Up All Night* (2000)**

The iconoclastic John B brought the rave back to drum 'n' bass with this tribute to the chipmunk vocal-fuelled sound of breakbeat hardcore's early 90s heyday.



**J Majik vs Hatiras – *Spaced Invader* (2001)**

Fusing house and DnB, J Majik's filter-tastic take on *Spaced Invader* pumps up the energy levels to previously unimaginable levels.



**Adam F and J Majik – *Metrosound* (2002)**

*Metrosound* combines Adam F's *Metropolis* and J Majik's *Your Sound* into a cacophony of tearing synth lines and rolling breaks.



**Pendulum – *Spiral* (2003)**

Before they got their rock on, Pendulum were dab hands at the trance-tinged DnB sound. This euphoric vocal anthem was their first release and a real corker.



**High Contrast – *Twilight's Last Gleaming* (2004)**

In this old-school-R&B-influenced epic, the Welsh wonder cleverly fuses a soulful vocal and filtered David Shire samples. A classic Hospital release.



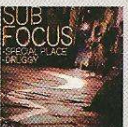
**Clipz – *Slippery Slopes* (2005)**

This notorious chav-stepper from the Bristolian legend is dancefloor dynamite, and love it or hate it, you can't help but admire its brazen basslines and rolling beats.



**Noisia & Mayhem – *Moonway Renegade* (2006)**

The ultimate combination of kung-fu samples, slamming beats and gnarled bass, *Moonway Renegade* is glitchy DnB at its most intense.



**Sub Focus – *Druggy* (2007)**

Sub Focus is a true master of big beats and basslines, and here he combines them with a catchy percussive hook and electronica-esque breakdown, to create a dancefloor monster.



**Icicle – *Spartan* (2008)**

A moody, minimal roller, *Spartan*'s back to basics approach to DnB brings the beats and basslines to the fore, supplementing them with dubbed-out vocals and Amen edits.



> on the disc / dvd contents

> Full contents of your 7.9GB Dual Layer disc

# cmDVD

PC MAC

The amazing DrumCore 3 CM, over 2000 DnB samples, the latest reader demos, minimal magician Nathan Fake on video and more!

## DVD contents Full software

### Full software

Submersible Music DrumCore 3 CM (Mac/PC)

Robin Holmes Macaw (PC)

### Demo software

Modartt Pianoteq 3 (Mac/PC)

Topten Software Cantabile (PC)

ISM BazzISM (Mac/PC)

FabFilter Timeless 2 (Mac/PC)

Arturia miniMoog V 2 (Mac/PC)

### Tutorial files

Focus

Guitar Lab

Meta-Recording In Live

Synth Essentials

Q&A

Off The Dial

The Balancing Act

Totally Trackers

### Samples

2025 24-Bit cm DnB Samples

### Reader Music

Le Roi Et Le Garçon - *Moi Spooky Agenda - Curled Up In A Ball*

LIC Production - *Shaker*  
Vinny Piana - *Our Luck Tonight*

## SUBMERSIBLE MUSIC DRUMCORE 3 CM (MAC/PC)

DrumCore 3 CM is the largest piece of software *Computer Music* has ever given away. Weighing in at a hefty 1.8GB, this plug-in drum module comes packed with professionally recorded loops in both audio and audio-triggering MIDI formats, along with three complete virtual drum and percussion kits. It makes adding pro-quality drum parts to your tracks an absolute breeze, whether you want to program your own or have them 'played' for you. Turn to our the step-by-step tutorial on p40 to find out more.

### System requirements

**PC** 1GHz CPU, 2GB RAM, Windows XP/Vista, RTAS/VST host

**Mac** 1GHz CPU, 2GB RAM, OS X 10.4, AU/RTAS/VST host

**Web** [submersiblemusic.com](http://submersiblemusic.com)



With audio and MIDI loops played by two of the tightest drummers in the business, DrumCore 3 CM gives you everything you need to produce perfect drum tracks

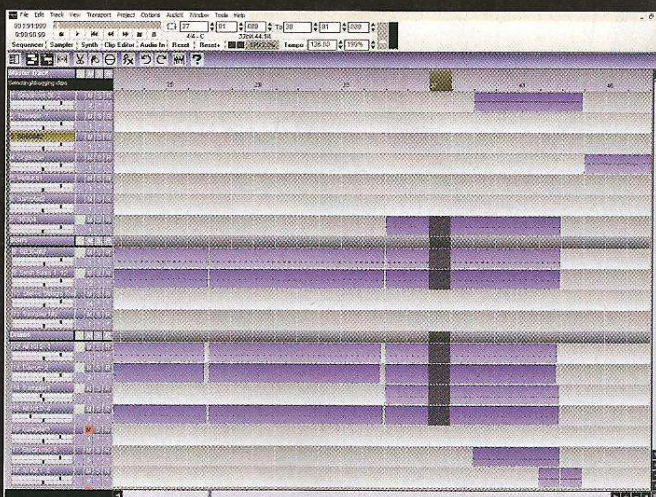
## ROBIN HOLMES MACAW (PC)

An open source DAW complete with audio editing and modular VST routing. Several VST effects and instruments are included, too, which are well worth checking out in their own right. For an interview with Macaw developer Robin Holmes, head to *Freeware News* on p18.

### System requirements

**PC** 500Mhz processor, 128MB RAM, Windows XP/Vista

**Web** [code.google.com/p/macaw/](http://code.google.com/p/macaw/)



The flexible DAW, Macaw, comes with various nifty VST plug-ins included



## Demo software

### MODARTT PIANOTEQ 3 (MAC/PC)

Modartt's piano plug-in uses physical modelling rather than an obscene number of samples to create its sounds, and this latest version introduces some exciting new features, including a new acoustic model that enables you to place up to five microphones anywhere around the piano. With the demo version, eight of the notes are disabled and it will quit after each 20-minute session.

#### System requirements

**PC** Windows XP/Vista, VST/DirectX host

**Mac** Mac OS X 10.5, AU/VST host

**Web** [www.pianoteq.com](http://www.pianoteq.com)

### TOPTEN SOFTWARE CANTABLE 2

(PC)

This VST host has just reached version 2, and we've got demos of all its various incarnations, including Cantabile Solo and Performer in both 32 and 64-bit versions. These demos will cease to work after their 30-day evaluation period.

#### System requirements

**PC** 1GHz CPU, 512MB RAM, Windows XP/Vista

**Web** [www.cantabilesoftware.com](http://www.cantabilesoftware.com)

### ISM BAZZISM2 (MAC/PC)

A plug-in dedicated to creating the most powerful kick drum sounds imaginable, BazzISM2 produces meaty low-end thumps that can be easily tweaked to your exact specifications. The demo version constantly emits an irritating high-frequency noise that can only be removed by registering.

#### System requirements

**PC** VST host

**Mac** Mac OS X 10.4, AU/VST host

**Web** [www.ismism.de](http://www.ismism.de)

### FABFILTER TIMELESS 2 (MAC/PC)

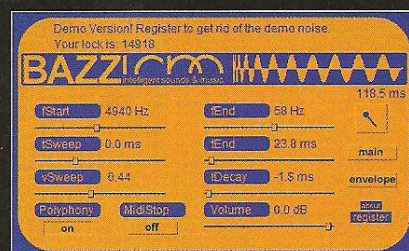
Updated with FabFilter's slick version 2 interface, two delay lines, two multimode filters, a freeze buffer option and mid/side processing, Timeless 2 is a truly state-of-the-art delay effect. This trial version runs for a 30-day evaluation period, after which it will cease to function.

#### System requirements

**PC** SSE-capable processor, Windows 98,



Prepare to lose hours experimenting with the awesome modulation capabilities of FabFilter's Timeless 2



Give your tracks some low-end grunt with the BazzISM kick drum plug-in



Arturia have updated the fantastic minimoog V, and we can't recommend giving the demo a try highly enough

RTAS/VST host.

**Mac** G4 processor, Mac OS X 10.3,

AU/RTAS/VST host.

**Web** [www.fabfilter.com](http://www.fabfilter.com)

### ARTURIA MINIMOOG V 2 (MAC/PC)

The latest version of Arturia's excellent Minimoog emulation enhances the experience

with its Sound MAP patch browser, vocal filter and built-in automation abilities. The demo version will function for 15 days before expiring.

#### System requirements

**PC** 2GHz processor, 512MB RAM, RTAS/VST host or standalone

**Mac** 2GHz processor, 512MB RAM, AU/RTAS/VST host or standalone

**Web** [www.arturia.com](http://www.arturia.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.



> make music now / drumcore 3 cm

> Exclusive full software! **PC** **MAC**

# DrumCore 3 CM



We've pulled out all the stops in bringing you this amazing virtual drummer plug-in, including nearly 2GB of loops and samples. Here's how it works...

> Submersible Music's DrumCore 3 CM is a 1.8GB, all-in-one solution for your drum programming needs, featuring loops and fills played by top stickmen Gary Thompson (Dave Stewart, Everclear) and John Tempesta (Testament, White Zombie). The plug-in will automatically stretch these loops

to fit your project tempo, and loops can be dragged straight from the interface onto audio tracks in your DAW, enabling quick and easy drum part creation. You can even export REX files directly.

The software also features MIDI drum parts recorded by the aforementioned drummers, for triggering the three built-in virtual

drum kits. You can then edit these parts to get your desired feel, or even program beats from scratch.

DrumCore 3 CM takes minutes to get the hang of and gives you an easy and fun way to generate professional sounding drum tracks for a variety of genres. Here we'll show you how to install the software, audition loops and drop

them into your projects, export REX files and use the drum kits.

**cm** readers buying the download version of DrumCore 3 ([www.submersiblemusic.com](http://www.submersiblemusic.com)) before October 30 can use the code **FREEZOROPACK-CM** to get a free ZoroPack 1 DrummerPack, worth \$79. Now, that's something you can shake a stick at! **cm**

**MIDI DRUM KIT**  
Select which virtual drum kit the MIDI input triggers here

**FILTERS**  
Used to filter the available drum sounds by format and type

**SCREEN MODE**  
For swapping between DrumCore 3 CM's various screens

**VIEW**  
Select whether categories are displayed by drummer or style

**CATEGORIES**  
Select your drummer or style here

**WAVEFORM DISPLAY**  
Also used to drag audio into your DAW

**PLAY MODE**  
Play back audio and queue up different loops

**GABRIELIZE**  
For randomising the order of the audio and MIDI drum loops

**SHOW**  
Used to filter drum loop results by groove

**LOOPS**  
Displays the available audio and MIDI in your selected category

**DYNAMICS**  
Home to the LiveDrummer dynamics control and volume level faders

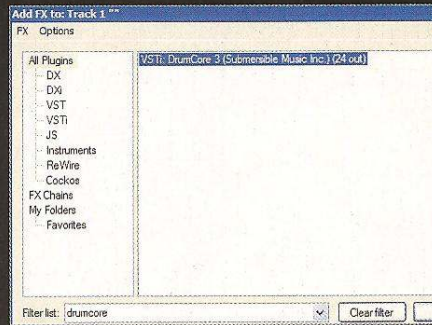
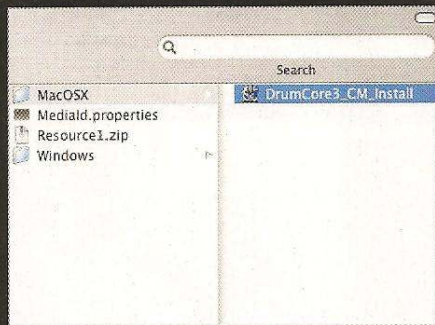
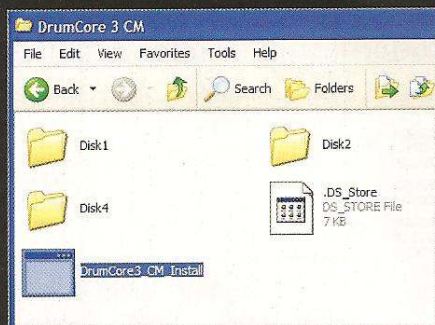
The screenshot shows the DrumCore 3 CM interface with the following elements:

- Header:** Gary GT Thompson w/Ldwg Sparkle Kit, DRUMCORE COMPUTER music.
- Tabs:** MIDI DrumKit, GT Ldwg Sparkle RP 101, Grooves, Drums, Percussion, Settings.
- Left Panel (VIEW):** Drummers, Styles. Under Drummers: All, Basic Beats GT, Rock Pop 101, John Tempesta 2, Song Beats, Urban GT HH Classics, HipHop Classics 1-4, User Packs.
- Center Panel (MODE):** Audio, MIDI, Loops, Fills, Hits. Under Loops: GT IRP A 01-04, GT IRP A Rd 01-03, GT IRP A Slsh 01-03, GT IRP B 01-05, GT IRP B Rd 01-03, GT IRP B Slsh 01-03.
- Right Panel:** 120 GT IRP A 01, Feel: Straight 8ths, Meter: 4/4, Tempo: 119.87 bpm, Duration: 2 bars. Host: 120 bpm, Queue Play, Play, Gabrielize, Show: All, Dynamics (LiveDrummer, VU Meter, Volume).



## > Step by step

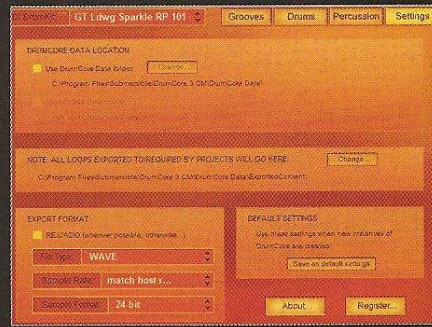
### Installing DrumCore 3 CM and getting into the basics



**1** > You can find the installation files in the folder **Software/DrumCore 3 CM** on the **cm** DVD. If you have trouble with the installation procedure, we recommend copying the DrumCore 3 CM folder onto your hard drive. To install the PC version of the software, simply double-click the **DrumCore3\_CM\_Install** application.

**2** > To install the Mac version, open the **Disk1\InstData\MacOSX** folder and double-click the **DrumCore3\_CM\_Install** icon. Follow the installer's instructions, and when you're done, run your host software. We're going to use Reaper, which you can find in the **Software/PC Software/Library** or **Software/Mac Software/Library** folders on the DVD.

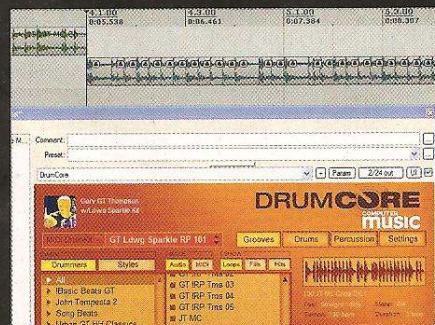
**3** > Create a new track and load up the DrumCore 3 CM instrument plug-in by selecting **Track>Insert New Track** and clicking the **FX** button on the track that appears. Enter **DrumCore** into the **Filter List** field and double-click the **DrumCore 3** plug-in that appears. A registration screen will pop up that must be completed before you can use DrumCore 3 CM.



**4** > Don't worry if your computer isn't online - you can still use the software. Start by clicking the **Play** button on the instrument's interface. Playback of the currently selected beat will begin at the your host's tempo - change this and note that the playback increases or decreases in speed.

**5** > To audition different drum parts, simply click them in the **Loops** menu. To show all of the available loops, select **All** in the **Category** menu. Once you've found a loop that you particularly like, you can drag the waveform display on the right-hand side of the interface onto a track in your host software.

**6** > DrumCore 3 CM will automatically stretch the audio to fit your project tempo, but it's also possible to export REX2 files. To do this, hit the **Settings** button at the top-right of the interface and select the **REX/ACID (whenever possible, otherwise...)** option in the **Export Format** panel. Click the **Grooves** button to return to the main page again.



**7** > If you export the loop now, by dragging the waveform onto a new track, DrumCore 3 CM will export a REX2 file, if one is available. If your DAW supports REX2 files, as Reaper does, you can change the tempo of the project and the drum loop will always follow it.

**8** > Delete any audio you've exported, and bring up DrumCore 3 CM's interface again. Above the **Loops** menu, you'll see three buttons labelled **Show**. Currently only **Loops** are selected. If you click **Fills**, the menu will also display these, so that you can audition them, too. By combining different loop and fill variations, you can create a complete drum track.

#### POWER TIP

#### >Get Queued up

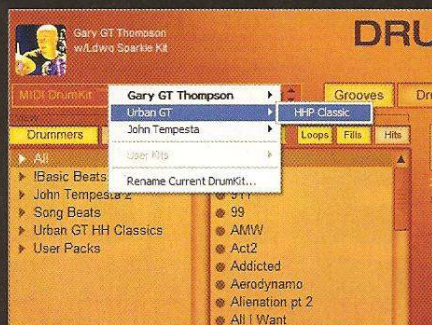
When auditioning beats, one of your primary concerns should be how your various parts are going to sound when played sequentially. A handy tool for auditioning parts in DrumCore 3 CM is the Queue Play mode, activated by clicking the button of the same name. When active, you can select a second loop to audition, which will play after the currently selected loop has finished. This is particularly useful when searching for a fill that will work straight after your main drum loop.



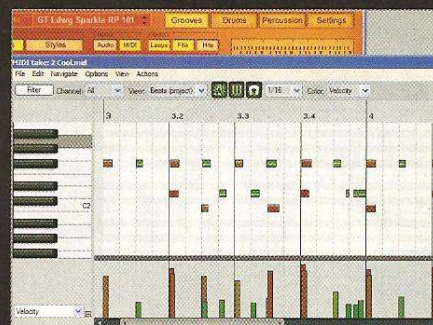
## > Step by step DrumCore 3 CM's advanced features



**1** > As well as its superb pre-recorded audio loops, DrumCore 3 CM also offers a sizeable library of single hit sounds, triggered via MIDI. Delete the audio you've dropped into your project already and change the **Mode** selector above the Loop menu from **Audio** to **MIDI**. Note that the waveform display on the right changes to a MIDI sequence.



**2** > You can audition the various MIDI loops by clicking them, just as you did with the audio loops. Try changing the kit used to play back the drum pattern by clicking the **MIDI DrumKit** button at the top left-hand corner of the interface. There are three kits to choose from, each with its own individual sound.



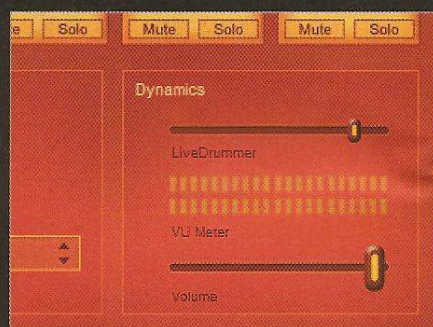
**3** > To export the MIDI pattern to your project, drag the MIDI sequence display onto the track containing the DrumCore 3 CM instrument. If you like, you can edit the MIDI part to make changes to the rhythm. In this mode, DrumCore 3 CM works much like any other MIDI-triggered drum machine.



**4** > Indeed, it's possible to customise each drum and percussion sound. Click the **Drums** button on the top right-hand side of the interface and a selection of pads will appear - hit one and its parameters will be displayed in the bottom left-hand corner of the interface. Here you can change the pitch, volume and pan settings.



**5** > It's also possible to route drum sounds to different outputs, by activating the **Assignable Outputs** button at the bottom centre of the display. DrumCore 3 CM has a main stereo out, seven auxiliary stereo outs and eight mono outs. Refer to your host's documentation for instructions on how to set up extra mixer tracks for a single instrument.



**6** > Note that the **LiveDrummer** slider in the panel at the bottom right-hand corner of the interface can be adjusted to reduce or increase the amount of dynamic variation in the MIDI playback. The **Volume** control works just as you'd expect, attenuating the output of the instrument as a whole.

### POWER TIP

#### > Making beats from scratch

DrumCore 3 CM includes MIDI beats played by world-class drummers, but also makes it readily possible to program your own beats from scratch. To use the instrument as a straight-up drum machine, load it onto a track and select the kit that you want to hear with the **MIDI DrumKit** button. Now simply create a MIDI part from scratch on the DrumCore 3 CM track. To get a more predictable sound, turn the **LiveDrummer** fader all the way down.



**7** > Return to the **Grooves** page. If you'd like to introduce some variety to the supplied beats, look no further than the **Gabrielize** function. This slices up both audio and MIDI loops at random to create interesting new rhythms. Just click the button until you come up with a variation that you're happy with.



**8** > The **Gabrielize** function has four levels of undo that are accessed via the **History** buttons above the main **Gabrielize** button. This makes it easy to quickly create a selection of random variations that can then be dragged into your sequencer. These can be wiped using the **Clear** button just above them.

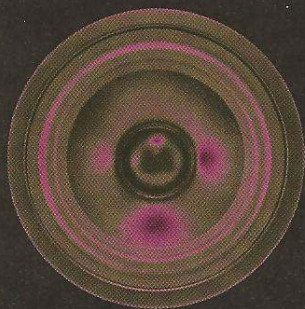


&gt;Royalty-free, pro-quality sounds!

# 2025 samples

PC MAC

It's our massive 2009 DnB blowout! Throw our 24-bit sounds into your sample library and watch some of the genre's finest in action



## 2025 24-bit drum 'n' bass sounds

This month's samples, produced exclusively for **cm** by Hattrix, constitute the ultimate set of DnB building blocks. Beats-wise there are 34 hi-hats, 74 kicks, 85 snares and 34 percussion hits, all tweaked to give the beefiest sound possible. On the synth front we've got 22 tearing lead and bass multisample sets, created and processed using classic analogue gear. Everything's provided in both CMplay and WAV formats, so you can load them into CMplay (in the **CM Studio** folder), map them in your sampler of choice, or just drop them straight onto audio tracks.



## Sample and video playback

**cm** videos are presented in MOV format, which means that you have to have 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. This is an open-source media player that can handle pretty much any format you can throw at it, and 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 Windows Media Player. For the latest version, go to: [www.videolan.org](http://www.videolan.org)

## All-star DnB video tutorials

Some of the scene's biggest names guide you through their production techniques

Artist **Alix Perez**

Shogun Audio's master of minimal beats rolls out a dubsteppy, DnB rinse-out, using percussion recorded in his studio and a variety of samples created with his Access Virus TI Polar, all manipulated in Logic Pro.

Artists **Cyantific**

The prodigious Hospital pair love a bit of mid-90s Dillinja, so they pay tribute with their work-in-progress track *Transmission*, a dark, bassy monster that showcases 21st century tricks with a nod to the old-skool.

Artist **Sabre**

Not content with showing us how to get the best out of Garritan Personal Orchestra and

create techy beats and basses, the master of chilled grooves waxes lyrical on some of his favourite vinyl sample sources, and lets slip some precious crate-digging tips.

Artist **Shimon**

The AudioPorn head honcho gets his grime on, making disgusting bass noises in Camel Audio Alchemy, then talking workflow and creating a beat from scratch with the help of CamelPhat 3, Cubase 5 and Iced Audio's Audio Finder. Warning: features explicit scenes of beat-slicing and LFO tweaking!

Artists **Xample & Lomax**

Bristolian duo Xample & Lomax know a thing or two about putting beats together, and here they demonstrate how to build a track from the ground up, using Logic and a selection of plug-ins, including Rob Papen Albino 3, reFX Vanguard and NI Massive.

## Producer Masterclass Video

Artist **Nathan Fake**

We went to Hackney to bring you this two-part video with Boarder Community's Nathan Fake. In Part 1, the master of nu-gaze and minimal beats shows us how he created the lead track from his *Hard Islands* mini-LP, *The Turtle*. In Part 2, he makes a track from scratch, calling on his unusual jamming technique and some trusty hardware.

Web [www.nathanfake.co.uk](http://www.nathanfake.co.uk)



### HAVING PROBLEMS?

In the unlikely event that you have trouble with your disc, send an email to [support@futurenet.co.uk](mailto: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, CMU142/September/09, Bath BA1 2BW. Include your full name and postal address, too!



# cm STUDIO

Our ever-expanding suite of exclusive applications, virtual instruments and plug-in effects for Mac and PC!

## APPLICATIONS

**XT Software energyXT2.5 Core CM (PC/Mac/Linux)**  
VST host and sequencer with modular routing

**Outsim SynthMaker CM (PC)**  
Create your own VST synths and effects

**MuTools CMusic (PC/Mac)**  
VST-compatible audio and MIDI sequencer

**i3 DSP-Quattro CM (PPC Mac)**  
Powerful Mac audio editor and plug-in host

## INSTRUMENTS

**Sugar Bytes Artillery2 CM Edition (PC)**  
Multi-FX with internal sequencer

**Ummet Ozcan Genesis CM (PC)**  
Another amazing virtual analogue synth



**Muon CMplay (PC/Mac)**  
Powerful ROMpler instrument

**Dominator (PC)**  
Virtual analogue synth with a classic feature set

**u-he ZebraCM (PC/Mac)**  
Amazing virtual analogue synth

**LinPlug AlphaCM (PC/Mac)**  
Subtractive synth with ring and amp modulation

**Homegrown Sounds Astralis CM (PC)**  
Modulation-heavy 'soundscape' synth



**Homegrown Sounds Astralis Orgone CM (PC)**  
Flexible sample-based synth

**XT Software EnergyCM (PC/PPC Mac)**  
Step sequencing analogue-style synth

## This month, be sure to try...



### FabFilter One CM 2.01

This synth might not be packed with esoteric options or crazy features, but it delivers a beautiful tone and sports a superb-sounding filter that will melt the heart of even the most ardent analogue aficionado. Offering envelope and LFO modulation, plus a choice of analogue-style waveshapes, portamento and pulse width modulation, this simple synth is full of character. If you're after tasty basses, expressive leads or psychedelic synth effects, FabFilter One CM is a fun and useful tool.

**Fabfilter One 2.01 (PC)**  
Beautiful-sounding single-oscillator synth

**Kotkas Paax 3 CM (PC)**  
Feature-packed soft sampler

**Odo Synths Unknown 64 CM (PC)**  
C64 SID chip-emulating VSTi

**Krakli CMorg (PC)**  
Vintage organ instrument

**AlgoMusic ElectraBass Rack CM (PC)**  
Easy to use bass synth that's packed with presets

**Humanoid Sound Systems Scanned Synth CM (PC)**  
Create abstract noises and haunting instruments

**Muon CM-101 (PC/PPC Mac)**  
Analogue-style VST synth

**Muon SR-202 (PC/PPC Mac)**  
16-pad VST drum machine

**Muon CM-303 (PC/PPC Mac)**  
Emulation of the classic Roland TB-303 synth

**Muon DS-404 (PC/PPC Mac)**  
Powerful 16-part multi-timbral VST sampler

**Muon CM-505 (PC/PPC Mac)**  
Analogue drum synthesis made easy

## EFFECTS

**KeyToSound Dynamic EQ (PC/Mac)**  
Innovative dynamic equalisation plug-in

**Acustica Audio Nebula3 CM (PC)**  
Incredible vintage-kit-sampling multi-FX

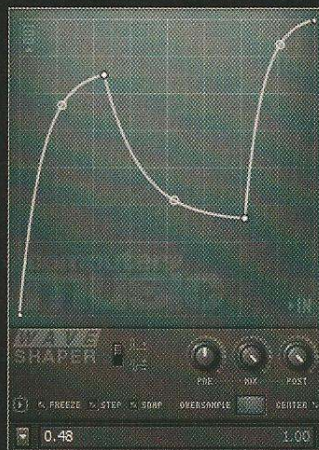
**Image-Line CM Vocoder (PC)**  
Special cm version of FL Studio's FL Vocoder

**Aixcoustic Creations Electri-Q CM (PC)**  
Sweet-sounding and flexible equalisation

**Martin Eastwood CompressiveCM (PC/Mac)**  
Compressor/limiter with sidechain input

**Audio Damage Pulse Modulator (PC/Mac)**  
Wild, stomptbox-esque modulation effect

**Betabugz Vascillator (PC)**  
Semi-modular feedback delay multi-effect



**Image-Line CM WaveShaper (PC)**  
Flexible wave distortion effect

**PSP Springverb (PC/PPC Mac)**  
Authentic VST spring reverb effect

**SimulAnalog Guitar Suite CM (PC)**  
Plug-ins modelled on classic guitar effects and amps

**Ohm Force Ohmygod! (PC/Mac)**  
Crazy resonant/comb VST filter

**Camel Audio CMFuzz (PC/PPC Mac)**  
Quick and dirty distortion



# cm Studio session

## Dirty acid

PC MAC



We show you how to recreate the famous squelch and squeal of the legendary Roland TB-303, using two of the **cm Studio's** filthiest plug-ins

> In this month's **cm Studio Session**, we're going to take a look at how easy it is to create an authentic, distorted acid sound, using nothing more than the software in the **CM Studio** folder on the DVD.

The acid innovators of the 80s used the Roland TB-303 synth to get their distinctive squelchy bass

and lead tones, as popularised by dance anthems like Phuture's *Acid Trax* and Hardfloor's *Hardtrance Acperience 1*. However, the TB-303 is a fiddly beast to program and doesn't even feature a MIDI input, making it hard to incorporate into a home studio setup.

Computer Music's own CM-303 is a far more user-friendly

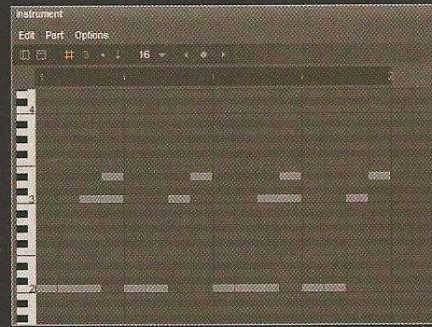
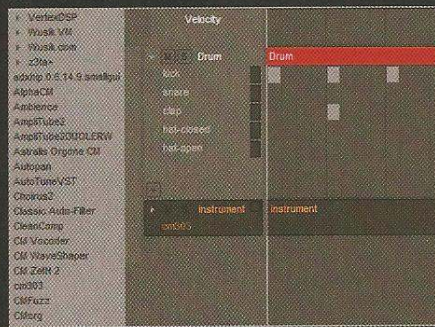
proposition, and offers a number of advantages over Roland's seminal box. Rather than being dependent on a very simplistic step sequencer, as the TB-303 was, CM-303 is triggered by your DAW's MIDI sequencer, enabling finer control of the start and end points of notes, and making it easier to create glide sequences. This removes the need

to switch between patterns when creating longer sequences, too.

It's also a doddle to apply extra processing in software - in this case via CMFuzz, a distortion effect included in the **CM Studio**. Intel Mac users should note that neither CM-303 or CMFuzz are Universal Binary, and so are only compatible with PPC Macs. **cm**

### > Step by step

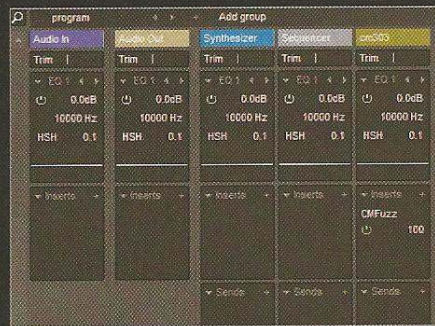
#### Creating the signature acid sound



**1** > Launch your host DAW - we're using energyXT2.5 Core CM, which you can find in the **CM Studio**. Select the **Drum & bass** project and click **OK** to begin. Copy the drum pattern we've used here: simply double-click the appropriate spaces in the grid to create notes. This gives us a basic beat to work with.

**2** > Open energyXT's plug-in menu (see the tutorials in the **CM Studio Tutorials** folder, if you're not sure how to set this up), then drag the **cm303** plug-in onto the sequencer. This will automatically create a new track. Double-click the area below the drum beat to insert a new MIDI part.

**3** > Double-click the MIDI part to bring up the grid editor, and copy the pattern we've used. Be aware that, wherever notes overlap, the synth 'glides' between them. The speed of this transition is controlled with the CM-303's **Glide** knob, accessed by first clicking the label **cm303** on the instrument track.



**4** > Getting a squelchy sound from CM-303 is as simple as turning down the **Cutoff** dial, and turning up the **Resonance** and **Envelope** knobs, just as we've done here. The last controls the movement of the filter cutoff after the start of each note, the timing of which can be controlled with the **Decay** knob.

**5** > We can change our sound from the flaccid tone that our synth is currently outputting to something more hardcore with an overdrive effect. Click the **Mixer** button to bring up energyXT's mixer, then drag **CMFuzz** onto CM-303's Inserts slot. Click **CMFuzz** in the mixer to bring up the effect's interface.

**6** > Use CMFuzz's Patch menu to select the **American HiGain** setting, which radically changes our sound. Adjust the parameters of the 303 to tailor your dirty acid bass - note that we've selected the square wave, rather than the sawtooth, with the knob at the bottom left-hand corner of the interface.



# Reader music

Four industrious readers hold their work up for scrutiny by our resident production experts



## Send us your music

If you want the chance to be featured in *Reader Music*, send us an original composition on CD, a description of your act, an image (sleeve art, photo or logo that you own the copyright to), and your equipment list. And - this is very important - make sure no copyright samples have been used! The best tracks we receive each month will be reviewed and featured on the **cm DVD**. What are you waiting for?

Fill in the form below and send it, with your track and any additional info you'd like to include, to:

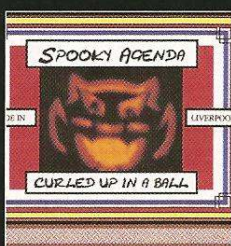
**Computer Music,  
Reader Music,  
30 Monmouth Street,  
Bath BA1 2BW, UK**

### Rules:

1. Send no more than two tracks.
2. Please send the music on CD.
3. The audio and any MIDI files used must all be original and/or royalty and copyright-free

## SPOOKY AGENDA Curled Up In A Ball

**Artist** Steve Jones  
**Contact** [www.spookyagenda.co.uk](http://www.spookyagenda.co.uk)



> As intros go, this is up there with some of the best of them. Just like the Le Roi Et Le Garçon track over the page, this conjures up the quirk of The Eels. Funny that... we've never had anything like them before and, all of a sudden, two turn up at once. It's the understated distorted vocal that does it here. We're not sure that the heavy

kick is necessary - perhaps it could be quieter? In fact, it's really loud throughout.

Other than that, the impact of the track as it comes out of the intro works very well indeed - apart from the rotten tom fills - plus the soft palette of acoustic guitar and electric piano sympathises with the temperature of the vocal delivery. The introduction of solo string and quartet sounds also fit most perfectly. You can't help question the stabbing guitars, though, because although they work, it sounds like the track is about to launch into Spandau Ballet's *True* - a truly worrying association.

There's a clarity problem at the low-end of the mix. A resonant frequency (either from the piano or organ bass) overtakes everything. All it needs is locating within an EQ spectrum analyser and notching out with a narrow Q. It shouldn't affect the overall luscious warmth of the track.

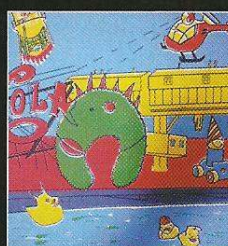
### What the artist says:

**"This track was co-written with my brother Mike, and was meant to be an old song revamped for the modern era. It's about never being noticed as you go about in your life. Based around a chord progression on the keyboard that we recorded on one day, I was left to put the finishing touches to it."**

**Equipment used** 64 X2 Dual-Core 3GHz PC, Steinberg Cubase Studio 5 and Groove Agent One, Virtual Guitarist, Spectrasonics Trilogy, AT2020 mic, various plug-ins

## LIC PRODUCTIONS Shaker

**Artist** Oliver Crawshaw  
**Contact** [www.myspace.com/olirics](http://www.myspace.com/olirics)



> Sounding very much like a modern take on Public Image Ltd, this dub-fest is carried by the Wobble-esque bassline, and though it might not quite have the overall passion of the aforementioned PIL, it sure has the John Lydon attitude and sneer in the strong Hindi vocal sample.

The sense of space in the track is excellent. The unhurried drum pattern is motored along by the top-end shakers, so that there's no clutter from additional percussion. The keyboard work is sparse and tastefully placed around the stereo field, so that your ears are continually on the move, tracking what's going on. The raw sound of the bass is good, but could perhaps be made heavier by notching out somewhere between 150 and 250Hz, then giving a narrow boost around 70 or 80Hz. The blips and other noises work well, although the nasty reverb on the guitar tires very quickly indeed.

The real let down of the whole piece, however, is the choice of synth sounds. On the whole, they're a bit soft and tame when compared to the rhythm and vocal, especially the skanking electric piano. Perhaps throwing them through some amp simulators or other distortion boxes would give them the edge they need to sit just right. Nevertheless, it's still a powerful track.

### What the artist says:

**"I started this track with the drum sample and bassline, then developed it from there. The chopped up vocal sample drew it all together. The guitar sound at the end, which I'm very pleased with, was created using the Moog Moogerfooger pedal."**

**Equipment used** Ableton Live, cm drum samples, Fender Squire bass, Gibson guitar, Moog Moogerfooger pedal, Ableton soft synths, various percussion instruments

Artist/band name:

Contact name:

Equipment used:

Address:

Phone number and email address:



## LE ROI ET LE GARÇON Moi

Artist Leroy Morton  
Contact [www.myspace.com/leroiyetlegarcon](http://www.myspace.com/leroiyetlegarcon)



> Much like Marmite, this is one of those things in life that you'll either love or hate - it would be impossible to be indifferent about this track. Stylistically speaking, it sits somewhere between 80s electro and kooky 90s Americana, like the sort of experiment Beck or The Eels might get into. Either way, we

love it here, for its infectious spirit and effortlessness.

The vocals make the piece, and considering the way they were put together (see below), their success comes as something of a surprise. A lot of it is in the lazy timing and delivery, as well as the nebulous delay and reverb treatments that alternate between the two vocal sections.

The other spectacular success is the two filter sequences, which are just as lazy as the vocals. The central one darts around the spectrum like an eel, while the lower bass one, panned left, purrs away like a cat.

This is a good lesson in not getting too anal. One's production instincts would be to tighten everything up into a strict grid, but that would ruin the 'thing' it has. It is what it is, which is an enchanting, dreamy piece of music, with very likeable flaws. Let it wash over you.

### What the artist says:

**"It started as an acoustic piece that was placed in Tab-it, with the lyrics in Babelfish, due to the fact that neither of us speak Dutch. I like the way another language can be substituted for an instrument, to add sounds that would not be found in a song in English."**

**Equipment used** HP PC, Sony Creative Software Acid 7, EnergyCM and other synths, cm plug-ins, Sony plug-ins, Classic plug-ins pack for mastering, Celemony Melodyne, Samson C03 mic, M-Audio Ozone controller

## Listening Lounge

[www.musicradar.com/forum](http://www.musicradar.com/forum)

Artist KBee  
Title Sundance  
Contact [drop.io/Sundance\\_Remix](mailto:drop.io/Sundance_Remix)



Oh, those old-skool conga patterns - don't you just love 'em? This is a summery, jazzy house number, with electric piano and brass moves that conjure up a balmy,

pre-club evening. It has a fine musicality that would appeal to a broad crowd, too.

You'll find a couple of mixes up there. The remix has been sped up and feels heavier, with a stomping kick drum. They're both cool and well worth a listen. The bass sound is a little bit 'straight out of the box' and could do with some TLC to take it away from demo territory, but other than that, the vibe is great.

  
musicradar.com  
The place for music makers

# What's wrong with my mix?

Veteran producer/engineer Mark Frith finds much to love in this month's featured track, despite a few arrangement issues...

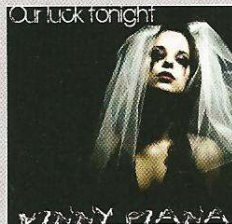
Producer/engineer Mark Frith



Definitely not the ex-editor of *Heat* magazine, Mark's studio experience stretches all the way back to the tender age of 14, when his band signed a major record deal. Since then, he's never left, working with the likes of Electric Soft Parade and Futureheads.

## VINNY PIANA Our Luck Tonight

Artist Vinny Piana  
Contact [www.vinnypiana.co.uk](http://www.vinnypiana.co.uk)



> This is one of those songs that seem familiar on first listen, though I can't have heard it before and it's not a cover, which either means that it's borrowed from familiar places or that Vinny is a genius songwriter. The opening verse sounds like an 80s Cure or Killing Joke song, but who knows which. It sounds like a genuine record, which is a rare compliment for any demo.

After a couple of listens, I realise that the arrangement is the Achilles' heel. Each section in isolation is decent, but they don't seem to knit together to form a whole. And from section to section, I don't know whether I'm in a verse, bridge or chorus. The only time I know my place is the middle eight, and the only sections that marry together well are the 'Ah' part and the big guitar bit after it. But then the 'Ah' section feels more like a middle eight to me, in this context, although it appears two or three times and constitutes the outro. It's very confusing!

The instrumentation comes from the classic line-up of drums, bass and guitars, with keyboards sprinkled on top. It's hard to tell, these days, if it's a real drummer or a virtual one. If it's the latter, it's realistically programmed, if it's the former, which has my money, it's very tightly played! I do like the high synth work in the outro that ties in with the stabbing eighth guitars and the octave synth in one of the other sections. The backing vocal arrangements are another high point. The bass is solid, too, although there are some crimes that might alert the note police in the outro.

The mix is almost great. I think the drums are suffering compared to everything else. They're there one moment, then they're gone. Grouping the drums as a whole through a heavy parallel compressor might bring the power and punch back, to maintain their presence. They also have that crunchy sound that comes from being over-plugged. The guitars and vocals, on the other hand, are great and sit very well throughout.

There's a confidence to this song, which appeals to me, and if it were to lead me through a natural arrangement, I'd be completely sold on it, but at the moment, it feels a little calculated. There's too much from the head and not enough from the heart, perhaps.

### What the artist says:

**"This track mixes modern sounds with the 80s new wave. I love songs where the chorus drops down, instead of 'exploding'. I'm glad it happened on this track. It came together very naturally. A cool bass groove was laid down and the rest followed."**

**Equipment used** P4 2.2GHz PC, Cakewalk Sonar 8, Fender bass and guitar, Native Instruments FM7, Cakewalk Dimension Pro, Audio Damage and Waves plug-ins



# cm Producer Masterclass

## Nathan Fake



The master of atmospheric minimal techno invites us to his Hackney studio to demonstrate his love of vintage software



Nathan Fake's sound has developed from ethereal dance to more straight-up crowd pleasers

> Signed to James Holden's eclectic Border Community label, Nathan Fake has made a name for himself as a master of minimal techno and ethereal electronica. Originally a resident of the unassuming Norfolk village of Necton, Nathan began experimenting with computer music at the age of 15. At 18, he embarked upon a HND in Music Technology at Reading College of Art & Design, though he dropped out a year later when his music career took off.

Nathan's first commercial release was the *Outhouse EP*. The main mix of the titular track was a dirty, tribal affair, though the *Fluffy Mix* hinted at Nathan's more abstract electronica influences. These were explored more fully on Nathan's 2006 long player debut, *Drowning in a Sea of Love*. A psychedelic epic, the album maintains a burning intensity,

despite straying through various different styles from trippy techno to atmospheric shoegaze.

For his new mini-album *Hard Islands*, Nathan has developed a more upfront, 'dancefloor' sound. We joined him in his Hackney studio to learn out about his production tricks, the inspiration behind his latest work, and his love of vintage music software.

Don't forget to check out the videos on the **cm** DVD, in which Nathan writes the foundations of a track on the spot, including some beats and synth hooks, using nothing more than an extremely long-in-the-tooth version of Cubase. He also demonstrates how he created *The Turtle* from *Hard Islands* in explicit detail. It's the maximum amount of minimal fun that could possibly be squeezed into a studio! **cm**

Web [www.nathanfake.co.uk](http://www.nathanfake.co.uk)

### Selected kit list

**HARDWARE**  
Windows XP PC  
M-Audio Delta 44  
Art Tube MP  
Spirit Folio Notepad  
2x Mission 701  
Nikko ND-300  
Roland SH-09  
Jomox XBase 09  
Boss DR-550 MkII  
Casio SA-20  
M-Audio Evolution UC33e  
Tandy microphone

**SOFTWARE**  
Steinberg Cubase VST 5  
Ableton Live 4  
Syntrillium Cool Edit Pro  
Stillwell Audio Olga  
Sam Chip32  
de la Mancha basic64  
Steinberg HALion  
Subtek LoFi Plus  
mda DubDelay  
dB ProComp

### Discography

#### SINGLES

*Outhouse* - Border Community (2003)  
*The Sky Was Pink*  
- Border Community (2004)  
*Watlington Street EP*  
- Saw Recordings (2004)  
*Dinamo* - Traum Schallplatten (2005)  
*Silent Night* - Border Community (2005)  
*Drowning In A Sea Of Remixes*  
- Border Community (2006)  
*You Are Here* (EP)  
- Border Community (2007)

#### ALBUMS

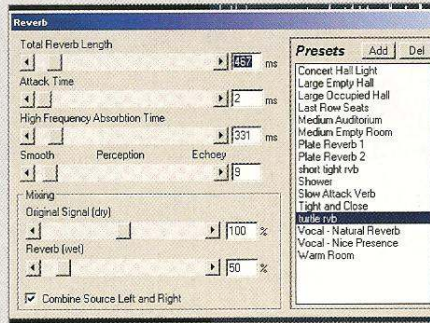
*Drowning In A Sea Of Love*  
- Border Community (2006)  
*Hard Islands* (mini-album)  
- Border Community (2009)

#### REMIXES

Remy, *Scrambled* - Additive (2004)  
Steve Lawler, *Out At Night*  
- Subversive (2004)  
Perc, *Closer* - Premier Sounds (2004)  
jack addicts, *Stalker*  
- Dirty Blue Records (2005)  
Tiefschwarz, *Issst* - Fine Records (2005)  
Vincent Oliver, *Cluods in the Haed*  
- LoAF (2008)

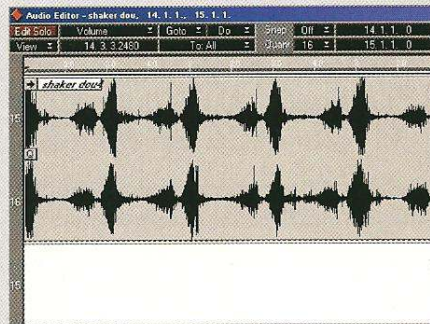
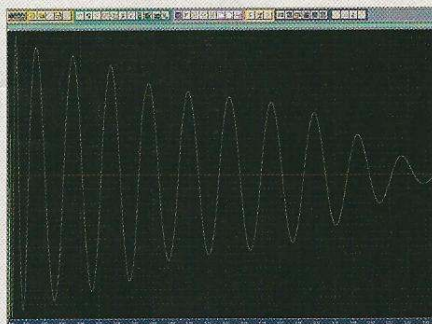


## > Step by step Making *The Turtle* in Cubase VST 5/Cool Edit Pro



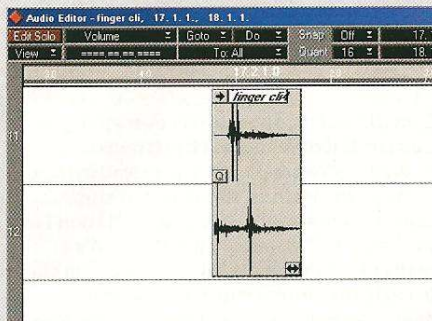
**1** > The main hook from *The Turtle* comes from the synth bassline. "I had this part bouncing around for a few years before I did anything with it," says Nathan. The hook is quantised tightly to 16th-notes and played back via Cubase's A1 synth, alongside a sawtooth oscillator and a triangle oscillator tuned an octave below.

**2** > To create the constantly evolving synth sound, Nathan records himself tweaking the A1 synth straight into Cool Edit Pro in real time, creating a long audio track. Cool Edit's **Reverb** is applied to give the part a wider stereo sound and added depth, then the audio is imported back into Cubase.



**3** > Nathan creates the main kick drum for the track using the synthesis functions in Cool Edit Pro – a sine wave is swept very quickly from high to low pitch, providing a very chunky drum sound. This is then loaded onto an audio track in Cubase.

**4** > The shaker part is particularly lo-fi, and was created by recording a salt-shaker. To make it sound nice and wide, though, it's double tracked, with one recording panned hard left and the other hard right.



**5** > Nathan records the finger clicks himself, straight into Cubase. Again, this sound is double-tracked and panned hard left and right to create a wider stereo image. Though Nathan's cheap Tandy mic is less than pro quality, running it through the Art Tube MP preamp adds some lovely distortion that brings out a lot of the high end.

### POWER TIP >Roll your own

As well as using his trusty A1 virtual instrument and Roland SH-09 analogue synth, Nathan sometimes uses the graphical plug-in authoring tool SynthEdit:

"It's like a really basic version of Max/MSP, and you can use it to make synth plug-ins and effects. Mainly I use pre-made synth plug-ins, but if I need a specific thing, I can build a really basic module. For instance, if I want to stack a load of oscillators, I can make a synth with six oscillators or something. If you're into using things like Reaktor or Buzz, it's quite good and you should be able to suss it out pretty easily."



Nathan maps the M-Audio Evolution UC33e to Ableton Live for his stage performances

## Going Live

As well as plying his trade in the studio, Nathan takes to the stage.

"The set is all done in Ableton Live on a laptop, and I use Cool Edit, too," explains Nathan. "With Cool Edit, you can open several instances, so I'll have maybe two or three Cool Edit loops playing. I don't actually sync it with Live – I'll play them loose, because I like to have a messy kind of live sound. I control Live with the M-Audio Evolution UC33e. In the live set I've got at the moment, I have something like 20 different A1 synths playing MIDI parts that I jam with and control using the MIDI controller, plus the drums are mainly audio parts."

How does the set work in terms of playing individual tracks?

"The Live set is mainly loops, which each constitute a separate track, I guess, but they're just loops of however many bars. I'll just jam that out for a few minutes at a time, for as long as it feels natural. That's how a lot of my tracks are made in the first place. I'm really into having it completely live. I also have delay effects or reverbs that I'll just chuck on the individual sounds. I use the built-in Live Reverb, because it's quick, but I also use other effects like Subtek LoFi Plus, which is a simple tape delay plug-in – it sounds really digital and harsh. The wave-shaper bit is really nice and kind of like frequency modulation – I love it. I control the delay feedback and time with the UC33e. It's a really raw, tempo-synced delay – you can make drum rolls with it, too."

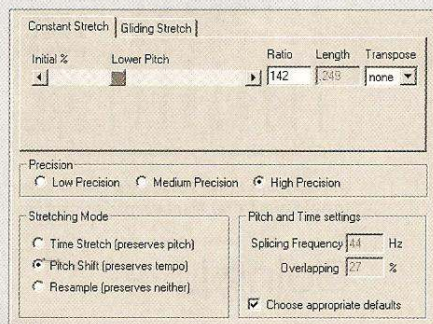
Does playing live influence how Nathan works in the studio?

"Yeah, definitely. When I first put together a live set, I was trying to transform studio tracks. I used to spend ages on arrangements in Cubase and it would end up sounding a bit too rigid. Now I'll record myself jamming an individual part, stick it in Cubase and comp the bits I like."

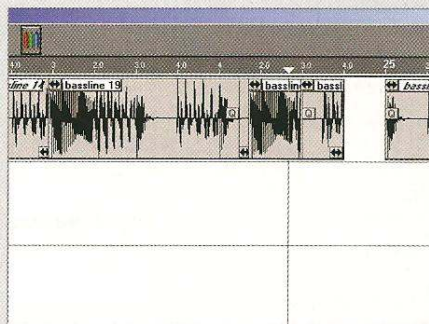
"A couple of the tracks on *Hard Islands* started out as live ideas – sometimes I make little loops to just chuck into a live set, and some of them actually grow into full live tracks or album tracks later on."



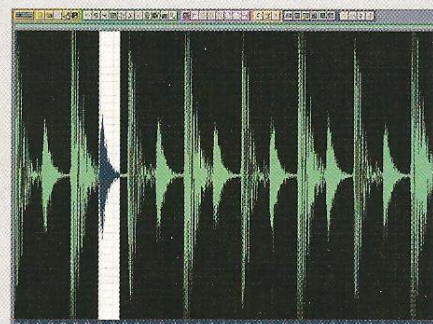
## > Step by step Making *The Turtle* in Cubase VST 5/Cool Edit Pro (continued)



**6** > Nathan brings the recorded shaker part down by an octave using Cool Edit's **Constant Stretch** algorithm. This creates an abstract, scratchy noise that provides an unusual half-bar interlude to slot alongside the original version.



**7** > During the intro, a small section of the bass part plays before the main line comes in properly. By having a different section play occasionally, variations are generated that sound like cut-up effects. The snare comes from a Casio SA-20 keyboard, specifically its Rock kit.



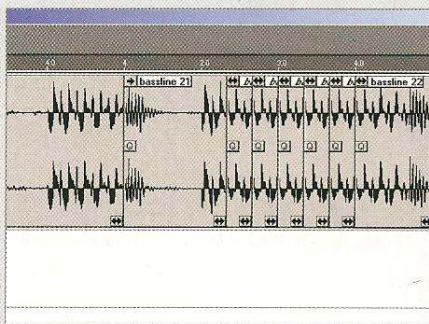
**8** > The hi-hat is sampled from a track by an anonymous rock band. It was sliced out from the break in Cool Edit, before being loaded into Cubase. Other percussion sounds come courtesy of the Boss DR-550 MkII drum machine, recorded into Cool Edit via the Art preamp and M-Audio interface.

### POWER TIP

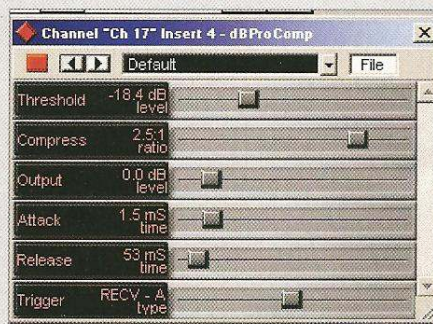
#### >Cassette boy

Nathan's love of the analogue sound isn't just limited to synths and tube preamps. Sometimes the wacky minimalist will resort to that most lo-fi of recording media, the humble cassette tape.

"You can do loads of really nice processing with tape, especially when it starts wobbling. I'll do saturation effects where I'll bend the tape a bit, so that it phases and stuff. You can try to emulate that with plug-ins, but you can't really get the same effect. Even soaking the tape in water... that's a kind of distortion that you can't really get with virtual effects."



**9** > The bass edits were created by hand on an audio track in Cubase, using 32nd-note rolls to generate glitchy effects. "I know that you can get plug-ins to do that for you, but I think that's a bit pointless and prefer to do them by hand. I guess most people do," muses Nathan.



**10** > To make the kick drum pump harder, it's routed to the sidechain input on the bass' compressor. This causes the bassline to dip in volume slightly every time the kick plays, enabling the latter to be heard more clearly and thus sound much louder.

## Fake it until you make it

Despite his cutting edge sound, Nathan isn't one to update to the latest software just for the sake of it.

"I still use Cubase VST 5, which I got when I was 15," admits Nathan. "I realise that it's quite limited, and looks really crap and old-skool, but I'm really comfortable with it, and I don't really have to think too much when I'm making music with it. I use other bits of software occasionally, including an old version of Ableton Live, but it's still loads more advanced than Cubase VST 5."

There are plenty of bits of vintage hardware, as well as software, lying around the studio, and Nathan will create many of his sounds on this kit.

"I like to run everything through the Roland SH-09, because it has an external input and you can run stuff through the

envelope follower. As well as filtering the input, the envelope follower triggers the amplitude envelope, so that you can create some nice sounds using the drum machine and the synth together. I like the step sequencer on the Jomox drum machine, too, and get it to play notes on the Roland and create riffs. The sound it produces is great, especially when I run it through the Art Tube MP preamp - I put both the synth and drum machines through it.

"The Jomox is halfway between a 909 and an 808 - really punchy but long. I don't trigger it with MIDI, but sample sounds into Cool Edit, which I use for recording all my audio. I have everything running through the preamp that goes into the soundcard. Quite often, I'll just record myself jamming for ages, then cut stuff up and put it into Cubase.

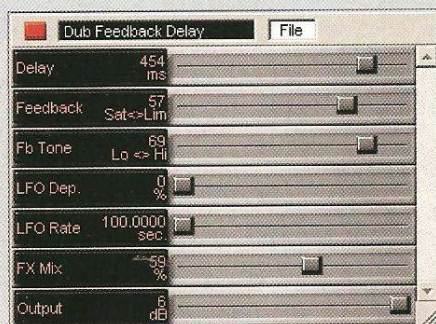
Sometimes I'll do absolutely everything in Cubase, but other times I'll just jam stuff out."

What software plug-ins does Nathan use?

"I use the Waldorf A1 for a lot of stuff, especially bass and lead sounds - if I don't use the Roland, I'll generally use the A1. It's a really nice synth and very versatile - I'm still using it after four years. It can be a bit digital-sounding sometimes, but if you know what you're doing, you can get some really warm tones out of it. Sometimes people will ask me about the analogue gear I've used on a certain track, and it'll be something I've done entirely in A1.

"I occasionally use this Chip32 synth, which I really like. It's a basic monosynth plug-in, but you can shape the waveform by drawing. It can be a bit raw, but you can get some really great sounds out of it, especially

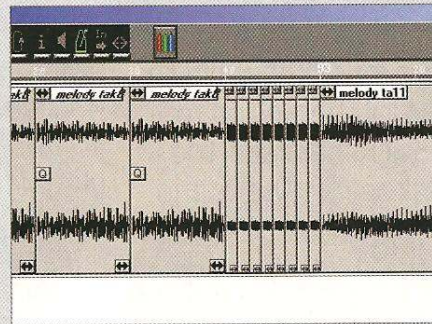




**11** > Later in the track, there's a break in which delay is applied to the bass part. Nathan uses mda DubDelay here, which is tweaked in real time to create some weird phasing effects that give the track a very psychedelic feel.



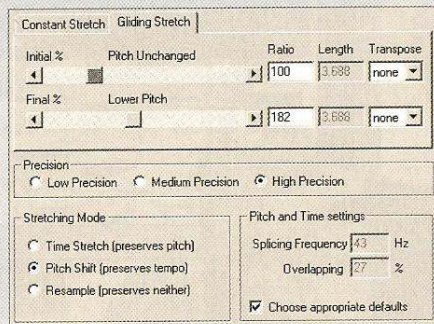
**12** > After this, another synth line is introduced, constructed with chords played on Cubase's A1. This patch uses the synth's noise generator and a sawtooth wave to create a lo-fi lead sound.



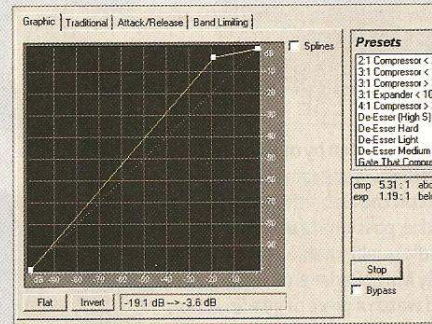
**13** > The A1 sound is again recorded into Cool Edit, with Nathan tweaking the octave tuning knobs in real time to create crazy pitch-bending effects. Very quick edits are also performed on the audio to create further glitchy effects.



**14** > By running the A1 chords through Cubase's WunderVerb3 effect with a long decay time, Nathan makes the huge pad in the track. This generates a massive ambient texture, which is looped to create a bed that's also sidechain-compressed to make it pump with the kick drum.



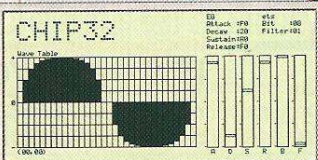
**15** > The sliding ride cymbal pitch-bend effect is created using the **Gliding Stretch** algorithm in Cool Edit. This enables Nathan to specify start and end pitches for the sample, thus lowering the overall pitch of the ride cymbal without changing the length of the sound.



**16** > When the track is done, Nathan has a simple approach to mastering: "I bounce it straight out of Cubase. After that, I'll EQ it or compress it a bit in Cool Edit, just to phatten it up, or if it sounds a bit too spiky, I'll take some of the high-end off. Also, I quite often use the compressor or limiter plug-ins in Cubase on the master."



Nathan's favourite software instruments include basic64 (above), Chip32 (right) and Olga (far right)



leads. It's similar to a Game Boy. I also have the Olga synth, too, but my computer can't really run it very well, so I use it more on my laptop than my desktop. It's modelled on an old Russian analogue synth. basic64 is like an Commodore sound chip, which I used a few years ago when I was into more bleepy stuff. I also use the HALion plug-in quite a lot. I've put my voice on a few tracks spread up and down the keyboard.

"In terms of effects, I'll use a lot of built-in Cubase plug-ins, like the reverb, delay and compression. I use the latter loads - for sidechaining stuff I use dB Pro Comp. I don't do much EQing at all in Cubase, but I'll use the channel EQ if I want to cut the bass out or do some basic editing. I don't do much sound design in Cubase - I tend to do everything in Cool Edit instead - although I'll make drum sounds in Cool Edit or on the synth. I'm into

using really dry sounds actually - I don't edit stuff that much. On the one hand, I guess Cubase VST 5 doesn't offer much in the way of sound editing. I just enjoy doing it in Cool Edit, because you can really dissect stuff, take little bits out, then do loads of funny things with the results. I like the pitch envelope, too, and I'll record myself jamming with that kind of thing a lot, to create edits that I'll bang into a track somewhere."





# The balancing act

We show you how to choose and use the right elements to give your tracks that professional solidity, power and weight

**> As you build an arrangement within your DAW, how do you decide which elements to include? Is it instinct? Is it a response to the other parts you've included already? Or is it predetermined by the type of music that you're looking to make? If you're in a four-piece rock 'n' roll band, you might adhere to the latter principle, whereas if you're a seasoned producer, an inkling for what works well will be shaped primarily by things that you've tried before. That, after all, is how an engineer would derive their list of 'go to' gear - tools they know will practically guarantee great results.**

However, the fact that you're reading this magazine implies that you have a desire to

improve your skills, which also suggests that certain areas of your production work could be better - and you're right, we all need to improve with each and every piece we work on. So in this feature we're going to focus on some common track-building practices within a range of musical styles, looking at examples of successful and less successful approaches to putting a composite production together.

We'll consider how professional producers bring in just the right combination of track elements to make their choruses jump out so impressively, and we'll discuss whether this kind of mix enlargement is best achieved through instrumentation or by thinking more carefully about tools like EQ and compression. We'll also

show you how to remedy mixes that may have been clouded by having too many common frequencies playing at once, and, on a similar tip, how it's possible to clarify a mix by simply changing the notes used in chords.

What will become clear, however, is that the very best productions manage to balance all aspects of a mix to create a super-charged, musical hyper-reality - a studio result that surpasses much of what would ever be possible in a live performance scenario. All of this starts with the sound and layering choices that you make when first putting a track together, so read on, as we reveal some track-building tactics and flag up potential pitfalls that could blight even the most promising mixes-in-progress.



## How do they do it?!

Everyone's got a favourite pop record. Even if it's not the music you choose to listen to regularly, don't pretend that there isn't a Girls Aloud/Lady Gaga/Beyoncé record that you're secretly fond of and to which, in the right circumstances, you've been known to throw some shapes. The reason that slick pop productions perfectly demonstrate the first point we need to make is that they're designed to press your buttons.

Pop records offer a perfectly constructed three and a half minutes of entertainment that lifts you up and down at just the right moments, provides an unexpected twist, wows you with a well-constructed breakdown, or simply drags you kicking and screaming to the dancefloor. The concoction can be that irresistible.

Of course, we producers know that the reason this puppet show is so convincing is that those pulling the strings behind the scenes know exactly what will sustain a listener's interest, and which elements will ramp a mix up, whether it's subtly or explosively. It's tempting to think that this is easy with pop records, and that you can make the chorus exciting by piling on loads more instruments, but it's usually not that simple. You might find that momentum is sustained through a verse simply by the addition of a small element like a tambourine, while a chorus can drop out as many instruments as it brings in.

Take a listen to Katy Perry's recent monster hit *I Kissed A Girl*, and listen to the transition between the verses and the chorus - what actually happens? You'd think that this is where the guitars would come smashing in and all hell would break loose, but instead, the arrangement actually simplifies. Granted, the lead vocal switches from one voice to many, providing a multi-tracked army of vocal parts, which increases the power. Similarly, a new synth bass comes in and pedals away, playing the same note on beats 1, 2, 3 and 4 of each and every bar. However, the pads and guitars drop out altogether and, undeniably, there's actually less clutter here than there is in the verse. It's brave



Strong, powerful vocalists, such as Katy Perry, need equally strong, powerful instruments to back them

and unusual but highly effective.

Of course, in pop music, the decisions you make as to which sounds to use and when to use them are likely to come from the lead vocal. If you're working on a ballad and you want the vocal to sound soft and vulnerable, don't drown it out. Similarly, if you're writing Katy Perry-esque stuff, make sure that, if you're lucky enough to have tracked down such a strong singer, you do her justice by supporting the performance with strong sounds.

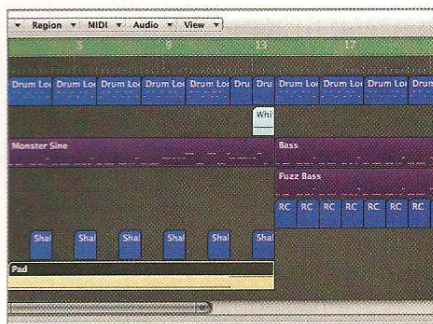
A great example of another recent smash single with bold and brave production is Beyoncé's *Single Ladies*. It's brave because,

despite the obvious brilliance of Beyoncé's voice, it's still a big decision to create a track that rests so completely upon her vocal abilities. It's also brave because, for a dance record, it's very rare to have a bassline that's made of fat slabs of legato synth notes rather than something 'bouncier' and, lastly, one of its main hooks sounds like a kind of mad guiro - a stretchy little synth siren that's surely best described as the musical equivalent of an exclamation mark.

In the walkthrough below, we've written a verse backing track, with three possible chorus equivalents. Which do you think works best?

### > Step by step

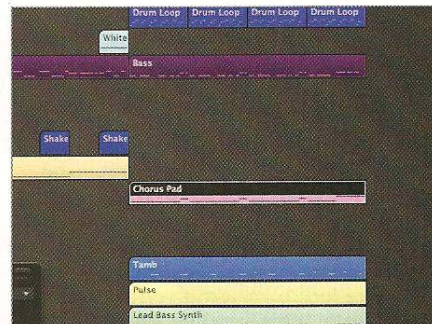
#### Three verse-to-chorus possibilities



**1** > We start by creating our 'verse', which will be common to all three steps. This comprises a drum loop, a sine wave bassline, a pad and a shaker. In our first 'chorus', we double the bassline with a stronger synth lead, add a ride cymbal and take out the pad and shaker. (Audio on the DVD: **Verse to Chorus 1.wav**)



**2** > Now we look to emphasise the slightly Latin flavour of our track. Our new chorus introduces a busy acoustic guitar lick and congas. We duplicate the drum loop onto a separate track and put it through a bit-crusher effect, so that our core sounds are really toughened up. (Audio: **Verse to Chorus 2.wav**)



**3** > Here we keep the pad going, but switch its patch to something bolder, and double it with a resonant, sweeping synth bassline. We also add tambourines and a 16th-note synth pulse. It's now far too busy, to say nothing of the fact that our track still has to accommodate a vocal. (Audio: **Verse to Chorus 3.wav**)



# Power up!

Why do some tracks sound more powerful than others? Well, for a start, power is a subjective word. For some people, it means raw guitar riffs like those favoured by AC/DC or Metallica, while for others, it's a word used to describe a phat Armand van Helden bassline. Whatever music you think is best described using that word, we can surely all at least agree on the fact that any track lacking sonic weight or depth (or something approaching 'power'), will struggle to get past first base with its potential fans.

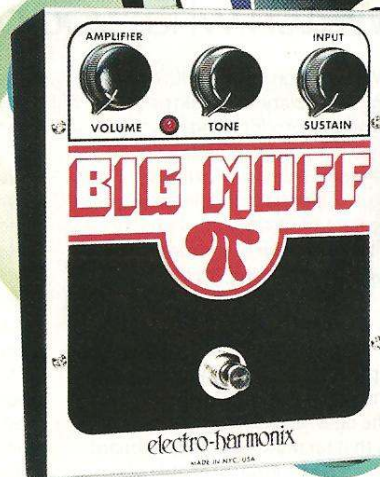
It's tempting to think that power is best created by just making 'more' of everything in the mix at

the time you need it, so your drummer (or programmed drum parts) will play louder or switch sounds at moments when required. Similarly, a guitarist might stomp on a high-gain distortion pedal at the same given moment, or if your music is of a more electronic bent, you might automate the filter cutoff on your synths to provide a much richer slab of sound than you had there before.

The truth is that any or all of the techniques could work, but it doesn't necessarily follow that using all of them at the same time will have the intended effect. Often, extra power comes from really simple things, like making sure that

all of the instruments in your track begin to play along exactly the same rhythmic lines, rather than wildly different ones. Equally, you might find that you get more power by stripping notes out of chords, rather than adding fistfuls of new ones.

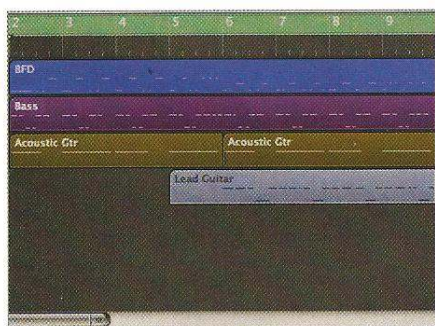
In the following walkthrough, we've mocked up a 'band' sound, using various virtual instruments. We've started with a transition from a quieter section of our track to a more powerful one, except that the power rating isn't as high as it might be. Find out how we fixed it...



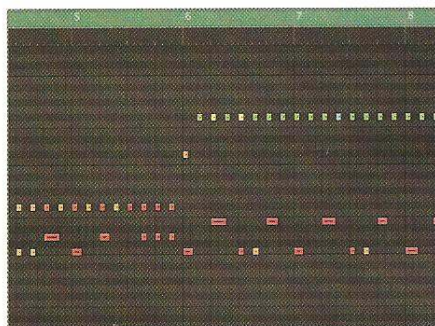
Guitarists might stomp on a distortion unit for added power in the chorus section of a song

## > Step by step

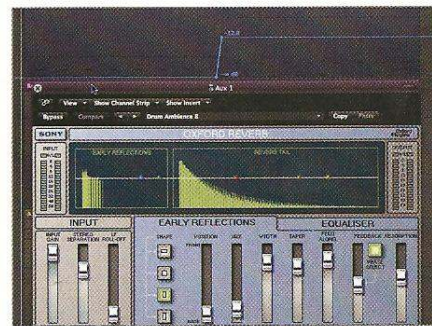
### Adding power



- 1 > We put together a basic 'rock' arrangement using virtual instruments. In this first clip, you can hear our eight-bar section constructed from BFD (drums), ManyBass (electric bass), RealGuitar 2L (acoustic guitar) and RealStrat (electric guitar). When the lead guitar comes in, the track should lift off, but right now, it's a bit of a wash-out. (Audio on the DVD: **Adding Power 1.wav**)



- 2 > The first thing we tackle is the drum programming. When the track kicks off, the drums really need to pave the way, so we switch the hi-hat over to a ride cymbal at the crucial moment. We change the snare drum sound, too, so that there's more weight to the drum sound. (Audio: **Adding Power 2.wav**)



- 3 > The next step is to get the drums to fill out in the second half, and we do this by setting up an ambient reverb (Sony's Oxford Reverb) on auxiliary bus 1. At the right moment, this opens up via an automated send level increase, giving the drums a greater sense of space. (Audio: **Adding Power 3.wav**)



- 4 > The bass is the next instrument to be 'pimped up'. We bounce the original version to audio, then re-open ManyBass' interface and switch its **Amp Sim** over to **Tube**. This gives our bass a warmer, fuller sound. We bounce this version, too, and simply switch from one to the other as the lead guitar kicks in. (Audio: **Adding Power 4.wav**)



- 5 > The next step is a subtle one. As the mix kicks off, its power is partly neutralised by the fact that the two guitars are competing for space, so we pan the acoustic one out to the left and let the lead have more freedom on the right. (Audio: **Adding Power 5.wav**)



- 6 > Lastly our lead guitar sound from Guitar Rig 3 needs some work. Its internal delay and reverb settings swamp the mix, so we back these off, dial in some extra **Middle** on the Ultrasonic amp and add a Logic EQ to give further bite to the top-end. Now our track kicks much harder. (Audio: **Adding Power 6.wav**)



## Watch what you play

We all rely on a certain level of musical ability to enable us to program, produce and mix the music we make. Whether you're a seasoned pianist who finds playing virtuoso parts a doddle, or you prefer to use step-time entry, or you slow down of the metronome whilst sequencing, it's quite possible to get the results you want with a little practice and patience.

Ironically, however, it's often the approach taken by those with less instrumental proficiency that yields the best results. The reason for this is that technically gifted keyboard players are often incapable of limiting themselves to either a single note or a more repetitive

phrase, as their musical training suggests ambitious chord moves, phrase transitions and voice leading, which often all result in track layers packed with notes.

Once you've played in a full piano part and a pad section, containing at least five notes per chord (spread across left and right hands), you're not far off filling up the frequency spectrum. What's more, there'll be little room left for the vocal! If playing the parts in real time is beyond your ability, you'll need to apply a little thought to which notes you're going to use, and then whether all the notes you input are actually required.

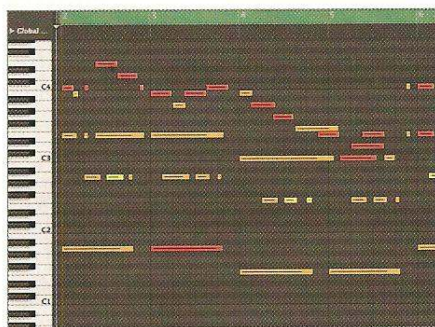
As ever, good ideas can only

reveal themselves if they're not drowned out, so always be mindful of how busy the mix is becoming. We're going to explore this idea in terms of mixing and EQ on the next page, but first let's address the root of the problem and see how to thin out a too-hectic arrangement by concentrating on the notes used.

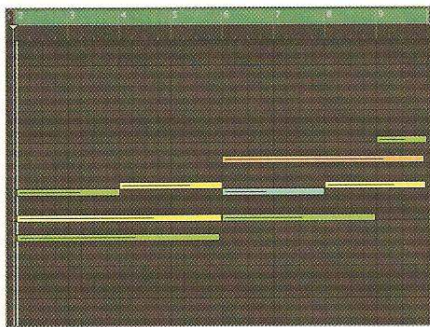
Whether you can play the piano or not doesn't matter when it comes to sequencing your parts



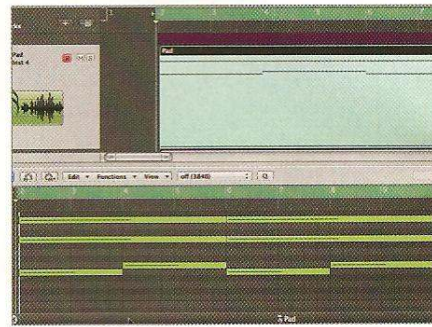
### > Step by step Too much music!



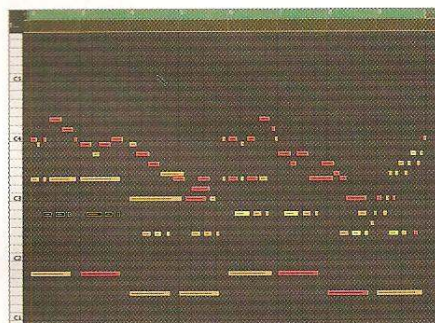
**1** > We've put an arrangement together to demonstrate how musical ideas can get lost in a busy track. While there are only five elements playing, there's lots of competition here, as both the pad and piano parts contain too many notes. As a result, the mix is a bit of a soup. (Audio on the disc: **Too Much Music 1.wav**)



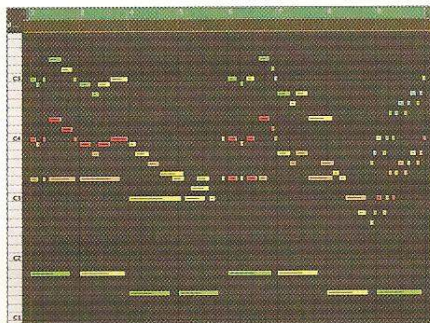
**2** > Let's start with the pad. This has been written to rise throughout the entire phrase and features an octave 'bass' on the left hand, as well as three notes per chord on the right. However, this isn't the lead instrument, so all these notes really do is clutter the mix. (Audio: **Too Much Music 2.wav**)



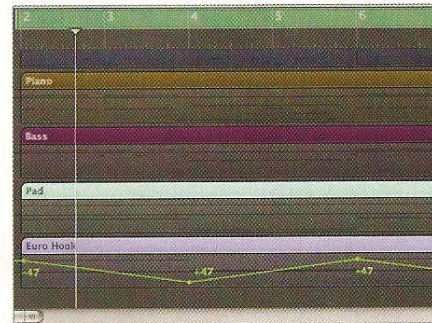
**3** > The pad is harmonic support for the piano and nothing more, so we strip out the left-hand part altogether and keep the right-hand part playing three notes only per chord, without the rise. We also make all the velocities the same, so that none of the notes stick out too much. (Audio: **Too Much Music 3.wav**)



**4** > Now let's turn our attention to the piano - here it is in its original form. There are some pleasing moments in there, but once again, the melody line is lost in amongst the morass of surrounding notes. (Audio: **Too Much Music 4.wav**)



**5** > Rather than take notes out, we look to dynamically and musically 'widen' the piano part. For the more melodic phrases, we double the lead notes by duplicating them an octave up. However, we strip out one part from the left hand completely, turn the lower one down and decrease the velocities for any non-melodic parts. (Audio: **Too Much Music 5.wav**)



**6** > Here's the revised mix. The pad sits better in the mid-range, the piano has more room to lead, and the sweeping synth has been turned down, with its pan position automated back and forth to provide additional room. Fewer notes and a better balance give this mix more clarity. (Audio: **Too Much Music 6.wav**)



# Is less really more?

It's always worth bearing in mind that a mix only has a finite amount of space. In other words, there's going to come a time when adding more noises and frequencies simply isn't going to work, because they won't be heard or cut through. Taken to ridiculous extremes, if you piled on track upon track of frequency-rich content, you'd ultimately end up with something approaching white noise!

Obviously, no producer would let a problem develop that far, but we're willing to bet that at some stage, you'll have noticed elements within your 'busier' productions simply getting lost under the weight of so many rival tracks.

Rather than concentrating on the notes as we did on the previous page, try to start thinking about the mix space as a 'frequency frame', with bass to the left and treble to the right. Whenever you add a sound to your mix, one part of that frame is used up. If you add another, contrasting sound, a different part of the frame is used up, but it shouldn't overlap or conflict too much with the first part. However, if you start to add more elements, there's less room for each one. The important question is what can you do about mixes that over-fill the frame?

The temptation for producers is always to make sounds smaller,

"The fewer elements your track has, the bigger each can be. The more sounds you have, the more you'll need to shrink them to fit"

using EQ and volume to chip away at the problem areas where parts of the frequency frame are too congested, by stripping unwanted frequencies from 'less important' sounds. As a tactic, it's tried and tested, but for some reason, many producers don't question whether a sound is actually required, rather

than finding a way to make it smaller. So, as a rule of thumb, the fewer elements that your track has, the bigger each one can be; the more sounds you have, the more time you need to spend making each one shrink to fit. You can see what we mean in the following walkthrough.

## > Step by step

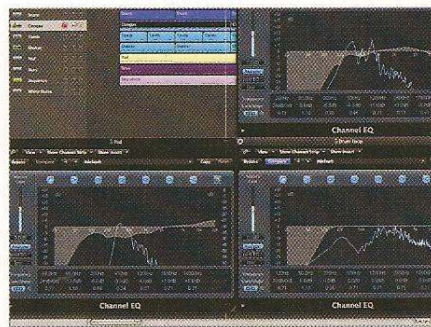
### Fitting it all together



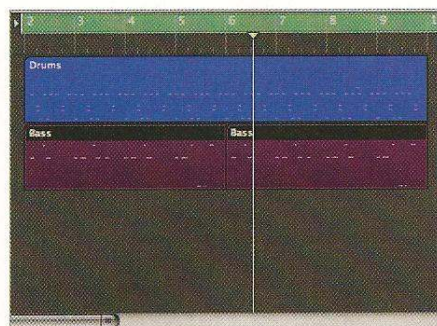
**1** > We start with a busy arrangement. It has a drum loop, separate hits for kick and snare, percussion, a thick pad, a subby bassline, a bright synth sequence and a white noise effect at the end. We leave everything as it was programmed, paying little attention to the mix detail, and the result is a mess. (Audio on the DVD: **Making Things Fit 1.wav**)



**2** > We first reduce ourselves to working with volume levels and panning alone to fix the major problems. We take the pad and elements of the percussion down in volume, and pan the latter to push them out to the sides of the stereo panorama, creating more space in the centre. The mix is still overwhelmed, though! (Audio: **Making Things Fit 2.wav**)



**3** > We thin things further with different EQ treatments - liberally scooping the bass from the pad, congas and drum loop, and adding some treble to the pad. We also compress this last part, sidechain it to the kick drum and automate the filter **Cutoff** in Stylus RMX, getting it much more 'out of the way' than before. (Audio: **Making Things Fit 3.wav**)



**4** > Here, we start from the opposite extreme, with just a programmed drum groove and a phat bassline. Again, no time is spent mixing - these elements have just been thrown together for now. However, there's clearly tons of space into which we can 'upscale' these sounds. (Audio: **Making Things Fit 4.wav**)



**5** > The beats need to be phatter. We can achieve this mostly inside Battery 3, where we adjust levels and apply internal effects - the kick is bit-crushed, and we EQ the hats and snare/clap. We compress and limit the master output, too, and employ Abbey Road's TG12414 EQ to scoop some of the nasty mid-range from the mix. (Audio: **Making Things Fit 5.wav**)



**6** > We make the bass bigger, too, using Logic's Channel EQ and Compressor, and increase the amount of **Distortion** in Kontakt 3's effects section. We dial in some extra treble to get more growl, too, which is possible this time because there's so much space in the mix. (Audio: **Making Things Fit 6.wav**)



# Arrangement- and mix-balancing tips

## MIX ANALYSIS!

Here's yet another reason to listen to your favourite tracks not just for enjoyment but as research, too. Particularly listen to the transitions between the sections of a track to hear which instruments come in/drop out, or to see whether effects levels noticeably change. There are hundreds of ways to quickly shift a mix up through the gears, or drop it back down to a lower level, so start compiling your own list of tricks from your favourite producers and tracks. Try them out yourself - do they work in your music?

## PERCUSSION

If you make dance music or R&B and you like to fill your rhythm parts out with percussion, ask yourself whether there's really space for your conga, bongo, shaker, tambourine, triangle and other assorted percussion instruments. If they're all playing at once, your track's going to be overly busy, so be ruthless about their inclusion and spread them out in terms of arrangement, as well as thinking about their placement in the stereo panorama.

## STRING ARRANGING

A string section is typically made up of four separate 'sections' (violins 1, violins 2, violas and cellos), or five if you include double basses. The players in each of these sections all play the same notes, so if you write four notes per chord, you'll end up with something that sounds more authentic and might take up less space than pad-like or overly complex chords.

## TOO MANY KICKS?

A common mistake that rookie producers tend to make is layering two or more bass drums for extra 'power'. This can occasionally work, but often you'll get phase-cancelling mush with less clarity and power than a single, well-chosen kick might provide. Look for one killer sound, not several weaker ones.

## EFFECTS PART 1: DELAY

Do you know what a delay tap is? That's right, an echo. So basically, it's a copy or repeat of a



Percussion is an important element in many styles, but too much of it can cloud a mix

part already in your mix. And if that echo appears whilst the instrument that created it is still playing, you've suddenly got a doubled signal. Be aware that over-use of delays can seriously clutter your mix, and try not to drown out too many elements with high feedback settings.

## EFFECTS PART 2: REVERB

This can also be a tricky area to get right. When producers want to thicken sounds, they occasionally turn to reverb, but don't fall into the deadly 1980s trap of adding an unnecessary cloud of noise to your mixes by getting reverb-heavy. Once again, remember that reverberant sounds take up more space and make your overall mix less defined.

## BACKING VOCALS

If you're using backing vocals, remember that they can quickly become like pads, particularly if you stack up multi-layered harmonic parts and record several takes of each. You'll end up with a wonderfully rich, choir like performance if this is the route you take, but be aware that this means less space for other parts in your mix.

## TAKING CENTRE STAGE

If you are going to insist upon having lots of layers playing back simultaneously within your tracks, think about how you can get some parts out of the congested middle of your mix. Truthfully, only vocals, bass, kick and snare really need to come from the centre of the stereo panorama, so spread the rest of your mix elements around. Another handy tip is to use modulation effects, such as tremolo, to get your sounds panning from side to side.

## BREAKDOWN

Naturally, a great way of bringing in one new element is to drop out another, but you can generate amazing effects by taking this to extremes and stopping all, or at least most of, your tracks and inserting a mad effect in their place. This will provide an attention-grabbing transition between different sections of your track that really hooks people in. You could think of it as the calm before the storm - a short pause before all hell breaks loose!

## HARMONIC VALUE

Remember, any sound that you make or record is simply a combination of a fundamental frequency and its associated harmonics. Therefore, the less harmonically rich a sound, the less mix space it will occupy. If you think about sound in this way, it'll soon become obvious which sounds to upscale and which to strip back.

## BREAK THE RULES!

We all know which styles of music we admire and which styles we want to write ourselves, but for music to evolve and develop, it's important that we don't become unthinking slaves to musical formulae. Make sure that, as your track builds up, the elements you include are the ones you want, rather than simply pushing your piece down a road to pastiche and cliché. Copying the various elements of another track you admire won't cut it, so keep your ideas fresh, interesting and above all, consciously chosen! cm



Dropping out every instrument and firing off a unique effect can create a truly ear-catching transition

Over-doing the reverb can flood your track and fill every space in the frequency spectrum, so use it wisely and, above all, sparingly





# Echoes of my mind

Discover a range of great guitar effects with our in-depth guide to the world of delay plug-ins

> Delay is among the most ubiquitous of signal-processing effects. It has a range of uses on guitar sounds, and can work magic on everything from choppy rhythms, ambient riffs and screaming leads, on through to time-bending, experimental tones.

As the name suggests, a delay takes the incoming signal and produces a duplicate, which is played back a specified amount of time after the original. Basic units will give you control over the delay time, the number of repeats (via the feedback control) and the mix between the processed and unprocessed signals. More complex units offer more than one delay line (multi-tap), and also tend to feature panning and volume parameters, as well as modulation and the ability to edit many aspects of the delayed signal's tone.

It's easy to lose hours when auditioning delay effects, and their amazing flexibility can sometimes be overwhelming. There's endless scope for crafting unique tones with delay plug-ins, and using a distinctive or unusual delay on a seemingly straightforward sound can often lend a part a whole new character. This in turn can help a track jump out at the listener - something that's essential if you want to stand out from the endless stream of MySpace artists vying for attention.

Here we'll look at the most common types of delay and how to use them. This will give you a good grounding in what each variant is capable of, so that you can easily access the sounds you need without too much messing around - it'll also make your writing sessions run that little bit smoother. **cm**



> Step by step **Mono delay**

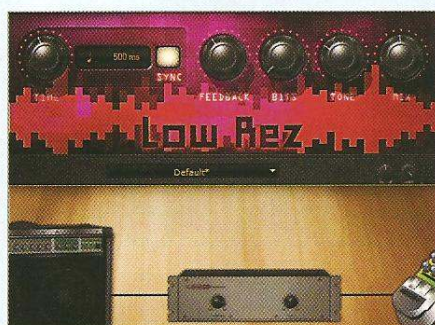
**1** > A mono delay unit is the best place to start if you're new to the art of echo. We call up Cubase's Mono Delay as an insert and switch on the **Sync** control, which enables us to set **Delay** times that automatically lock in with the host tempo. We opt for **1/8**, giving us two repeats for every beat.



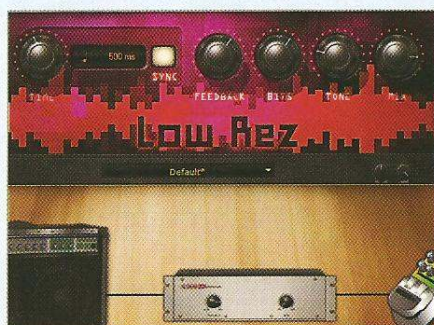
**2** > The **Feedback** dial controls the number of repeats – however, be aware that other settings may affect this, too. So, use your ears to determine the correct feedback level. You can also stop the track mid-playback and count the number of repeats. We set the **Feedback** to **16.7**, which gives us two audible echoes.



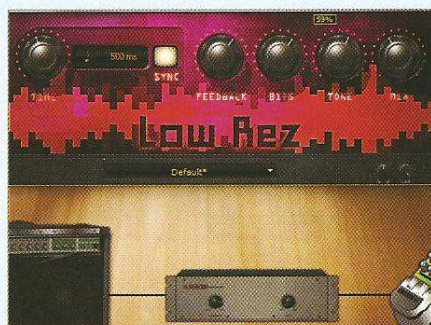
**3** > We don't want the repeats to overpower the original signal, so we go for a **Mix** (between the dry and delayed signals) of **33%**. With this type of delay, the repeats sound almost identical to the original. (Audio on the DVD: **Mono\_delay** and **Mono\_delay\_dry.wav**)

> Step by step **Lo-fi delay**

**1** > Many delay plug-ins attempt to provide an alternative to the clinical sound of clean, 'digital' echo. For example, Pod Farm's Low Rez gives lots of scope for messing around with the tone of the delayed signal. We **Sync** the unit to Cubase's tempo of 120bpm and set the **Time** to give one repeat per beat.



**2** > A cool feature on the Low Rez unit is the **Bits** dial, which adjusts the quality of the delay. After some auditioning, we settle on **7 Bits** to lend a great lo-fi sound to the effect. A good way of checking the results of the delayed part of the signal is to turn the **Mix** up to **100%**, so that you can hear the delay in isolation.



**3** > We drop the **Mix** to **39%** and set the **Tone** to **58%**. The end result is a really grimy delay sound that compliments the very clean main tone. Be sure to compare the different delays with each other, so that you can hear the variations in sound. (Audio on the DVD: **LO\_Rez\_dry** and **LO\_Rez.wav**)

> Step by step **Virtual tape echo**

**1** > Many amp sims include modules modelled on the classic Echoplex tape delay. The original unit recorded the input signal onto a tape, then played it back. Pod Farm's Echo Platter offers combinations of four virtual tape **Heads**. We opt for the **1-3**-setting, so that our repeats are evenly spaced.



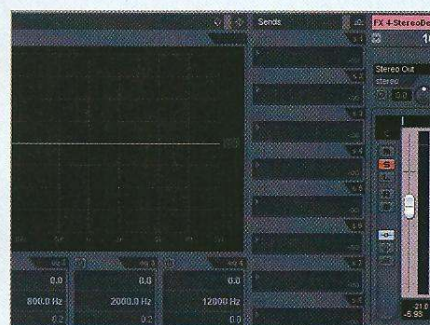
**2** > Next we set the **Feedback** control to give us three repeats – stop the track as it's playing to check how many repeats you're actually getting. And remember that you still need to use your ears to ultimately judge whether the echo is enhancing your sound or not.



**3** > Finally we turn our attention to the **Flutter** control, which emulates the fluctuations in pitch that tape machines produce. This is quite an intrusive sound and one we're not too keen on hearing lots of, so we back the dial off to **3** to keep the effect subtle. (Audio: **Echo\_platter.wav** and **Echo\_platter\_dry.wav**)



## > Step by step Stereo delay



**1** > So far we've concentrated on mono delay insert effects (added to the guitar channel), so let's look at how stereo delays and send/return setups can be used. We start off by recording a choppy rhythm guitar part, then call up AmpliTube 2 and select the **American Tube Clean 1** amp model.

**2** > To add some character to the sound, we opt for a subtle effect courtesy of Cubase's Phaser plug-in. The **Rate** is set to an ultra slow **0.2** and the **Width** to **34**. This gives us a very slow, wide modulation. As should always be the case with send effects, the **Mix** is kept **100%** wet.

**3** > A stereo delay will add different kinds of repeat effects to our guitar part. Because the guitar is a mono signal (and therefore on a mono channel) we need to create a stereo FX channel for hosting our delay. This will function as a channel in its own right, meaning we can adjust the volume, edit the EQ and place extra effects on it to further process the delayed signal.

### POWER TIP

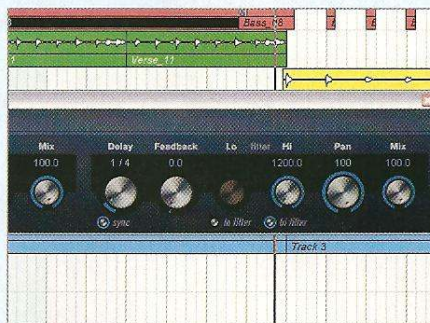
#### >It's a send-up

When an effect is added directly to an instrument's channel, obviously it only affects the tone of that instrument. Its position in the signal chain will also influence the sound (reverb followed by delay will sound different to the delay followed by reverb, for example). Using a send effect is a different proposition. A separate FX, 'auxiliary' or 'return' channel hosts the effect, and you 'send' as much of the audio signal to it as you like for processing parallel to the original instrument channel. What's more, as many instruments can be sent to the FX channel as you want.



**4** > Now we need to send the guitar signal to the FX channel, in order to hear the delay effect. Go to the send section of the guitar's channel strip (called **Verse** here) and select **FX 4-StereoDelay**, then set the level to **-3.59dB**. This is an arbitrary figure, as we just need *something* going to the FX channel, in order to get the delay right.

**5** > The Stereo Delay, as the name suggests, features an interface comprising two identical halves. First we turn our attention to the left-hand side, which is conveniently panned left. We want a fast **Delay** time, so we opt for **1/16**, to give us four repeats per beat (with the **Sync** button enabled).

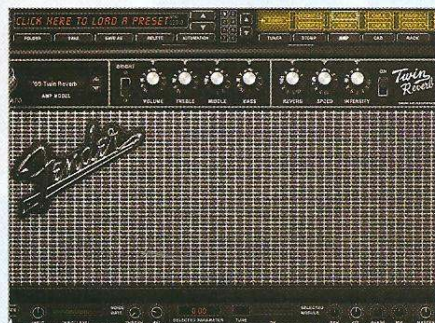


**6** > Next we set the number of repeats, by adjusting the **Feedback** level to **24.7**. At this tempo, the Delay time gives us five or six fast repeats. On its own, this is quite a thin sound that's a little too frenetic, but we're looking to pair it with a contrasting delay from the other side of the unit.

**7** > We want a slower **Delay** in the right speaker, to fill out the sound, so we set the right-hand side of the unit to **1/4**, to give us one repeat per beat. A potential problem with stereo delays is that the sound can lose clarity and turn to mush. To combat this, we also set the **Feedback** to **0**, so that we only get a single repeat.

**8** > As we said earlier, the **Mix** for send effects should always be **100%** wet, so that the FX channel outputs only the wet signal. If it's set to anything other than 100%, you'll hear the dry signal through the FX channel as well as the source channel - a mixing nightmare! (Audio on the DVD: **Stereo\_delay\_dry.wav** and **Stereo\_delay.wav**)



> Step by step **Ping pong delay**

**1** > Again, we start by recording a simple guitar part, so that the distinctive sound of ping pong delay is easy to pick out. We call up AmpliTube Fender and load up the '65 Twin Reverb model. This gives us a crystal clear tone to work with.



**2** > The ping pong delay works by bouncing the delayed signal between the left and right speakers, so we need a stereo channel to make use of it. We load a stereo FX channel, call up Cubase's **PingPongDelay** and send the guitar's signal to it.



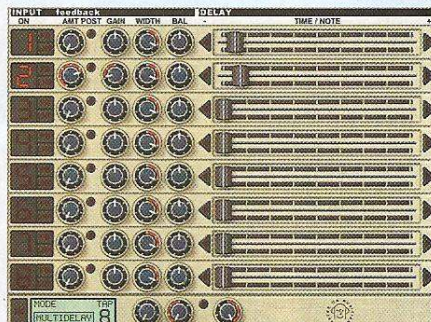
**3** > We set the **Delay** to **1/8**, to give us two repeats per beat, with the **Feedback** at **39**. This gives us eight repeats in total, which 'ping pong' from left to right. Once again, we leave the part quite sparse and placed lots of accents in, so that you can easily hear the ping pong delay in action. (Audio on the DVD: **Ping\_pong.wav** and **Ping\_pong\_dry.wav**)

> Step by step **Multi-tap delay**

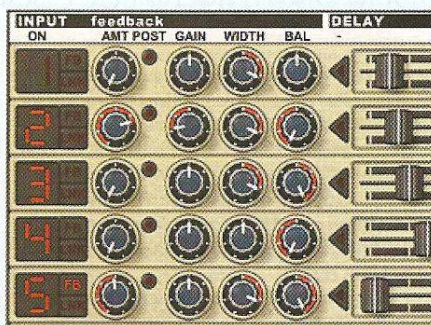
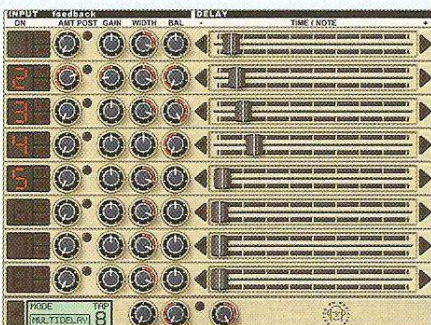
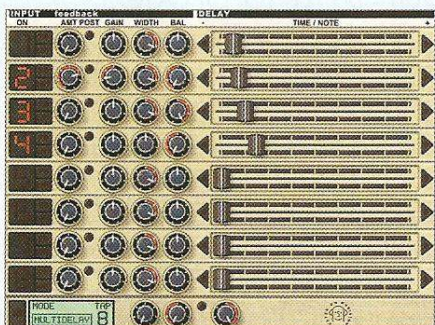
**1** > We record a stripped-back guitar part to illustrate a typical multi-tap delay sound. We load up the Line 6 Pod Farm and select the **Blackface Lux** model amp, with a **Drive** setting of **6**, so that the tone is overdriven but not mushy. We also boost the **Bass** to **8.5** and the **Treble** to **8**.



**2** > The PSP 608 Multi Delay is one of the most powerful plug-ins of its type. Although the interface looks intimidating, it's just the same set of dials reproduced eight times. Let's build a basic multi-tap delay by setting the first 'tap' to repeat after one beat with the **Time/Note** slider.



**3** > We set the next tap to repeat a beat later than the first with its **Time/Note** slider. We also want the second repeat to be slightly quieter than the first, to avoid the repeats sounding like they're part of the original recording, so we lower the **Gain** by **4dB**.



**4** > We add the next two repeats very close to the last one - this gives us a flurry of notes in quick succession - and use the pan (or **Width**) controls to spread the repeats around the stereo field.

**5** > Now we have a single repeat followed by a short burst of notes. Our guitar part is deliberately quite sparse, so that we have plenty of room for many different delays. The fifth tap repeats after a 16th-note. On its own, this is barely audible, but we've got plans for it...

**6** > We turn on the Feedback (**FB**) control, so that we can add repeats to our fifth tap. We turn the **Amt** dial up to give lots of fast repeats. Listening back, you'll hear a burst of fast but subtle repeats in the right-hand speaker at the same time as the first four repeats. (Audio on the DVD: **Multi\_tap** and **Multi\_tap\_dry**)





# Meta-recording in Live

Break your music down into the raw elements, map them to a MIDI controller and inject some serious groove into your writing process

**> There are many approaches the computer musician can take to putting drum tracks together, each with its own positive and negative points. Loops are repetitive, but can sound great. Drawing in individual notes gives you total control, but can be tedious. Performing on a MIDI controller can give excellent results, but takes a ton of practice to get just right.**

Programming drums is so tricky because a drum performance is a pretty amazing thing. For a real drummer, each limb plays a unique role in the overall groove, and a complete track could comprise thousands of individual hits. Astonishingly, the margin of error for each hit is measured in milliseconds; if the hits are off by a tiny fraction of a second, the groove falls apart. There's no way the performer can consciously consider every hit, though – instead, he or she is

thinking of larger musical concepts like accenting, form, energy and contour. The individual hits are mostly unconscious, the product of hours of practice.

Developed as part of Loudon Stearns' *Advanced Music Production with Ableton Live* course at [Berkleemusic.com](http://Berkleemusic.com), meta-recording enables the computer musician to think like a drummer – instead of sequencing individual notes, meta-recording is the sequencing of, er, smaller sequences. It enables you to focus on larger musical concepts, just like the performing drummer. If you want a four-to-the-floor kick with a syncopated hi-hat part, it's only a couple of button pushes away. Essentially, you let the computer do the hard work, acting as the drummer's unconscious brain.

With meta-recording, a performance-orientated loop recording process

is first used to create a grid of short patterns that map onto a MIDI controller, using the familiar 4x4 drum pad arrangement. Then, the patterns are combined and layered in real time to create an interesting and evolving groove. Once configured, it's virtually impossible to mess up the groove, but you still have enough control to create a very compelling drum performance.

Meta-recording is a compositional process with broad uses and many variations. It will break you out of the dreaded one-bar loop and help inspire new ideas, enabling you to easily perform complicated grooves that evolve naturally throughout the song. Check out the full project files on the DVD, including all the mappings for an M-Audio Trigger Finger and a complete meta-recording performance. Now fire up your MIDI controller and allow us to walk you through the process, start to finish.



## Hanging on to that muse

The creative spark is a fickle thing, and even a small distraction can put it out. The usual stop, rewind, count-in, record process so common in music production can be detrimental to that drum groove you've been working on for so long, resulting in a recording that lacks the certain 'something' that made your initial jamming sessions so promising. At this early stage of the compositional process, when you're looking at a blank page, the best thing Live can do is wait attentively, then record right when you stumble on that great idea.

Live's performance capabilities make it a great compositional assistant, though - you just need to

set up a couple of mappings and establish an efficient workflow. Quantisation is important here and Live has many types. **Global Quantize** controls clip launching and has no effect on individual notes, whereas **Record Quantization** (found in the **Edit** menu, curiously enough) quantises the notes as you record. The latter is perfect for getting an idea down,

but may be too stiff for a finished product - see below for our *Power Tip* on how to avoid this.

In the walkthrough, a clip slot is chosen for recording and mapped to a sustain pedal - this is best, because using your foot means that the creative flow isn't interrupted by fumbling for the record key when you need to get an idea down in a hurry. Once the

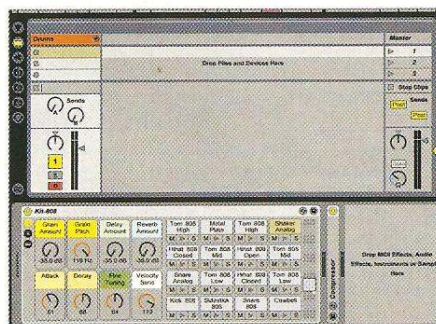
setup is complete, the fun begins. Jam until you're consistently playing something you like, then tap on the sustain pedal and the recording will begin according to the Global Quantize. Tap again to complete the recording and hear it back! It's very easy, and your hands never have to leave your controller.

Once you've completed a clip, you may want to add to it, which is where **Overdub** mode comes in. When activated, incoming notes are added to the clip, enabling you to insert hits and layer sounds. With Overdub off, you can practise without committing notes to the clip. It's so useful that you'll want to give it a mapping of its own.

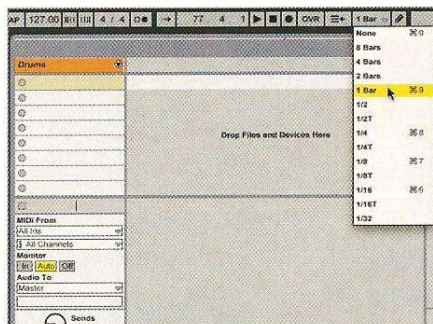
"Using your foot means that the creative flow isn't interrupted by fumbling for the record key"

### > Step by step

An efficient loop recording process



- 1 > Start a new project with a single MIDI track and add your favourite Drum Rack. Although we'll be using many tracks, this single Drum Rack will provide all the drum sounds needed for the project. Name the track **Drums**.



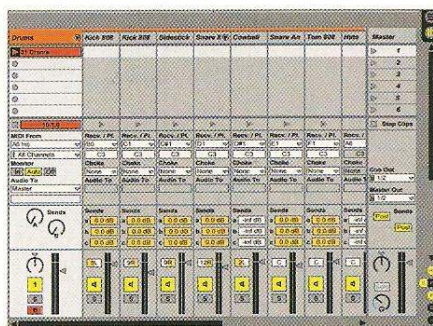
- 2 > When launched, an empty clip slots start recording; when launched a second time, it starts playing back. Both actions will happen according to the **Global Quantize** setting, so set it to **1 Bar** to make this a synchronised process.



- 3 > Now we'll create a mapping, so that you can launch the first clip in the **Drums** track with ease. Enter MIDI map mode (**Cmd+M** on Mac, **Ctrl+M** on PC), click the clip's slot, tap your MIDI keyboard's sustain pedal (you can pick one up for less than a tenner if you don't already have one) and exit map mode.



- 4 > If you go to the **Edit** menu and set **Record-Quantization** to **Sixteenth-Note Triplet Quantization**, you're guaranteed a tight groove - maybe too tight, in fact, as a real drum groove always has some timing variation.



- 5 > **Record Arm** the **Drums** track, hit **Play** and practise until you can perform your part convincingly. Carry on playing and tap your sustain pedal - the mapping created earlier will cause the clip to start recording. Tap the pedal once again when you've finished playing and the clip will start looping.

### POWER TIP

#### >Gently does it

To preserve some of the natural human variation in a live performance, it helps to quantise gently. After recording (with record-quantise turned off), right-click your recorded notes and choose **Quantize Settings**. For **Strength** choose a low percentage, around **20%**. From then on, you can use the plain old **Quantize** command. Live remembers your settings and will only apply the amount specified. While listening to your performance, quantise repeatedly till the groove settles in nicely.



## Record the elements

If you've followed the previous walkthrough successfully, you'll now have an incredibly easy system for creating simple drum patterns. The next stage is to use it to generate four clips each for kick, snare and hi-hat, which will serve as the building blocks for the final performance. The recording all happens in the first clip of the **Drums** track, mapped earlier, so that you can just keep on repeating the loop recording process. After just a couple of minutes of doing this, you should have all the necessary clips. The groove will be playing throughout the whole recording, too, making it an intuitive writing process.

Like the previous loop recording process, first of all there's a small amount of configuration to carry out, then the fun begins. Create and configure separate tracks for each of the three main groove elements: kick, snare and hi-hat. Another track will be filled with one-shot clips that you can launch at any point in the groove, but we'll get to those later.

All four tracks are sent to the main Drums track for playback, but not to its **Track Input** for recording. We want the signals from each of the four elements to trigger the sounds on the Drums track, but not actually record data into its clip

"Like the previous loop recording process, first of all there's a small amount of configuration to carry out, then the fun begins"

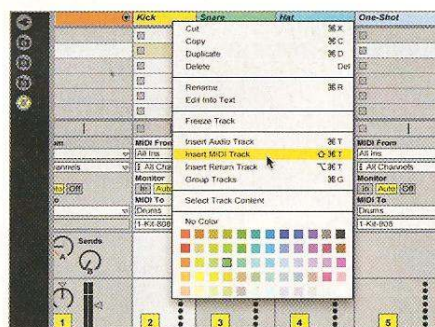
slots. This may seem like a small detail, but it makes a big difference.

The best way to lay out your clips is such that they increase in energy as you move down through the scenes. So, the first scene should be mostly quarter notes - ie, very sparse. In scene 2, increase the energy by having more hits and

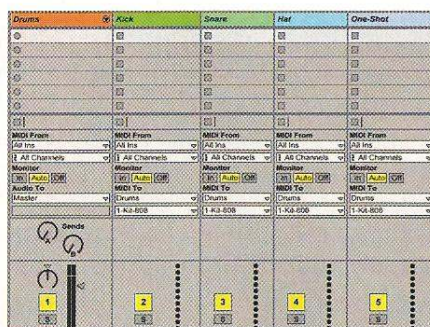
a bit of syncopation. Pay attention to your velocities as you create these parts, too. As you move to 16th-note hi-hat patterns, say, record at lower velocities. Though you don't know exactly how the loops will be combined in the end, you still need to think about the balance of the overall kit.

### > Step by step

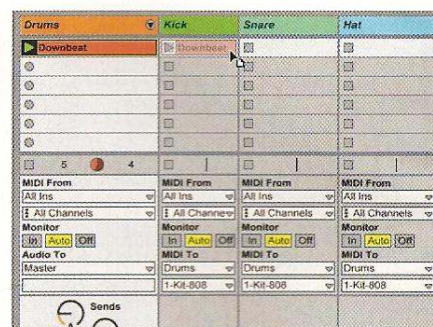
#### Recording the elements



- 1 > Create three separate MIDI tracks for each of the main elements in your drum groove - ie, **Kick**, **Snare** and **Hi-hat**. Also, insert an additional track for one-shot hits and fills - the 'spice' of meta-recording, so to speak.



- 2 > The output of each track must inevitably be the Drum Rack. In the I/O section, configure all their outputs to go to the **Drums** track, then directly to the instrument (**1-Kit-808** in our example). This routing point will bypass all clip recording and monitoring features.

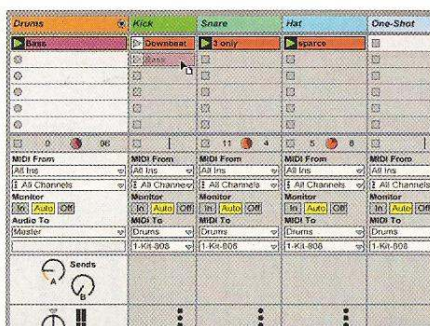


- 3 > Use the loop record process to create a simple kick pattern in the **Drums** track. Remember not to over-complicate it, as we'll be adding more layers as we go on. Drag your recording (called **Downbeat** in the screenshot) to the first slot in the **Kick** track.

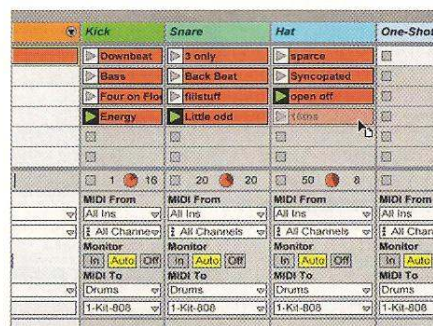
#### POWER TIP

### > Simple pleasures

The typical drum groove has three simple patterns layered on top of one another: kick, snare and hi-hat. The hi-hat is the busiest, hitting from four to 16 times per bar. The kick is strong on beat one, ie, the downbeat. The snare is strong on beats 2 and 4, called the backbeat. It's surprising how many styles follow these guidelines, so it makes a great starting point for your grooves. With the meta-recording process, you can get complicated results from simple patterns, so keep it as stripped-back as can be.



- 4 > Using the loop record process again, create simple snare and hi-hat patterns. The great thing about this technique is that, as you drag the recorded parts to the element tracks, they continue to play.



- 5 > Finally, record a slightly more active kick pattern and place it below the first one. Do the same with the snare and hi-hat, and repeat this process until you have four increasingly intense clips for each of the elements.



## Configuring the clips

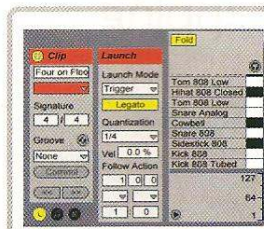
### Element clips

Your element clips should include four variations of kick, snare and hi-hat patterns. However, there are some important settings to be made in the clip Launch boxes before we can use them. Select all of the element clips before editing these parameters...

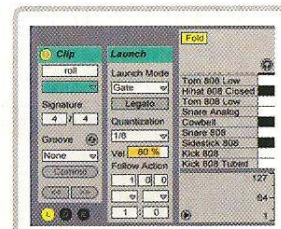
The most important setting for these clips is **Legato** mode. Legato clips (on a single track) act as a group - any launched clip starts up where the previous one left off. So, the timing of your first clip launch determines the timing of all the others in that group. If your first clip is launched an eighth note late, then all the kick clips from then on will be an eighth-note off. If your first clip is launched on beat 1, the clips from then on will stay in time with your tune. So launch your initial Legato clips on beat 1 and you're set for the rest of the performance!

We've covered Quantization, Record Quantization and Global Quantize - now we can add **Clip Quantization**. Like Global Quantize, this determines when clips launch, but on a clip-by-clip basis and overriding the **Global Quantize** setting. Because the element clips are in Legato mode, they can be changed at any point in the bar without fear of losing the groove. Changing patterns within the bar opens up many new possibilities, so a setting of **1/4** works well here.

If you want to make your meta-recording nearly foolproof, you can set your scene 1 clips to **1 Bar Quantization** and turn **Legato** off. That way, if things get out of sync for any reason, you

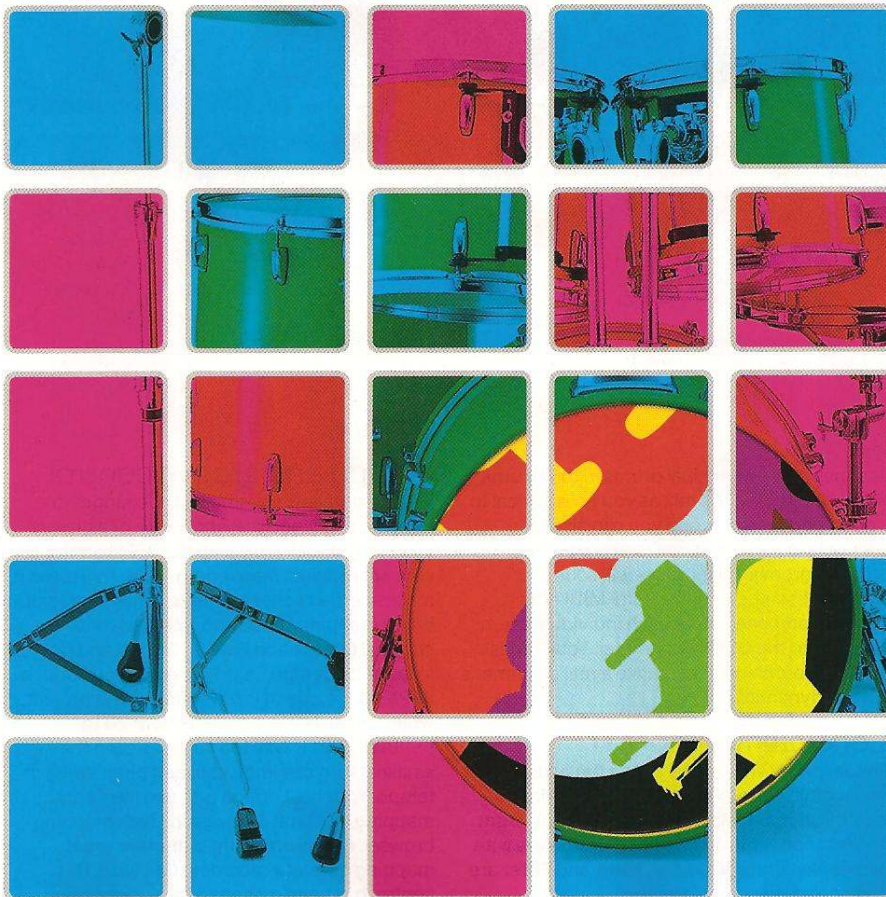


ELEMENT



ONE-SHOT

| LAUNCH MODE  | Trigger<br>Clip starts when launched and continues on                          | Gate<br>Clip plays only while MIDI note is held down                     |
|--------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| LEGATO       | On<br>Clip starts when the previously played clip stops                        | Off<br>Clip starts from the beginning when launched                      |
| QUANTIZATION | 1/4<br>Clip launches at the next quarter note                                  | 1/8<br>Clip launches at the next eighth note                             |
| VEL          | 0%<br>Velocity of clip launch will have no effect on the playback of the notes | 80%<br>Clip launch velocity will scale all of the velocities in the clip |



can launch the first scene to instantly get the timing back where it should be.

### One-shot clips

Drum grooves are simple patterns, but we need to consider extra accents, hits, rolls and fills, too. To add these performance characteristics, we'll use one-shot clips. These can be anything you like, and can incorporate other drums not included in the element clips, such as snare rolls, tom fills or Zulu warcries - whatever works for your style! They're to be triggered whenever you need a little bit of extra energy. Complete your 4x4 grid of clips with a column of **One-Shot** clips. The project on the DVD includes snare rolls and full kit fills - check them out to get ideas for your own one-shots.

On the One-Shot clips track, the **Launch Mode** is set to Gate, so that they only play while the mapped key/pad is held down. This lets you control the length of the fill, so that it can fit a variety of situations. Because you adjust their length on the fly, these clips can be quite long and involved. And you can get away with being off the beat when you start the fill, so long as you stop on the downbeat of the next bar.

With the **Velocity** parameter raised, the notes in the clip are scaled by the velocity of the clip launch. This can sound great on multisampled kits with natural timbre variation, but can lead to erratic volume changes if you're not careful.

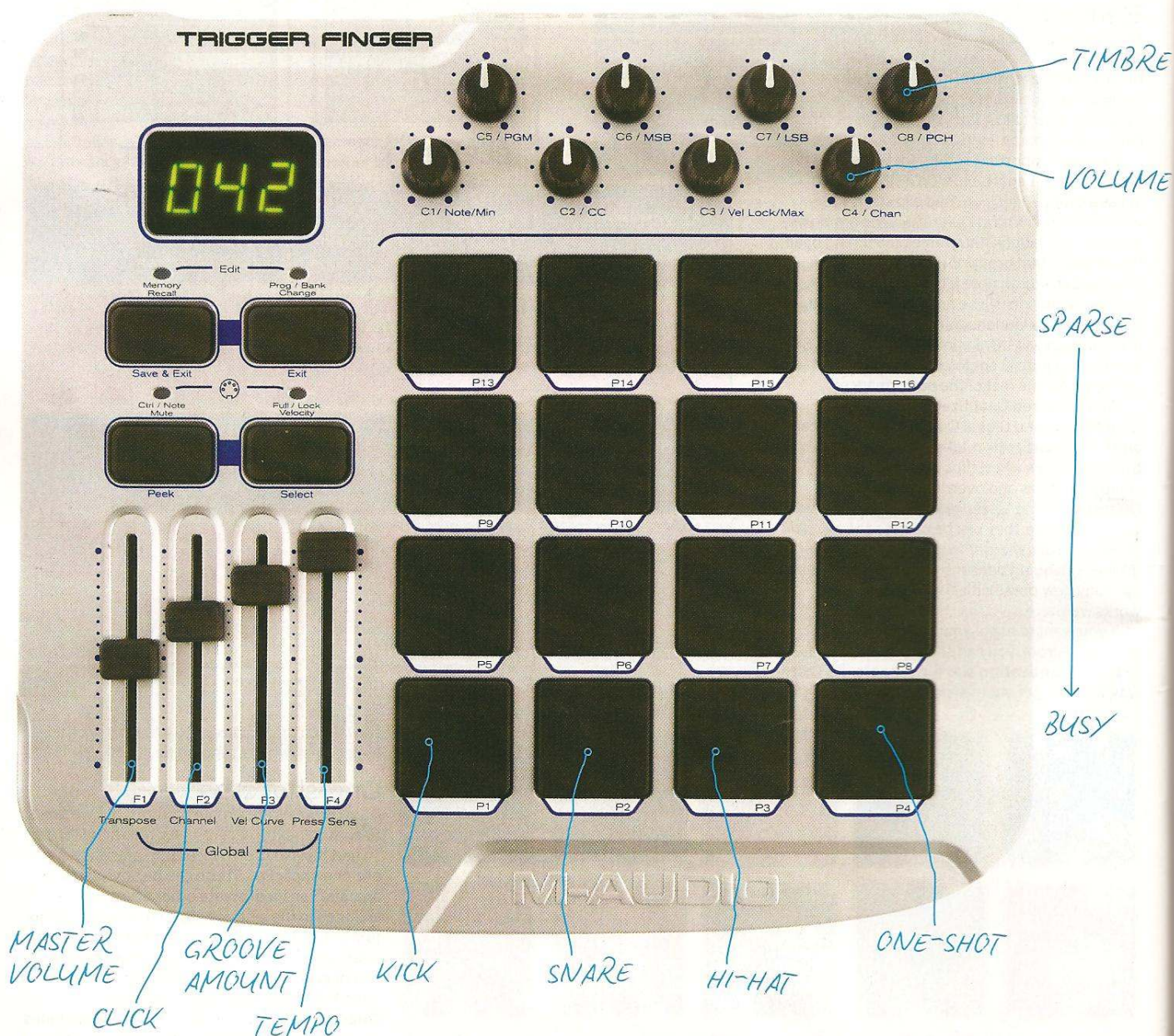
### Grooves

In Live 8, you can apply your favourite groove to all of a project's clips. You can then change the groove of all the clips by replacing or hot-swapping it in the Groove Pool.



> make music now / meta-recording in live

## MIDI controller mapping



Setting up a MIDI controller for live performance isn't easy - you must first decide which of Live's mappable parameters are essential and fit them all onto your available controls, of which there are never enough. We're using an M-Audio Trigger Finger, but any controller will work fine.

### Clip mappings

Each clip is mapped to a single MIDI note. In Map mode, use the arrow keys to move around the Live grid, while tapping pads to complete the mappings - it's really quick and easy. Lay out your controller just like your Live set, with columns for **Kick**, **Snare**, **Hats** and **One-shot**.

### Volume control

Most 4x4 pad controllers will feature knobs above each column of pads - map these to the

volumes of the individual drums in the **Drums** track. Fine-tuning the mix as you go is critical to a good performance, and you can also fade elements in and out. If you're aiming for an acoustic groove, mixer fades will sound unnatural, so use Live's Velocity MIDI effect instead - add one before each individual drum and map to the **Out Hi** parameter. Your 'fades' will now sound much more like a real drummer's natural dynamics.

### Controlling timbre

The second row of knobs above the pads is perfect for changing the timbre of the drums - look through the Macro Controls of your Drum Racks for possible candidates. Parameters with names like **Snappy**, **Decay**, **Tone**, and **Filter** are good prospects, for example.

### Tempo and groove control

It's amazing how the smallest of changes in tempo can change the whole vibe of a groove - you can gradually ramp up the BPM counter as your set requires more energy, too. Therefore, it makes perfect sense to create a mapping for it. When mapping the tempo, you have two choices: **Coarse** and **Fine**, to the left and right sides of the tempo field. Fine gives you about a 4BPM range, which is too small for this project, while coarse is a huge range: from 20 to 999BPM! This is way too large, as even the smallest turn of a knob causes a huge swing in tempo. Your best option is to use the Coarse mapping, but limit its range in Live's mapping browser. **Groove** amount is another great mapping for meta-recording (in Live 8, this control has been moved to the Groove pool).



## It's show time!

Now we're ready to actually get busy with our meta-recording setup, so start by hitting **Global Record** and launching your first scene. Remember, starting a legato clip group is very important, as launching the whole scene at once will ensure that all the parts work together rhythmically for the rest of the performance. If you want to start with only some of the drums, use your volume mappings to bring the others down before you start performing - then you can fade those elements in naturally as and when they're needed.

Focus on the song. Think about the emotional contour of the piece, slowly building up energy every eight measures. Eventually, you will have a four-to-the-floor kick, a syncopated hat pattern and a busy snare going all at once. On top of that, you're launching one-shot clips, feverishly creating drum rolls and crashes that line up perfectly with the melody. It works because you can lead the audience step-by-step to the exciting climax, and the breakdown that follows will be a welcome release.

As you go through, all your clip launches and mixer moves are recorded into the Arrange view - you can then edit out any mistakes and grab those truly inspired moments.

### Possible uses

Meta-recording isn't just for live performance - for some, it's a way to explore new groove ideas.

If you're interested in strange grooves, try mapping the **Clip Nudge** buttons in the Clip Box. These move the start point of the currently selected clip back and forth by the **Global Quantize** amount. If your Global Quantize is set to **eighth-notes**, for example, try using the nudge buttons to explore rhythmic displacement of any groove elements. Watch

"All of your clip launches and mixer moves are recorded into the arrange view"

out though, as this can quickly disintegrate into a complete mess!

This groove-tweaking process itself can, in fact, be the basis for a great Live performance, enabling you to respond instantly to the energy of the crowd with the confidence that the groove will never totally fall apart. In any Live performance, though, you might want a little backup. An additional track playing to a different kit, with a simple half-time pattern and a big kick drum on the downbeat, can make sure that the

groove holds together, even if you happen to make a mistake.

The compositional process often goes hand in hand with sound design, so why not explore this within the context of your drum samples? Try swapping over your sounds while the groove is playing - it's much better to choose patches in the context of a full groove, as this makes it easy to hear if, say, that thunderous, two-second kick sound you're considering works with a busy pattern, for example.

And when you've got the hang of it, you can apply the same thinking to other elements. Meta-recording can be used to sew together melodic fragments and inject chordal stabs - any audio clip can be dragged to a Drum Rack pad and triggered via MIDI, so all of your audio files are potentially fair game.

### Some words of advice

Your first couple of attempts at meta-recording won't be perfect - you'll likely be doing too much. Most grooves are consistent for long stretches and only break pattern during fills. It therefore helps to have some melodic and chordal elements running in the background while experimenting - we've provided some in the **CM-Meta-Recording Project** folder on the DVD. It's surprising how the same bassline and melodies can seem both laidback and exciting, depending on the drum groove. **cm**

### Meta-recording tips

Start slow! You're creating an evolving groove to complement the overall tune, so start off slow and build up gradually.

Create fills at logical moments - the most common place is at the end of a four-bar phrase.

Fills of varying length are more interesting and give greater flexibility. Use some short accents at the end of four-bar phrases, but full-bar fills at the end of 16 bars. This creates musical form and gives the listener a sense of a musical journey.

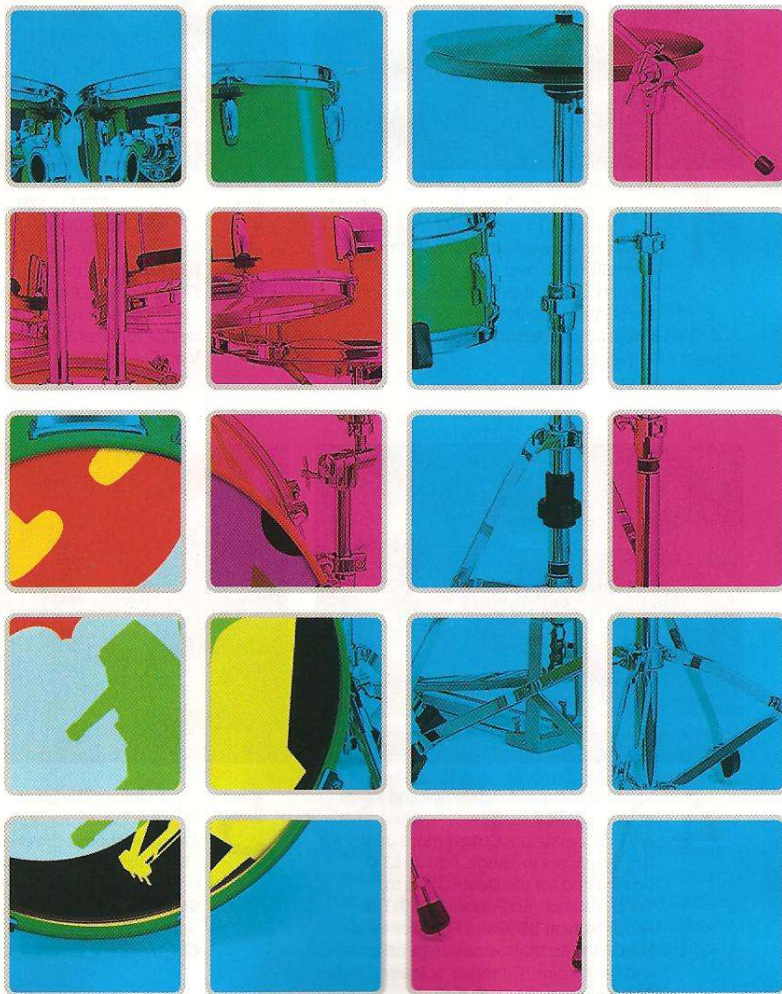
Coordinate your fills and pattern changes. Try to change the overall density after a big fill - for example, create a breakdown after a fill by switching back to your initial sparse clips.

Create unique patterns by alternating between two (or more!) clips within a bar. Switching consistently between two clips - busy and sparse hi-hat parts, for example - will create new musical patterns.

Go nuts! Just start pushing buttons - it's surprising how it all stays together even when you're trying to make it fall apart.

Use Follow Actions to automatically change clips for you. By carefully setting the actions and chances, you can get surprisingly viable groove variations.

Add some reverb and do a little mixing before your performance - you'll be frustrated if the mix is bad, but doubly inspired if the drums sound phat.





# Pitching ideas

We take a look at the brand new Key-Tracking device in Renoise and create some old-skool analogue synth effects



> **Automation enables you to control lots of parameters with the bare minimum of effort - by tweaking a few settings, you can achieve the sort of results that would take a great deal of time to program manually. Imagine our delight, then, when we discovered that the recently released Renoise 2.1 contains no less than three new devices to control modulation and automation.**

Here, we'll look at the new Key-Tracking device, which uses changes in pitch to control parameters. Similar to the Velocity device that

adjusts parameters according to note velocity, the Key-Tracking device has an additional Range setting that affects the way sounds are treated outside of the specified range.

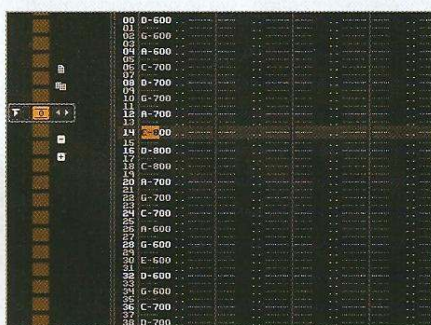
In the walkthrough below, we'll use a rise in pitch to increase the **Cutoff** value on the native Filter 3 device, which will make the sound brighter the higher the note is - a feature that can be found on many old analogue synths.

We'll call upon the trusty ZebraCM for this, which you can find on your **cm** DVD, but feel free to follow along using any soft synth or

sampler you like. Also, to maximise the impact that the pitch will have over the filter cutoff, we'll create an arpeggio that ascends and descends over a couple of octaves.

There's a small change to the Track DSP list to note before we begin: what were previously known as 'Meta devices' have now been broken down into two sub-categories - Automation and Modulation. The new MIDI-Control device can be found under Automation, whilst the Key-Tracking and Hydra devices are under Modulation. **cm**

## >Step by step Using Renoise's Key-Tracking device



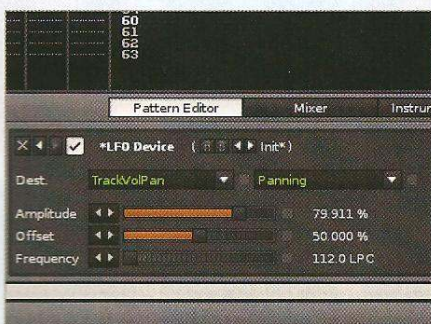
**1** > Load **CM\_trackers\_tutorial\_15\_start**. Press **Esc** to enter Edit Mode and create an arpeggio in **Track 01** that rises and falls twice over two octaves by placing a note at every other position in the pattern. (Continue or load **CM\_trackers\_tutorial\_15a**)



**2** > Set the **BPM** to **120**. Add the new **Key-Tracking** device, which can be found under **Track DSPs** in the new **Modulation** sub-category. Now add a **Filter 3** device from the **Native** group and set the **Destination** on the Key-Tracking device to **Filter 3** and **Cutoff**. (Continue or load **CM\_trackers\_tutorial\_15b**)



**3** > Analyse the range of your arpeggio, then specify the effective **Range** of the Key-Tracking device accordingly - we chose ours from **D-6** to **D-8**, as this encompasses most of our notes from the file in step 1. Select the bottom curve from the **Scaling** menu and raise the **Dest Min** to about a quarter. (Continue or load **CM\_trackers\_tutorial\_15c**)



**4** > Revisit the Filter 3 device and lower the **Inertia** all the way to **Slow**. This will interpolate the **Cutoff** more gently for large changes in Range. Add an **LFO** Device and set the **Destination** to **TrackVolPan** and **Panning**, with the **Amplitude** at **80%** and **Frequency** at **112.0 LPC**, so that we have a gentle, oscillating pan. (Continue or load **CM\_trackers\_tutorial\_15d**)



**5** > To add a little bit of warmth and richness to our arpeggio, load a **Flanger**, choose the preset **Wanderer** and lower the **Amount** to **50%**. Secondly, call up a **Chorus** and select the **Filter Delay Short** preset. This should also widen our sound very nicely. (Continue or load **CM\_trackers\_tutorial\_15e**)



**6** > For the finishing touches, add a **Delay** with a **Line Sync** of **3** on both channels, then alter both **Feedback** levels to around **60%**. Next, choose a **Reverb** device and select the **Stage** preset. Try experimenting with different **Filter** types, too, such as **HighPass**, to see what sorts of new sounds you can create.



# Major modal value

We explore the last two majors in our brief tour of modes, and show you how these scales can be employed in your music

> In our continuing quest to map all of the major modes in the known universe, let's take a quick look at the two as yet undiscovered (by us at least) scales: the Aeolian and Locrian. Both of these have minor thirds, but they're quite different in character.

## The 'natural minor'

The Aeolian mode has two names, one modal and the other acknowledging the fact that the older modal system evolved into our more modern major/minor system - in a few places, these are identical. The Aeolian is the mode obtained by playing a major scale from its sixth step. In **Fig 1**, you can see that D Aeolian uses the same notes as F major. Those of you with some background in the rudiments and theory of music will instantly recognise the pattern of relative major and minor scales, though minor scales tend to have notes changed chromatically, while modes stay diatonic. (We'll investigate how minor key chord progressions work in a future instalment!)

In the boxout, you can see that the Aeolian occupies the slot next to the Dorian mode and is identical, except for its sixth degree - a major sixth (a tone/whole step above the fifth, or B in this key) in the case of the Dorian and a minor sixth (a semitone/half step lower than that, or B<sup>b</sup>) in the Aeolian. In order to bring out the Aeolian flavour of this mode, the flat sixth must therefore be used with reasonable prominence, in melodies, riffs, basslines and/or chord progressions. **Fig 1** also contains a few chords from a well-known Phil Collins song that demonstrates the moody effect of the flat sixth



**1** D Aeolian, and a well-known chord progression that uses the flat 6 to great effect - keep your left hand on a low D



**2** The somewhat unearthly Locrian mode on C<sup>b</sup> - the progression requires a continuing C<sup>b</sup> in the bass

admirably. Using an unchanging bass note (known as a pedal) the chord drifts down from the tonic triad (Dm) to the chord in the seventh degree (C), then to the chord on the flat sixth itself (B<sup>b</sup>), before returning via the C.

The flat sixth also occurs in the Phrygian mode (which we met last time), but the scales differ in that the Aeolian has a major second (a

tone above the tonic - E in **Fig 1**), so this note is also good to include at some point in the texture to help define the mode.

## The last known mode

The Locrian, a mode rooted on the seventh step of its parent major, is unique among modes derived from a major scale in that it has a flat

fifth degree. (The Lydian has the same note, but as a raised fourth, it's altogether different in flavour - G<sup>#</sup> in the boxout example - and as the scale also has a perfect fifth, it doesn't count as the same thing.) As can be seen in the table,

"Those with some background in the rudiments and theory of music will recognise the pattern of relative major and minor scales"

Locrian is first cousin to the Phrygian, and they're identical except for this flattened fifth, so for a full Locrian experience, you should include this note fairly frequently.

**Fig 2** shows the scale rooted on C<sup>b</sup> (parent major: D) and another brief chord progression stressing its characteristic notes. In all other modes, the perfect fifth (seven semitones above the tonic, or A in the boxout) gives a degree of stability, even in potentially dissonant scales like the Phrygian. However, with its diminished fifth (six semitones above the root, or A<sup>b</sup> in the boxout), the Locrian sounds restless and somehow unfinished, so use it if you want to give a passage in your music that sort of unstable feel. This scale and associated chord (minor seventh with the lowered fifth) tends to be used more in minor key progressions than in modal contexts, so that's another good reason to explore minor keys sooner rather than later!

In our final *Easy Guide* instalment on modes next month, we'll look at a few choice modes created from the melodic minor scale, rather than the major. **cm**

## The hierarchy of modes

In this table, we've attempted to arrange the modes in a logical order, so that you can see their similarities and differences. All seven modes are transposed to the common tonic of D and arranged from bright (Lydian) to dark (Locrian).

We've used letter names rather than notation, but if we had put these on a staff, we could have used key signatures starting with three sharps, then deleted sharps and added flats one at a time until we reached three flats with D Locrian. In other words,

each scale is identical to the one above or below, except for one note, as readily visible in the chart. If we changed the D Locrian's key signature to one of four flats (A<sup>b</sup> major), then the scale's tonic would go down a semitone to produce D<sup>b</sup> Lydian and the cycle could then repeat a semitone lower.

The number that follows the mode name indicates the degree of the parent major on which each mode starts (eg, the Mixolydian shown here starts on the fifth step of the one-sharp scale of G major).

|                |   |   |                |                |                |                |                |                |   |
|----------------|---|---|----------------|----------------|----------------|----------------|----------------|----------------|---|
| Lydian         | 4 | D | E              | F <sup>#</sup> | G <sup>#</sup> | A              | B              | C <sup>#</sup> | D |
| Ionian (major) | 1 | D | E              | F <sup>#</sup> | G              | A              | B              | C <sup>#</sup> | D |
| Mixolydian     | 5 | D | E              | F <sup>#</sup> | G              | A              | B              | C              | D |
| Dorian         | 2 | D | E              | F              | G              | A              | B              | C              | D |
| Aeolian        | 6 | D | E              | F              | G              | A              | B <sup>b</sup> | C              | D |
| Phrygian       | 3 | D | E <sup>b</sup> | F              | G              | A              | B <sup>b</sup> | C              | D |
| Locrian        | 7 | D | E <sup>b</sup> | F              | G              | A <sup>b</sup> | B <sup>b</sup> | C              | D |



# Long player



The album as it's traditionally known is on the way out, but rachMiel has some tricks up his sonic sleeves for revitalising the concept

## 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.

> **Music albums were originally the sonic equivalent of photo albums: collections of individual objects (78rpm vinyl records), which, taken as a whole, constituted a single group object (opera, symphony, etc). As technology advanced, the term 'album' evolved to mean different things: a single vinyl record containing about a dozen songs with a total duration of 30-40 minutes; a CD containing roughly the same amount of music and, more recently; a collection of downloadable MP3 files.**

The notion of what an album is (or isn't) has become hazy in our iTunes singles-centric times. To help clear things up, I offer this working definition: an album is a set of tracks in which the whole is intentionally greater than the sum of its parts. This definition was inspired by the Gestalt theorists, who first applied it to the human psyche and later to visual phenomena, so let's take a closer look at its components.

By a 'set of tracks', I mean anywhere from 1 to N tracks, where N is an arbitrarily high number.

Thus an album might consist of a single track, two tracks, 20, 100 and so on. Since there is no longer any physical CD-ish medium to set an upper limit on duration, it is possible (if impractical) to create an album of 1000 tracks, with a total playtime of one year. The conventional range, however, would probably be

something like three to 20 tracks.

By 'the whole is intentionally greater than the sum of its parts', I mean that the album (whole) must possess some over-arching presence that

does not arise from the mere succession of its constituent tracks (parts). This is an alchemical process in where a collection acquires an enveloping aura from the interaction of parts.

Note that I included the word 'intentionally' within my definition above. The human brain is an engine of association. When presented with any collection of parts, it will always find ways to connect them, thus creating the enveloping aura mentioned above. Choose a set of 12 random songs, from all genres, eras, bands, etc, listen to the set a few times, and your brain will discover (create) associations or a higher order. So, without 'intentionally' in the definition, any set of 1 to N tracks could be called an album, which effectively nullifies the term 'album' itself. By including 'intentionally', a burden is placed on the album creator to imbue the set of constituent tracks with a sense of purpose.

So, how can you do this? Well, you could use the same 'ensemble' for all songs in the set - the same six band members and instruments, the same synthesiser and patches, the same mixing/mastering plug-ins, etc. You could choose songs that you've created during a specific period of time - a six-hour recording session in your living room, a one-week band retreat, a three-month phase in which you were obsessed with finding a hybrid between folk and classical Indian music, etc. You could create a concept album held together by a story line, lyrics or whatever...

Or, you can trust your intuition to imbue the album with a presence above and beyond its individual tracks, from a feeling that they belong together. Sure, I spend much of my time thinking and writing analytically about music. However, when it comes to composing, I let go of all that analysis and grope my way towards what sounds and feels 'right' in my gut. **cm**

"The human brain is an engine of association. When presented with any collection of parts, it will find ways to connect them"

## All things considered

There are many things to consider when creating an album. How many tracks does it need to accomplish the intended goal? How long does it need to be? In what order should the tracks be placed? Should there be silence between them, or should they flow into one another? If it's the latter, at what point should the following track begin during the outro of the previous one? Should there perhaps be bridges between the tracks? If so, should

these bridges lead smoothly from one track to the next, or should they be interruptive, short non-sequitur interludes that offer more separation?

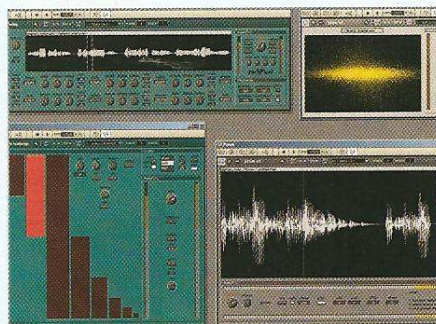
Here's a key question for virtual (online, downloadable) albums: should the album have cover art? Should individual tracks have associated images? Should these images be static (snapshots) or dynamic (animations, movies)? Should they be user interactive?

Should the album as a whole and/or individual tracks have liner notes? If so, how detailed should these be and how long? What type of notes should they be: descriptive, analytical, suggestive, poetic? Should the notes be clearly secondary to the music, like little explanatory cards next to paintings? Or should they be works of art themselves, text compositions standing side-by-side with their sound-composition partners?

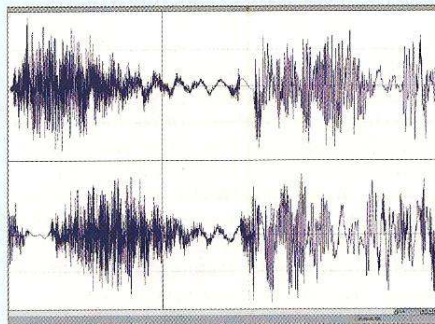


## >Step by step

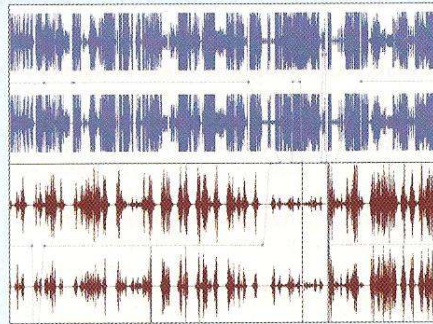
### Creating an album



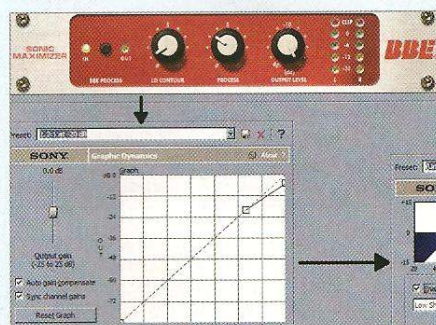
**1** > A while back, I began work on a new album by soundcombing: wandering along a sonic beach of random musical objects (generated by self-playing Reaktor de/re-samplers, just like the four pictured above), collecting my favourites and setting them aside for eventual use in my pieces. Here are a few of the objects I gathered: **Soundcombing.mp3**.



**2** > The next step in the process was to edit the sonic objects I'd gathered. My guiding image was collaboration: the Reaktor ensemble spat out the raw material – it was my job to hone, polish and transform it into music. I used Sound Forge to carry out all of the micro editing. Here's an example of a raw sound object, alongside my edited version: **Editing.mp3**.



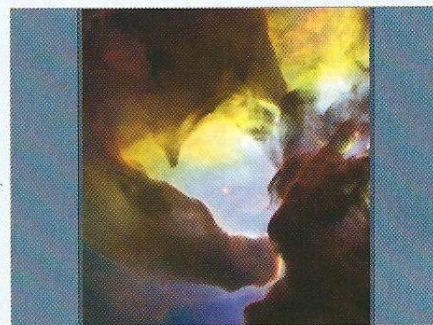
**3** > Once all 50 or so sonic objects were processed, I dove into the compositional phase. With all the objects swirling around in my head, I began to 'hear' which ones might work well with others. This led me onto sequencing, layering and eventually mixing. Here's a two-layer mix, with each layer consisting of several discrete sonic objects that I joined during the editing phase: **Mix.mp3**.



**4** > Mastering is a critical step in unifying the sound of the individual tracks of an album. I used the same four tools to master each track: the BBE Sonic Maximizer frequency exciter, Sony Graphic Dynamics compressor, Sony Track EQ and Wave Arts FinalPlug limiter. Here's the mastered version of the mix from the previous step: **Master.mp3**.



**5** > Of the dozen pieces I mixed and mastered, I ended up including eight, which came to about 32 minutes of music. (Once you hear the album, you'll understand why I kept it relatively short!) I chose a suitable album title, *abstraaktions*, with the minimal subtitle *extreme sonic abstractions* and piece names that I felt harmonised with the title.



**6** > All that remained was to find appropriate cover art. The idea of abstraction got me thinking of distant galaxies and nebulae. So I spent an hour browsing through [HubbleSite.org](http://HubbleSite.org) gallery and fell in love with this public domain cosmological image from NASA. Here, for your listening pleasure, is the entire album: **abstraaktions.mp3**. Enjoy!

## Experimentalists' corner: Creating the 'new' album

No doubt some of you find the notion of creating an album distasteful – a throwback to a bygone era. 'The album is dead!' you cry. 'Good riddance!' Well, friends, instead of giving up, I challenge you to explore the possibility of creating radically 'new' albums that are in keeping with the times.

Here are some ideas: a single album consisting of one track; a manifold album comprised of many (20, 200, 2000, etc)

tracks; a miniature album with a total duration of five minutes or less; a gargantuan album whose duration is several hours (days, weeks, months, years).

Or maybe these would suit you better: a shuffle album with N tracks to be played back in random order; an enhanced album featuring musical works accompanied by slideshows, animations, movies, games, etc; a homogeneous album with N variants of

the same song; a heterogeneous album comprised of N utterly different (genre, instrumentation, duration, mood, etc) tracks; an interstitial album where between-track material is as important as the tracks themselves; a plastic album where the tracks change (subtly, moderately, dramatically) each time they are played back; or even a kamikaze album that destroys itself after playback!



# Advanced envelopes

Our resident sultan of synth explores multistage envelopes in a quest to generate evolving pad sounds



> **Complex envelope generators might be the most significant advantage of software synthesisers over their hardware counterparts. For decades, synths only had simple two-, three- and four-stage envelopes. These were fine for basic sound design duties, but you need a bunch of 'em to create sounds with any sense of evolution.**

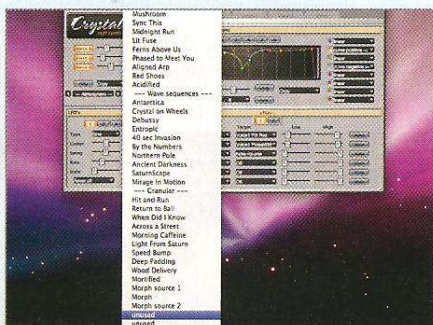
Multistage envelopes were a rarity in the hardware world. The additive DK Synergy had them, but that was a costly machine and well out of reach of most gigger synthesists.

My own first exposure came from a little company called Digidesign. Long before they were churning out high-end DAWs, they catered for a different market. One of their first software products was a nifty modular synth/sample designer: Turbosynth. I whiled away many nights patching things together with this program. It was the multistage envelope that was the most inspiring feature, especially for wrapping around complex wavesequences.

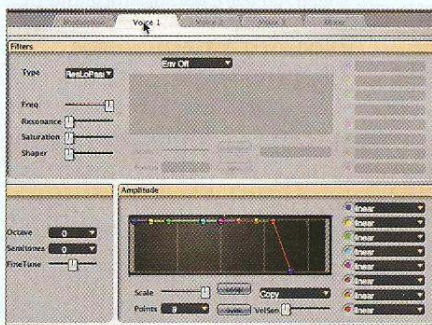
It was a long time before I saw another multistage envelope. Thankfully, however,

they've become a standard inclusion on soft synths and samplers - even some free ones have them! They're no less powerful today and can still provide the basis for many interesting sounds. I find them especially useful for pads, especially in the place of LFOs for creating non-periodic modulations that can add interest to patches, without being as distracting as, say, a totally random sample and hold waveform. As you'll see, this works best if the envelope can be looped - another function that was rare until we stuffed our computers full of soft synths. **cm**

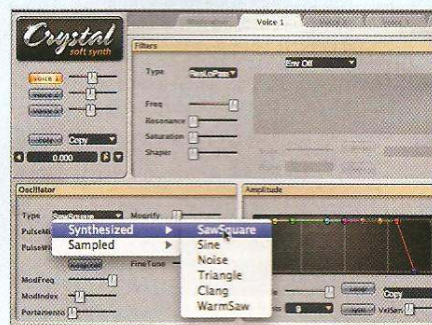
## >Step by step Using multistage envelopes



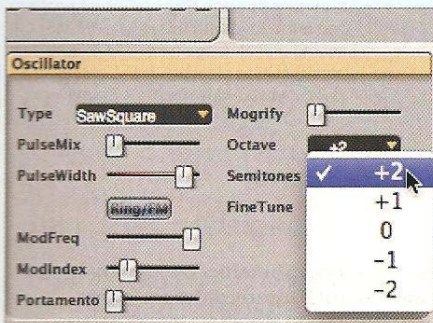
**1** > As I suggested in the main text, multistage envelopes have even found their way into freeware synthesisers. One of the best of these is Green Oak's Crystal, a brilliant hybrid synthesiser that you probably already have (if not, you can find it on the **cm** DVD every month). Load it up and select one of the **Unused** patches.



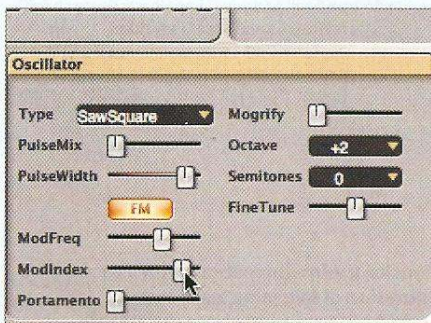
**2** > It's not a terribly exciting sound just yet. However, it's good enough at the moment, since we can learn more starting from this plain, unadorned patch than we could if we simply tweaked an existing preset. Note the tabs across the top. Click the one labelled **Voice 1** to bring up the editor for that voice.



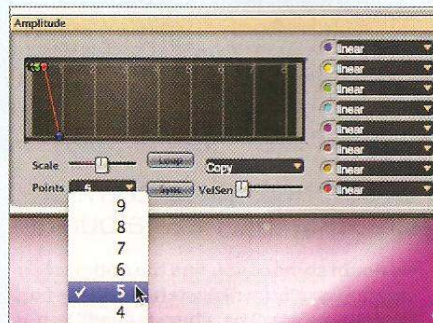
**3** > Voices are switched on and off with the buttons in the upper left-hand corner of the interface - the sliders control volume levels. Just below that is the Oscillator section, where we can adjust voice parameters. Currently, the **Type** is listed as a Sine wave. Click the arrow and select **SawSquare** from the **Synthesized** category in the menu.



**4** > That's a little bit more interesting - it gives our filter something meatier to chew on. The pad sound we're going to create will have an element of motion created by modulating the frequency of a high-pitched sound with our multistage envelope generator. Therefore, we'll want to raise our oscillator's **Octave** to **+2**.



**5** > Crystal's waveform display gives a pretty good indication of what you're doing to the sound, so pay attention to it as we attempt to give a more dissonant, clangorous quality by clicking on the **FM** button. Set the **ModFreq** slider to around **0.600** and the **ModIndex** to something like **0.800**.



**6** > Our sound is quite static, so let's get the envelope generators into play. We start by modulating the amplitude with a fairly simple envelope shape. Use the **Scale** slider to zoom out on the Amplitude section's envelope. You should see at least six or eight segments of the grid. Now, increase the **Points** to **5**.



## PRO TIPS

### MODULATE THE MODULATORS

I've kept our walkthrough example locked to a defined beat. However, it can be great fun to modulate the speeds or levels of the individual envelope stages. This can add lots of interest to the sound, making it less like a sampled loop and more like a living, breathing entity.

### RHYTHM NOTION

Broken drum machines, wavesequencing, treated loops... you name it, I love it. Though we've created a pad in our walkthrough, one of my favourite uses for multistage envelopes is as a rhythm generator. It's a cinch to layer looping multistage envelopes, such as those in Crystal, to create dense, electronic beats.

### IN SEQUENCE

If multistage envelopes can make awesome ersatz sequencers, the reverse is also true. When working with an instrument with ADSR style envelopes, call a sequencer or arpeggiator into play, especially if it has a one-shot mode. I've often used the sequencer sections in my analogue modular in this very way.

## PRO TIPS

### SAMPLE AND HOLD

Your favourite synth might not have multistage envelopes, but that doesn't mean that you can't do something similar to what I've described in the walkthrough. You may be able to call an LFO with a sample and hold waveform into play. This can be even more effective if layered with another LFO tied to the amplitude and using a ramp or square wave, thus adding a bit of regular rhythm to the sound.

## JARGON BUSTER

### ADSR

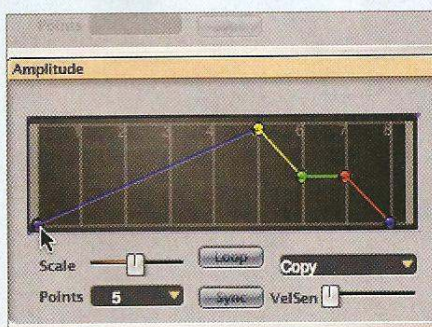
ADSR is a common envelope. Attack (A) determines the length of time for the sound to reach full volume. Decay (D) governs the length of time between full volume and a steady state. Sustain (S) is the level that's held for as long as the note is held. Release (R) describes how long it will take for the sound to fade to silence once the note is released.

## Scot Solida

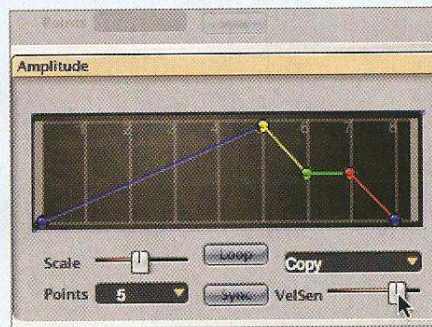


Scot bought his first synth over a quarter of a century ago. A synthesist, sound designer and audio engineer of international repute, he's provided factory presets for many of the music software industry's most

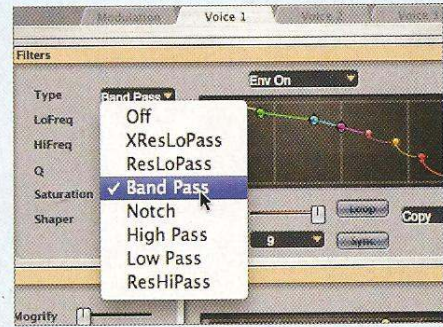
acclaimed synths, samplers and drum machines, not to mention the **cm Studio**. On rare occasions, he manages to find time to make records for Beta-lactam Ring Records under the name Christus and the Cosmonauts.



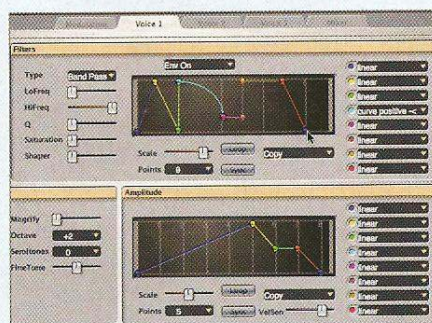
**7** > Though our envelope is set to 5 Points, we're going to use it to create a standard ADSR-style envelope. Drag the right-most blue point to the bottom of the line numbered 8. Put the red point at about halfway up line 7 and the green one halfway up 6. Shove the yellow point to the top of line 5 and the first blue point over to the lowest left-most corner.



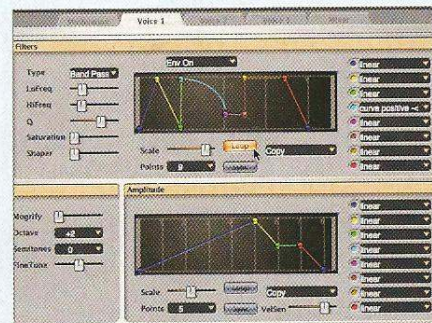
**8** > You should hear the sound fade in gradually, then decay to a lower, steady state until you release the note, after which it will fade away again. Easy and familiar. If you like, you can add a bit of velocity control over the amplitude, as well, though this isn't strictly necessary.



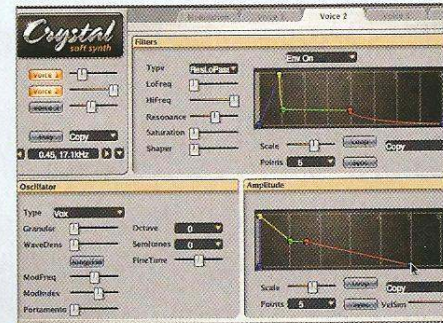
**9** > Let's move over to our filter section. The first thing we need to do here is activate the filter's envelope, using the menu to select **Env On**. Next, select a filter mode - let's try using **Band Pass**. This only allows a narrow range of frequencies through, filtering out all of the stuff above and below the cutoff point.



**10** > By default, our filter envelope is set to 9 Points, which is fine. Crystal gives you control over the curve of the individual stages. Set all of them to **Linear** (in the section to the right of the envelope display), except for the fourth point, which can be set to **Curve Positive**. Now, try to copy the envelope shape I have here. It doesn't have to be perfect, just similar.



**11** > Let's fine-tune our patch a bit. Enable the envelope **Loop**, so that it keeps repeating itself as the note is held. Now, boost the filter **Q**, then set the **LoFreq** slider to about **260Hz** and the **HiFreq** to around **3980Hz**. However, one thing we might like to increase is the length of our amplitude envelope, so that it takes longer to fade in and out.



**12** > I find sounds like this work best when layered, so activate **Voice 2** and create a simple patch using something like the **Vox** waveform. I've kept it basic, with familiar envelopes for both the filter and amp, but you can do something more complex if you like. Blend the Voices to taste and add some delay in the **Mixer** page as a finishing touch, if you like.





# BAND AHoy!

Is piracy killing the music industry or merely the symptom of a greater malaise? We uncover the facts and look at how you could be paying for music in the future

**> Music piracy resembles a bizarre ménage à trois, with each of three lovers simultaneously attracted to and torn from one another. In one corner, you've got millions of people downloading music that they love for nothing, while understanding that they're depriving artists of their royalty payments. In another corner, you have the music industry - they need their listeners to buy their product in order to stay in business, so they naturally try to stop downloaders, using various methods, including legal**

**action. And in the middle sit the artists - they want their music heard by as many people as possible, but also want to get paid.**

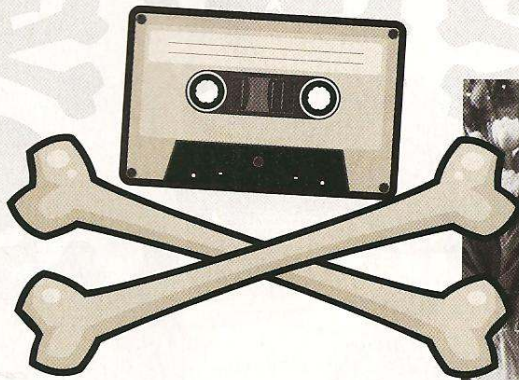
Each of these three factions is simultaneously pulled and pushed to and from the others. Hence, the world of music is in a state of flux - a three-way war is being waged to determine the future of digital distribution and how it can make money in the face of the massive cultural shift that rampant piracy has provoked.

Take the recent court case involving The Pirate Bay, the biggest and most notorious

BitTorrent tracker website of all. At the time of writing, TPB still provides free access to pretty much anything that can be digitised, including music. As you might expect, the music industry were desperate to close it down, so they took the founders of the site - Frederik Neij, Gottfrid Svartholm Warg, Carl Lundström and Peter Sunde - to court. In April, the accused were found guilty and served with one-year prison sentences and a £3 million fine - all subject to appeal, of course.

The industry alleged that, despite the





supposedly altruistic motives of the site, The Pirate Bay was making serious revenue - around \$10 million after costs - by allowing free access to a wealth of copyright material. In addition, it also reminded the press that many musicians were being harmed by not receiving their royalties due to loss of sales.

Before the court action, The Pirate Bay was serving almost 20 million people, who sourced and leached copyright material. At the time of writing, about two months after the court case, the same 20 million people are still happily torrenting via TPB. Stopping torrent sites altogether would require a whole new level of legislation and coordinated action, including ISP blocking, but many believe that such moves would only force them to go further underground, using advanced software to mask their locations. So how effective was the high-profile court case? On the face of it, not very, although it could be strongly argued that GGF - who are attempting to buy TPB and turn it into a legitimate business - were given an 'in' by those fines, which aren't going to pay themselves.

### Casing the joint

Quite apart from the case itself, the action opened up a wide range of issues, from allegations that the judge was hand-picked and manoeuvred by the record industry, to quite unexpected reactions from a range of artists, whose



Porcupine Tree's Steve Wilson is grateful to the internet for publicising his band, but bewildered by many people's attitude regarding downloading music for free

interests were supposed to be being protected by the case. For example, the Swedish hip-hop group Advanced Patrol were portrayed in the court case as artists suffering losses from illegal downloading, but the group issued this statement: "We never asked to be plaintiffs in this case. The music industry used us as scapegoats in a fight in which we don't wish to participate. We refuse to be used in a war against our fans." After the statement, the band made their album freely downloadable via The Pirate Bay.

This is just the tip of an increasingly complex iceberg that was recently highlighted by Steve Wilson, founder of the band Porcupine Tree. He plainly appreciates the troubled, love/hate relationship that many creative artists have with the internet.

"There's no question in my mind that, were it not for file sharing, I probably wouldn't be talking to you now as a professional musician," says Wilson. "For an artist such as myself, who doesn't get an awful lot of mainstream attention, particularly in the UK, the internet and the concept of sharing music has been absolutely invaluable. If you take a period in my career from, say, 1992 to 2002, I was invisible in terms of the mainstream: nothing on the radio, nothing in magazines, and I wasn't in high-street stores. So how on earth are people going to discover my music, and how am I expected to build up a fanbase? It was the internet that saved me. In 1994, a chap in Holland started up a fansite that helped me internationally." However Wilson is firmly against

piracy and the use of piracy sites to download his albums for free.

"Any musician that makes music wants to reach as many people as possible. I can probably say that there are more people listening to my music than ever before. Do the sales reflect that? No. The sales haven't moved. There's a sense of having to swim twice as hard in order to stay still." There's a distinct sense of exasperation in Wilson's voice, giving the impression that he's stuck between a rock and a hard place. He continues: "There's no job on this planet where people would be expected to work from nine to five, five days a week and then to come home at the end of the day and be told, 'Oh, by the way, we've decided we're not going to pay you. We're going to take your work for nothing'. And yet, somehow, we

"There are those who illegally download music and laugh off the notion that musicians are not receiving their dues"

seem to have arrived, culturally, at a point in time where it's generally accepted that they should be able to take the work of professional musicians without paying for it."

### Something for nothing

There are those who illegally download music and laugh off the notion that musicians are not receiving their dues,



## The Pirate Bay

The Pirate Bay is just one of the many websites offering illegal downloads of copyright material for free



stating that musicians already have too much money and downloaders are probably doing them a favour by keeping them off the drink and drugs. John Benedict, Director for the indie label Just Music, featuring artists such as Future Loop Foundation, Laroca and Weatherman, rails against this argument.

"People have the notional cliché that music label people drive very big limos and smoke very big cigars, and that all artists are like the Rolling Stones and Madonna. That's like believing that all footballers are like Cristiano Ronaldo – it's just not the case. Most of us deal with people way below the Madonna level for most of our lives. Artists are simply trying to make a living from what they do." Some file-sharing advocates have declared that no one should pay for music. They argue that tracks and albums should become nothing more than a marketing exercise, with the real income generated by gigging, special edition CDs and vinyl, and other merchandise. The aim is to distance the artists from the grip of the major record labels whose power lies in distribution of that music. That's fine, but where would it have left a band such as the late-60s Beatles, or other outfits who don't have any interest in gigging? Could they survive on merchandise sales alone?

We know that CD sales are dropping fast. Figures from the BPI – the UK's record industry body – state that the download market forms 11% of total music revenue in the UK, which is from a standing start in 2004. So are the falling sales figures merely reflective of a transitory phase, as people move from CDs to downloads? No, says the BPI, because only 16% of downloads are legal. But who's to say that the other 84% of those downloads would have occurred if they were restricted to pay-only files? And what exactly constitutes a download?

## Cooking the books

The figures can make your head spin – just ask Ernesto Van Der Sar, founder of Torrentfreak, a blog dedicated to delivering the latest news from the

file-sharing 'industry'. "As far as revenue is concerned, I too have read the industry results," he says. "They claim in this year's report that, for every CD sold, there are 20 copies pirated. However, if you look at the UK sales figures and the estimated losses, it turns out that, for every ten pirated copies downloaded, only one is considered a lost retail sale. So what about the other nine? They're not affecting sales? And if they're not harming the bottom line, what are they doing? Possibly helping to promote and generate sales in a different manner, via various other media/formats, or even selling tickets to gigs."

Van Der Sar firmly believes that, if musicians are earning less money, then it's not the fault of piracy. "Ten or 20 years ago, people would go to a record store and listen to CDs – or, if the shop was capable, vinyl on the store's decks – then, at the end of the day, decide to buy a record. Now, on the internet, many more artists are being listened to, and some

**"It turns out that, for every ten pirated copies downloaded, only one is considered a lost retail sale"**

listeners – not all, I grant you – will buy products from those artists. However, there is a much greater number of new artists and music being listened to than before via these potential customers with relatively no budget."

Van Der Sar brings up a point that is often overlooked: before the explosion of downloads and the internet as a musical phenomenon, the method of accessing music and the amount of music available was somewhat restricted, principally because the music industry controlled the distribution channels. The internet

## Disarming DRM

DRM (Digital Rights Management) was seen by many observers as the last ditch effort on the part of the music industry to control the distribution of music. Utilising built-in software coding, the system attempted to restrict the usage of both physical and downloaded files. Between 2002 and 2007 all of the major labels tried to impose DRM onto CDs itself. It was a disaster. Some CDs failed to work on certain CD players, while the Sony take on DRM installed itself onto the host computer and opened it to severe security breaches – a problem that several court actions and the issuing of software patches eventually solved. Eventually, millions of CDs were recalled and the whole idea was scrapped, but pirates had bypassed every flavour of DRM on the market anyway.

"Every form of DRM out there just gets cracked," says the Electronic Frontier Foundation's Corynne McSherry. "These days, you don't even have to be really technologically savvy to get hold of utilities to help you get around the DRM protection if you want to."

DRM continued to be attached to download files but, during the past two years, download sites have begun to remove the security protocol. iTunes, for example, now promotes its music as DRM-free.

"DRM just annoys people, as it is restrictive to legal users," reckons Ernesto Van Der Sar, founder of Torrentfreak. "The only people who are affected by DRM are the honest customers. The people who pirate receive their files DRM-free anyway. There is a case that DRM copies are harder to share, but this action is less of a threat than those who might actively pirate the music."

Van Der Sar is dismissive of the fact that some download sites still use the protection system and views the recent moves to remove the system from many others as all too obvious. "The industry has basically admitted that it was wrong," he says. "If you look at the International Federation of the Phonographic Industry (IFPI) reports, there is a section at the bottom where they proudly announce that they are going to sell DRM-free music. But, of course, it was IFPI who put it there in the first place!"

**TorrentFreak offers the latest news and stories from the world of peer-to-peer file-sharing**







FAC think subscription services for P2P networks are the way forward, despite being against copyright infringement

## FACd off

As explained elsewhere in this article, the BPI - the official body representing the UK music industry - and the government are trying to work out a system to tackle music piracy based on the premise that the ISPs should police their users and come down hard on copyright infringers. There will be many ISPs who won't be happy with that situation, and even more users who will react against such legislation, but surprisingly, there are many musicians who don't like the idea either.

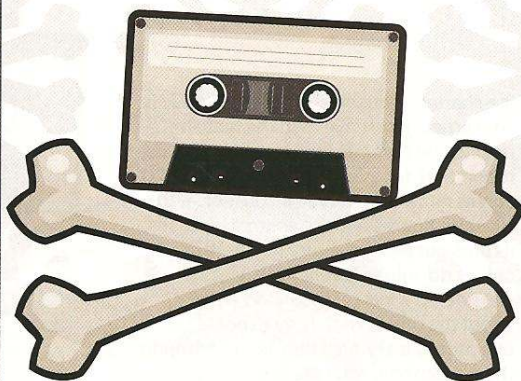
FAC or Featured Artists Coalition ([www.featuredartistscoalition.com](http://www.featuredartistscoalition.com)) says that disconnecting music fans is the wrong path to take. The organisation, backed by the likes of Robbie Williams, Radiohead and the Kaiser Chiefs, is complaining that the industry is not representing its best interests.

Commenting on the BPI's proposals, FAC spokesman Billy Bragg says, "Never mind that this is a shameful attempt to pass responsibility on to another sector of industry, the question remains whether or not such measures will have the desired effect. Technology has so far stayed ahead of enforcement. Any unauthorised file-sharers who fear being caught out can simply encrypt their exchanges."

As a group, FAC is opposed to copyright infringement, but it has also stated that, if technology enables access to music for free, the public will take advantage and that the new generations of music lovers have no wish to pay for their music any more. FAC has also called for an alternative method of payment.

Bragg has also called for a subscription service, based on peer-to-peer networking, because it's the most convenient method of accessing music.

Such a P2P system would spell the end of the music industry's control over distribution. As Bragg ponders, "is this the real reason why they seem determined to clip the wings of the fledgling digital industry before it can fly?"



has enabled a vast amount of music to be unleashed onto the market.

Internet piracy may be having an adverse affect on sales but so, surely, is the wider choice afforded by the internet boom. After all, if you have £100 in your pocket and a choice of two bands to spend it on, then if they're lucky, each band may receive £50. If you're instead offered 1000 bands to choose from, most of those bands will receive little or nothing. Just look at MySpace: this site alone - and it is but one of its kind among many - hosts a staggering total of three million bands and artists. Most of these acts are new and offer their wares directly to the public via their own websites. Our incomes have remained relatively static, but our choice has jumped way off the scale, so it's no wonder there isn't enough cash around to enable every musician to

make a living from their music.

Van Der Sar adds a further point: "The fact that piracy exists and so many people take part is an indication that something is fundamentally wrong, that the music industry is not offering something that they should be offering. Instead of fighting piracy, they should come up with a competitive business model."

If you talk to the record industry - or its mouthpieces, such as the BPI - they firmly believe that that's exactly what they're already doing. However, to draw a parallel with plumbing, they believe that you have to stop the leak first, educate people to not start the leak again, then offer an improved system.

## Plugging the gaps

"You've got to have all three working together: enforcement, education and a new system", says the BPI's Director of Public Affairs, Richard Mollet (left). "There's no point in saying, as some do, that we don't need enforcement and that we'll leave it to the market - legal sites find it very difficult to get up and running when they're competing with 'free' music".

To that end, the BPI has been working with the government to produce legislation to stem the piracy problem. The new Digital Britain Report, created by the Department of Business is now out, detailing governmental proposals on dealing with unlawful file sharing. "The report introduces legislative requirements for ISPs to tackle unlawful file sharing on their networks - a first," says Mollet.

The BPI doesn't think that the government is going far enough, though. At the moment, the government wants to instruct ISPs to notify infringers, then to retain a private database of repeat offenders, to make it easier for rights holders to sue those who persist in breaking the law.

"We think that this package will fail," says Mollet. "Firstly, this is because the government assumes that 70% of infringers will be deterred by the warnings. However, we think the evidence is flimsy. We think it's an overambitious aim of the policy to assume that you can get rid of 70% of piracy in one fell swoop through letter-writing. Even if it did, you're then offering up 30% of infringers to the rights holders for suing - which we reckon is around two million people. This seems a little unbalanced, costly and may lead to a very negative reaction."

Therefore, the BPI wants to deal with repeat infringers more directly, as Mollet says: "We would impose network level measures and restrict copyright infringers from accessing certain sites or using certain protocols. We think that sort of requirement would have a better chance of reducing file sharing by 70-80%."

So, the published report raises more questions than it answers, and some other observers wonder if the proposals will become reality, particularly given that



"It's an overambitious aim of the policy to assume you can get rid of 70% of piracy in one fell swoop through letter-writing"



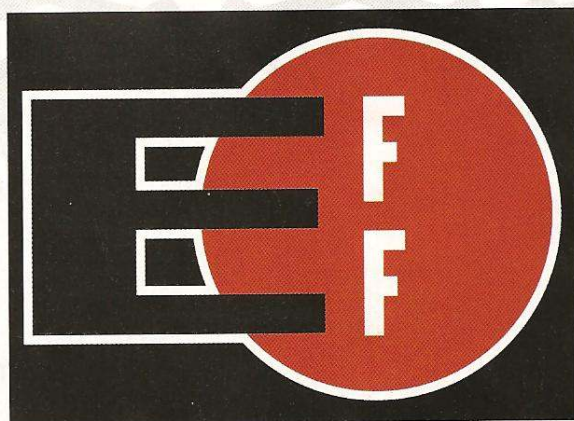
the minister responsible for the report is leaving the government, which, in itself, is not looking all that healthy at the moment.

## The little things

Porcupine Tree's Steve Wilson doesn't believe the motion will work. "Part of the problem is that they talk about large pirate sites. If I go on the internet, about 90% of the links to downloading my album are on individual blogs. These are not massive companies - they wouldn't be recognised as a pirate site. These are not sites with 10,000 downloads per minute - only 25 people might download off that site. If you have enough of these types of sites, then that becomes, cumulatively, a problem. This is already happening, so the legislation won't work in this case."

So what is the answer? Where do we go from here? To the USA, possibly, and an idea that's been promoted internally for a long time, and is, only now, gaining hold in many other countries, including the UK. It's a concept that's also finding appeal across other, associated technologies - see *All you can eat* - and it might just be the saviour of the entire music industry.

The idea is based on the same system that has been used to collect revenues



The Electronic Frontier Foundation reckon the answer to music piracy could be an unlimited download license for a small monthly payment

rights owners.

"The chances are that it won't be perfect and, initially, not every artist will benefit as much as they should, plus people would have to choose to participate. But right now, there's a ton of money that has essentially been left on the table, because nothing is happening. Even if a reasonable percentage of the people taking part in file-sharing decided to pay a minimal amount of money to their ISP in exchange for some peace of mind - they'd still know that whatever they're doing is perfectly legal and OK - which creates a massive pot of money relatively quickly that can be apportioned to the artists. At the moment, the key problem is that artists are not getting paid and, understandably, they're frustrated."

So what do we have here? A music industry that badgers the government for action against piracy, then expresses disapproval when it acts; musicians who both love and hate file-sharing, for very conflicting reasons; and listeners who express their love for music and declare undying loyalty to artists whilst demonstrating a careless form of greed in their obsessive downloading activities. It is, quite simply, a transitional mess.

Sorting out this mess won't be easy and definitely won't be done overnight. Yet the license-type idea is becoming a more popular concept and gaining support from many sectors: "I think music is going to be all about subscription - the Sky channel for music, in effect," says Just Music's John Benedict. "People will subscribe, giving them access to music wherever they are and whenever they want it."

Such a system will have to be cheap enough or effectively free (and paid for by third-party taxation - hidden in your broadband bill, for example) to encourage people to dump the pirate sites and get them to recognise the illegal download sites as the slow, clunky, security risks that they really are. Until then, we await a definitive answer, a killer application - musical salvation, no less. **cm**

**"They pay for a license that is legally required for them to be able to play music at their establishment"**

from music played in clubs, restaurants and on the radio for many years - a license, in other words. These companies pay for a license that is legally required for them to be able to play music, or to broadcast it, at their establishment - they submit a report of what music was played and the income from the licenses is divided up between the copyright owners, depending on popularity. The more an artist's music is played, the more money they get.

## Fair play

So why not introduce a similar system for peer-to-peer downloading? Corynne McSherry, Staff Attorney for the Electronic Frontier Foundation, thinks that this system could very well be the answer. "It's going to take some work to flesh it out," she concedes, "but, in essence, the idea is for ISPs to offer unlimited downloads in exchange for a fee of £5 per month or whatever. You'd also be able to share and do whatever you wanted to do freely. Then the money is divvied up to the



Vodafone's Head of Music, Dominic Donoghue, is rightly proud of his company's DRM-free deal with many record labels

## All you can eat

Many observers see the future of obtaining music in the licensing or subscription model. So for a fee, you get 'all you can eat', as it were. We've seen a limited version of this model announced by the ISP Virgin Media, which has agreed a deal - the first of its type, as far as we know - with Universal to make its entire catalogue available, DRM-free, for an as-yet-undisclosed monthly fee.

In addition, Vodafone has released its answer to the problem of accessing music and halting piracy with its DRM-free, MP3 download service, organised after talks with Universal Music, Sony Music Entertainment, EMI Music and most of the big independents. £5 per month provides access to over one million tracks.

Morgan Donoghue, Head of Music for Vodafone, wants to get rid of DRM: "When you buy something, you want to be able to own it and do what you want with it for your personal use. We thought we needed to deliver what the consumer wants. So we approached the record companies about doing DRM-free deals. Negotiations went on for over a year."

Donoghue sees DRM as an unnecessary intrusion: "It restricts people's ability to be able to put music on the device of their choice. DRM-attached music actively encouraged people to steal music because, with DRM, you couldn't do what you wanted with it. DRM was having a negative impact."

"You can't treat your consumers like criminals. We want to work with our customers. Using our model, everyone is happy. Us, the customer, the labels and the artists. That is the business model that the industry should move to. I hope that the models that we come up with give us some leadership in this space. Therefore, we make money and others will see that it is the right way forward, making the industry as a whole grow."





# CHARLIE

# MAY

The ace producer explains the  
three-step approach behind his  
work with house/techno duo  
Spooky and dance legend Sasha



> One of the great things about using software applications to make music is that there isn't a 'right' way, or one set of tools that can be described as 'correct'. This means that there are plenty of diverse stories to tell. Every month in *Computer Music*, we witness the very different methods by which musicians utilise technology in their work. Only last month, Jon Hopkins revealed the rather antiquated, simple but perfectly formed Cubase and Sound Forge setup behind his stunning productions. And this month, we're going in the exact opposite direction, discovering a compositional process that takes in all types of software.

Charlie May - half of house and techno production legends Spooky - has a three-part approach to music production. It's all about a "change of perspective" at every stage and a step up in audio quality. The results are spectacular...

## From acid to Sasha

Charlie May and Duncan Forbes have been making music under the Spooky moniker since the heady days of acid house in the early 90s, but they found each other long before that.

"Duncan and I grew up together," says Charlie, "born within about ten feet of each other and about two weeks apart, so he's never not been around me! I grew up with music - I started learning the piano when I was about four. I was really forced into it and I hated it. It was like doing physics at school or something. But then I started making my own music, my way - I used to work in a cheese factory, just so I could buy a four-track and a reverb!"

"Although I grew up listening to Depeche Mode and Yazoo in the early 80s, I wasn't really a pure electronic geek. Yet, making electronic music meant that you could do it all yourself and be a one-man army. Duncan was just as enthusiastic - not so involved in the academic side of the technology - but he was buying a lot of records and had really good hi-fi systems, so we eventually decided to start a band together."

Duncan was also working for Brainiac Records and getting involved in the early house and techno scene in the late 1980s. Using Duncan's contacts, the duo got in touch with Guerilla Records, who had heard their demo.

"They threw us in the studio of William Orbit," Charlie recalls, speaking of Blur and Madonna's producer. "One minute I was a student, the next I was in his studio! It was a really big deal and it was a lovely way to be introduced to recording music - we were lucky to be in the thick of it."

And in the thick of it they certainly were. Spooky released the track *Don't Panic* and the album *Gargantuan*, which went on to become blueprints for progressive house. The duo also became the most in demand remixers of the day, reworking everyone from Sven V  th to the aforementioned Orbit. This eventually led to a meeting with Sasha and production work on some of the biggest releases in dance history.

"We had the same lawyer," Charlie says, when asked about that initial meeting. "We met him and I dug out this old DAT with one riff on it that me and Duncan had tried working on five years previously. It never happened, but Sasha thought it was great and that eventually turned into *Xpander*. We hit it off and saw eye to eye on a lot of things."



Ableton Live is Charlie's workhorse application for composition and live work

Since that encounter, May has pushed the buttons with Sasha on both of his *Involver* albums. These are heavily reworked and quite brilliant mix albums that both display sonic excellence on a progressive journey through some of the best dance tracks of the last decade. Then there's Sasha's own *Airdrawndagger* - that one was a long time coming...

"Yeah, he'd been making excuses *not* to do it for years," laughs May. "It became a running joke, but we eventually got round to making it in Amsterdam, which was probably not the best choice of venue! But somehow it worked out and I really enjoyed doing it."

## Production perfection

Working within the Sasha setup has certainly helped May's own production ethos: "I like to take what I've learned whilst with someone else, then apply it when I'm on my own - and vice versa."

So how does Charlie work up a track?

"It depends on how I've laid out my studio," he says, "or if I'm just with my laptop - then I get stuck into Ableton Live. I'm not so good at production while travelling, though - I like to enjoy the journey! However, it was always my dream to use a laptop. I remember, when we started out, saying, 'One day we'll have all of this in a laptop and we won't need hardware!' It was around the time of *Airdrawndagger* that it actually happened. And it's as good as we dreamt, but I don't do it as much as I should."

"I use Logic and Live equally, but for different things," Charlie continues. "Live is brilliant for writing - it's like rubber band music - and you can throw anything in with anything else. It's a blessing and a curse, though, because I don't like the master summing bus. Some people can use it - James Zabiela seems to get brilliant results with it - but I don't like mixing in it. I use ReWire to get everything into Logic and you can really hear the difference. It's great to have a cutoff point between writing and mixing, but

## Charlie on playing Live

How does Charlie's live setup vary from his studio rig?

"We have two laptops, both with Ableton Live installed on them. Duncan has all of the tunes and does most of the mixing. On mine, I have little bits of those tunes. We don't sync the laptops together, but just hit the Spacebar at the right time, then bash things together from there. It means you can add loads of stuff over the top and make more of the dynamics of each track. It keeps you busy actually doing something as well - you're not just playing a record! Duncan is a real advocate of jamming live and likes to sit on the faders the whole time, twiddling."

Spooky have some live dates planned for the summer, so check them out if you can. Charlie will also soon be completing his solo album.





Charlie's studio is designed around his three-step approach to production

there is definitely a difference in sound quality."

And while we have Charlie on his soap box, there's more about Live that annoys him...

"Live reads MIDI Time Code but doesn't generate it. If it did, I could save two days on every track. I have to ReWire it into Logic, which generates MTC and talks to the iZ Radar digital recorder for making a 24-track master - I then use an analogue desk for mixing."

And so we come to the three-stage production approach that we mentioned earlier. May produces his music in Live and Logic, then transfers the results to his iZ Radar recorder. We'll let him explain why...

"I mix inside the computer sometimes," he

results after it's been through Radar and the analogue desk, and it's quite stunning. Sure, he will have added some EQ along the way, but the mix certainly sounds more... well, *mixed*. Again we're talking 'perfection' - clearly something that May feels strongly about.

"The whole sound quality thing is, for me, so important," he says. "We have MP3s, which are the biggest problem for music right now, because you're throwing out 90% of the track. Sometimes I don't mind bashing out a tune really quickly, as you get a good, punky vibe that way. But, if I'm responsible for writing, mixing and showing the output of my entire studio, I want it to sound good."

"The whole sound quality thing is, for me, so important. We have MP3s, which are the biggest problem for music right now, because you're throwing out 90% of the track"

says, "but I generally find that, at that point, I'm bored with the computer, so I need a fresh perspective. I need a big red button in the studio to push called 'fresh perspective'! Also the Radar has the best digital to analogue converters, so the sound quality improvement by the time it comes up on the desk is really big.

"There are downsides to it, too," May adds. "It takes longer, and if I want to change something at the last minute, it's a bit of a hassle, as I have to go back to the computer before bouncing it to the Radar again."

Charlie demonstrates the difference in quality between one of his mixes from early on in the production process, compared to the

## Rhythm composer

So, we're back to the compositional process...

"I tend to layer kick drums together," Charlie says. "I'll blend a couple together with different qualities - one will have a click or a sub, for example. I never use the same kick twice; I think that each track warrants a different one. You'll have favourites, for sure, but you might change the kick right at the end. I have folders full of them and they're the easiest thing to sample off other records. I take drum sounds from everywhere, really. I like the sounds in Live, or software like Sonic Charge  $\mu$ Tonic, or iZotope iDrum, or even my Roland R-8, which has a fantastic sound."

Charlie's computer really is the central hub at this stage, feeding out sounds via a patchbay to a rack of outboard gear, then sucking the results back in again.

"I use a lot of outboard kit, like Eventides and all sorts of wondrous effects," he says.

"Everything goes through a huge patchbay, so I am effectively building 'instruments', if you like, then I record it back into the computer. It's a really good way of working. You just take one idea and split it off into different areas. Take a sound and work off it. I tend to use a lot of effects, but effects used as synths.

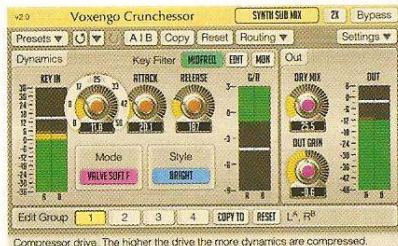
"I also use a lot of automation," he continues. "That's one of the wonderful things about using a computer. It's really crucial. We never had that luxury, and I remember when we had to do everything live on the desk. Now it's great that you can really make the most of the dynamics of your track, as you come into drops and breakdowns, and all that kind of stuff."

And what about synths? Soft or hard?

"I use everything and go from one thing to another. The luxury is that you can use very different things on different days, like the Way Out Ware TimeWarp 2600 - I had a real [ARP 2600] that needed a lot of servicing, but even though I put on a lab coat and tried to nurse it back to health, I had to stick it on eBay in the end and get the Way Out Ware version instead, which really is very good. I also have the Arturia model, with its amazing arpeggiator. I love a good arpeggiator, which is why I also want to get Spectrasonics Omnisphere. Anything with a little sequencer on it - I love that. It goes back to the Roland TB-303 idea and makes you write very simply. That's what you need: simple but good parts that work well together.

"I also have Synplant by Sonic Charge," he continues, on the subject of his other favourite synths. "It's just fantastic - it's a totally different way of working, which is very organic. It's got to





Voxengo's Crunchessor (above) and Elephant are two of the newer plug-ins on Charlie's hard drive

## Charlie on plug-in effects

As well as all of those outboard processors, Charlie also has many software effects in his arsenal...

"I use a lot of the Ableton Live plug-ins," he says. "The ones in Live 8 are fantastic. I use the limiter at gigs. I also call upon Logic's effects, which are brilliant. I've just got a load of the Voxengo ones, too, including the Crunchessor and the Elephant limiter - they're really very good. I have some old Sonalksis compressors - I really love dynamic effects. I have SFX Machine plug-ins, PSP effects, Camel Audio stuff - everyone uses that. FabFilter's stuff is brilliant. Then there's the Sugar Bytes Effectrix processors. I want to get the new version of Audio Ease Altiverb, too, which I've heard and can honestly say sounds amazing."

be Ulrich Schnauss' wet dream - all wonky, long sounds that blend differently. I use Native Instruments' Massive, too, and I also like the simple NI synths, like the Pro-53 and FM8."

## Tools of the trade

After a couple of decades making music, May certainly has plenty of advice to give, especially when it comes to computer-based production.

"I have a zero tolerance policy for clogging my computer up," he says. "I have to really like something before putting it in there. If you're not careful, you'll end up with a rubbish tip of stuff that you don't know very well. The key to getting good sounds is to know the synth inside out. I'd much rather have one box that I know well than all of the plug-ins available to man. You need something like a toolbox or something that does just one thing very well."

"You have to be disciplined," he continues. "It's so easy to fill your computer up with crap, and I'm not just talking plug-ins. I mean, you have photos and recipes for God's sake! Get it out of there! I think it's a 'laptop problem', and sometimes I think that the reason I've bought a new computer is simply because I've filled the other ones up. I don't want to back it up on a another drive, because I always want it right there, so I buy another computer with a bigger drive and fill that up - it becomes your trash!"

Charlie's final piece of advice involves actually getting away from the computer.

"It's important to eventually leave the track that you're working on," he says. "I'll come back to something a week later and there will be one thing that stands out. New perspective is very important. After a while of concentrating on one thing, I don't know if I'm making a track or playing Tetris! I find that, physically, I don't want to be a lump in front of the computer - I'll start feeling like a brain in jar after a while. I have to get up and twiddle some real knobs." **cm**

# down load store

[www.timespace.com/downloads](http://www.timespace.com/downloads)

**TH1 Triode**

**£69.00**

Software guitar effects suite featuring: 3 amplifiers, 9 cabinets, 6 microphones and 22 stomp boxes.

*Get some TH1 power at a great price!*

|                                                                                            |                                                                                      |                                                                                 |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <p><b>Voices of Africa</b><br/>Wav<br/>84Mb<br/><b>£14.67</b></p>                          | <p><b>Minimal Underground Techno</b><br/>Multiformat<br/>450Mb<br/><b>£24.95</b></p> | <p><b>ANIMAL</b><br/>UNDERGROUND TECHNO<br/>£24.95</p>                          |
| <p><b>Big Fish Audio Tonehammer: Propanium</b><br/>Kontakt 2<br/>1Gb<br/><b>£39.95</b></p> | <p><b>Monster Midi Pack 2</b><br/>470+ Midi files<br/><b>£13.50</b></p>              | <p><b>Dubstep Constructions</b><br/>Multiformat<br/>1.1Gb<br/><b>£19.95</b></p> |
| <p><b>Score &amp; Break Producer</b><br/>Apple Loops, Wav<br/>660Mb<br/><b>£30.36</b></p>  | <p><b>Minus Morph</b><br/>Multiformat<br/>930Mb<br/><b>£34.95</b></p>                | <p><b>Filthy Electro House</b><br/>Multiformat<br/>310Mb<br/><b>£19.95</b></p>  |
| <p><b>Housemasters</b><br/>Multiformat<br/>1.18Gb<br/><b>£40.99</b></p>                    | <p><b>Drumalogue</b><br/>Wav, Kontakt<br/>362Mb<br/><b>£24.95</b></p>                | <p><b>Killer Horns 2</b><br/>Wav<br/>474Mb<br/><b>£22.02</b></p>                |



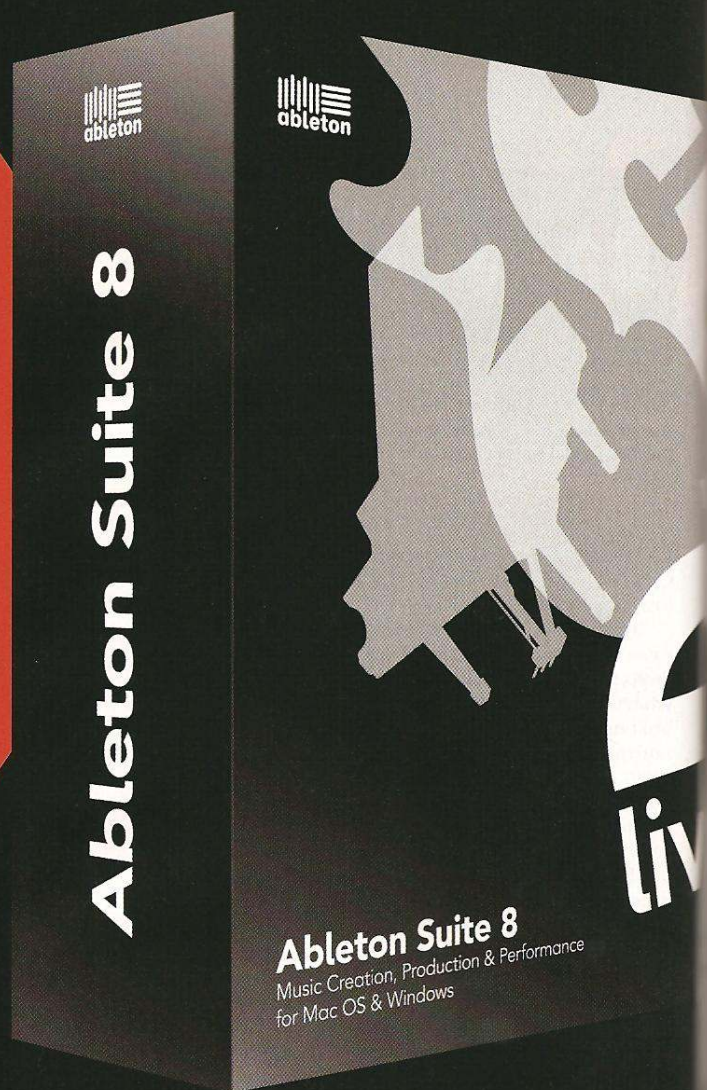
**Musical Inspiration**



WIN! WIN! WIN!

**£2050**  
of Novation,  
Ableton and  
KRK gear!

Live Suite 8, a Zero SL MkII,  
a nio2|4, a pair of RP6 G2s  
and the ERGO system!



# COMPUTER music > competition

Computer musicians of a certain age will recall that £2000 was once oft quoted as the bare *minimum* that you'd need to spend on gear to be in with a chance of producing pro-quality tracks. Thankfully, two grand today will stretch a lot further than an Atari ST and a crusty old Akai sampler - why, you could go all-out on a fantastic setup like the one pictured on this very page! But don't whip out the credit card just yet, as we've teamed up with the generous gents at Novation to offer one lucky **cm** reader the chance to get all this bonza gear... for now!

As Ableton's UK distributor, Novation kick off this mountain of gear with a copy of **Ableton Suite 8** (£600), containing **Live 8** (9/10, **cm139**) and lots more besides.

**TERMS AND CONDITIONS** By entering this competition you are agreeing to receive details of future offers and promotions from Future Publishing Limited and related third parties. If you do not want to receive this information, please text the word STOP at the end of your message. Texts will be charged at £1.00 plus your standard network tariff rate. The winners will be drawn at random from all entries that answer correctly between 03/08/09 and 03/09/09. Winners will be notified within 28 days of the closing date of the competition, and will then be sent their prize free of charge, to a UK delivery address which they must supply. Only UK residents aged 18 and over may enter. No employees of Future Publishing Ltd or any company associated with this competition, or any member of their close family may enter. Prizes are as stated and no alternatives, cash or otherwise, are available. Future Publishing Ltd



win ableton, novation and krk gear / competition <



Direct from Novation central comes the sleek new **Zero SL MkII** (£330) controller, complete with **Automap 3** technology that can, er, automatically map the controls to the currently selected plug-in and much more. We reviewed the Zero's keyed-up cousin the 25 SL MkII in **cm140** and awarded it a 9/10 and our Performance award - the Zero is much the same and makes up for its lack of keys with 60mm sliders and a crossfader. **Novation's nio 214** (**cm122**, 8/10, £150) will handle all of your audio interfacing needs. It also comes with the **nio FX rack**, with great effects from Overloud, Focusrite and Novation. It's got two ins (mic, line or instrument), four outs and dual headphone sockets.

Not that you'll be wanting to use

the cans too often, as Novation are tossing in a pair of splendid **KRK RP6 G2** monitors, worth £400. We checked out the slightly smaller RP5s back in **cm131**'s monitor round-up and were most impressed with the solid bass and detailed top end they served up - we'd expect that the RP6s are even better. In fact, they'll sound even more impressive when you get the **KRK ERGO** (£550) room correction system plugged into your rig and Novation are throwing in one of those, too! As well as improving your studio sonics immeasurably, it does double duty as a handy monitor level control and speaker switcher, and can even function as an audio interface.

Last but not least, there's a funky **Novation laptop bag**, worth £20!

One winner will receive all of these incredible things. To enter, simply text the keyword **NOVATION**, then your answer - **A, B or C** - and **email address** to **87474**. Or, use the online form at **www.computermusic.co.uk** (in the *Win stuff!* category) to send us your details and answer. Entries must be received between **August 3 2009** and **September 3 2009**, and the competition is open only to UK residents aged 18+.

### The question The KRK ERGO...

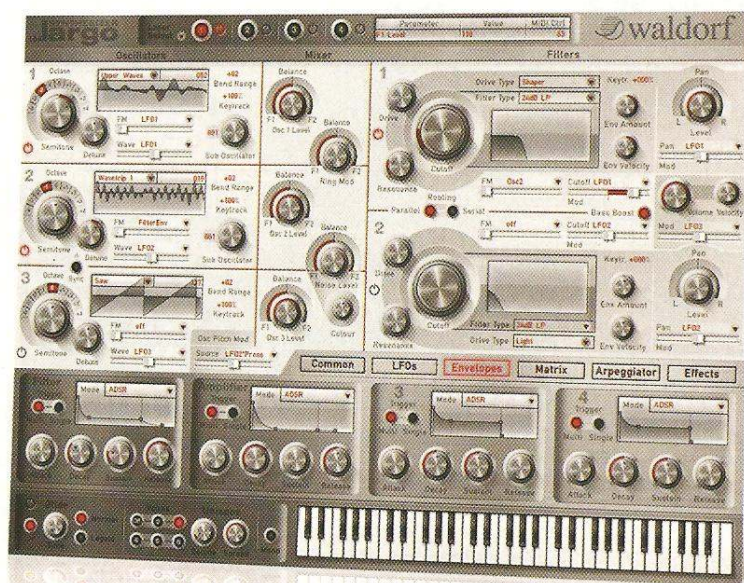
- A.** Is a room correction system  
Text: **NOVATION A** your.email@address.com
- B.** Is a suite of mastering plug-ins  
Text: **NOVATION B** your.email@address.com
- C.** Is also available in red  
Text: **NOVATION C** your.email@address.com

accepts no liability for any loss, damage or injury caused by any prizes won. Publicity may be given to any competition winners and/or entrants and their names and/or photographs printed. The editor's decision is final and no correspondence will be entered into. Where prizes are offered on behalf of an associated company, these prizes are provided in their entirety by these associated companies. Future Publishing Ltd cannot be held responsible for any failure to provide prizes as specified and all enquiries relating to such prizes will be referred to the associated companies. All entries must be received by the closing date. No purchase necessary. Copies of competition entry forms and winners list are available by written request from Future Publishing Ltd, 30 Monmouth Street, Bath, BA1 2BW.



# cm/reviews

The latest computer music gear tested and rated!



## This month

- 90 \_\_ Waldorf Largo
- 92 \_\_ Makemusic Finale 2010
- 94 \_\_ FabFilter Timeless 2
- 96 \_\_ Waves H-Delay
- 97 \_\_ Waves H-Comp
- 100 \_\_ Audio Damage Eos
- 101 \_\_ IK Multimedia Stealth Pedal
- 102 \_\_ Topten Software Cantabile 2.0
- 104 \_\_ MOTU Traveler-mk3
- 106 \_\_ Mini Reviews
- 111 \_\_ **cm** Recommends

## 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 \_\_ Give it a miss. A seriously flawed product that should be avoided
- 5-6 \_\_ Not too shabby. It's an OK product, but not without faults
- 7 \_\_ Good. Definitely worth considering
- 8-9 \_\_ Very good. A well-conceived and executed product. Recommended
- 10 \_\_ Excellent. Essentially faultless

## 90 \_\_ WALDORF LARGO

The hardware synth legends unleash a wicked new wavetable soft synth



## 94 \_\_ FABFILTER TIMELESS 2

The original version of this superb delay clearly wasn't quite timeless enough for perfectionists FabFilter



## 101 \_\_ IK MULTIMEDIA STEALTH PEDAL

We put the pedal to the metal with this sleek and sneaky controller/interface, disguised as a wah pedal



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

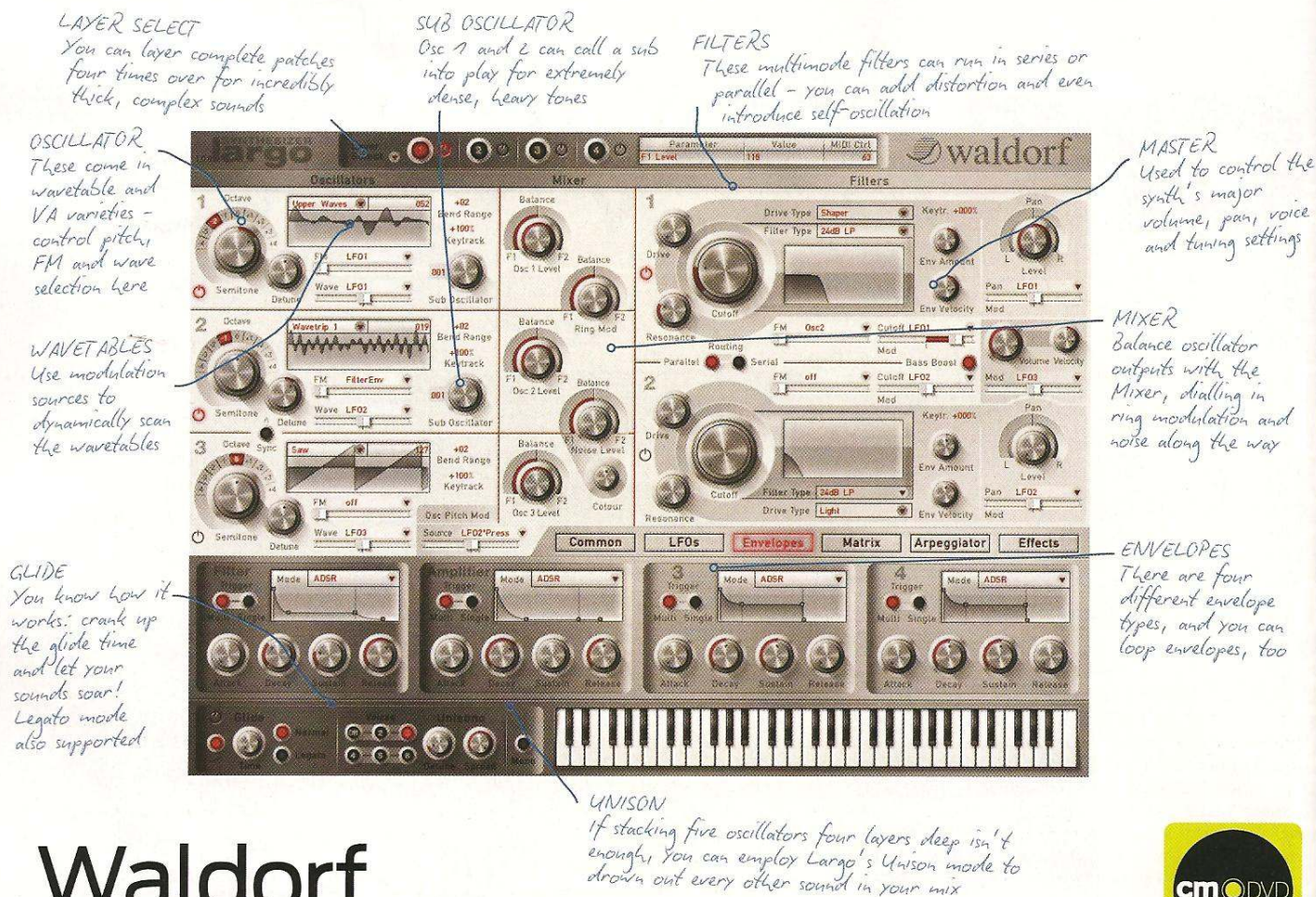


If the product exceeds expectations for its price, it will receive this gong



In the opinion of our editor, the best product reviewed in the magazine this month





# Waldorf Largo £175

PC MAC



The wizards of the wavetable return to the virtual world with a synth that draws on their legendary product line

## System requirements

**PC** Intel PIII 1GHz/Athlon 800MHz, 64MB RAM, Windows XP, VST host

**Mac** G4 800MHz, 64MB RAM, Mac OS X 10.3.9, VST/AU host

## Test system

**Mac** 2.4GHz Core 2 Duo iMac, 4GB RAM, Mac OS X 10.5.7, M-Audio Fast Track Pro, Logic Studio 8, GarageBand '09, Cubase 4

> Waldorf recently emerged from a brief hiatus with a new line of hardware synths that draws heavily upon their older instruments. This would be news enough for synthesiser aficionados, but the recent announcement of a virtual variant carrying the Waldorf name is, of course, much greater cause for excitement in the cm offices.

## Setting the table

Largo presents a familiar character. It's a cross-platform VST and AU plug-in, with each of the synth's four layers sporting a five-oscillator structure (if you include the sub oscillators). The third oscillator is a fairly standard virtual analogue model, with saw, sine, pulse (including PWM) and triangle waves available. More interesting are oscillators 1 and 2, which offer 68 wavetables culled from the Wave, MicroWave, Q and Blofeld hardware synths. These wavetables can be modulated dynamically (see boxout), and oscillator sync is available. Noise (with adjustable colour) and ring modulation are on hand, and you can dial in FM between the oscillators and noise generator. Adjustable

key-tracking is provided as well - crucial for far-out FM excursions and atonal effects. Unison and glide are on tap, too.

Waldorf's hardware is known for its exceptional digital filters, and Largo does nothing to tarnish that reputation. You get a pair of multimode numbers that can be arranged in serial or parallel paths. There are 12dB and 24dB variants, and the resonance can be driven into self-oscillation. If that's not enough, you can engage the Drive function for some serious grit.

Modulation is offered in the form of a trio of syncable LFOs, with the usual complement of sine, square, saw, triangle, random and sample-and-hold waveforms. The quartet of envelope generators are slightly less pedestrian, with four- and seven-stage varieties available, half of them loopable - looping envelopes are especially cool when used to sweep through a wavetable. Two of the envelopes are hardwired to the amp and filter, but that doesn't preclude them from also being used as sources for the other 50+ destinations via the mod matrix. We were also pleased to see the individual envelope stages available as modulation targets.



"Waldorf are known for their exceptional digital filters, and Largo does nothing to tarnish the reputation"

A fully customisable and highly flexible arpeggiator is present. You get 16 steps to play with and can adjust accent, timing, note length and pauses. Up, down and alternate modes are provided and you can also sync the thing to incoming MIDI clock.

Each of the instrument's four layers can draw upon a pair of effects slots. You can choose from Chorus, Flanger, Phaser, Overdrive, Delay and Reverb effects, though the latter pair are only available to slot 2. The effects aren't anything to write home about, but they will add some gloss to your patches.

## Table manners

The original PPG and MicroWave were at turns gritty and harsh, soft and sublime, plus they also mustered some wickedly spiky basses that could cause severe whiplash. However, Waldorf's later instruments traded that cold, digital sting for a warmer, buzzier character - nevertheless, when pressed, these could also dredge up some hard-edged basses.

As you might expect, Largo tends towards the thicker, hazier sound of Waldorf's latter-day wavetable synths. Unfortunately, many of the factory presets are generic and unimaginative, with too many being of the 'trance sting' variety or exercises in noodlery. Few of them show off the specific qualities that could make Largo stand out from the virtual crowd.

Having said all this, there are some winning presets to be found here, including some terrific, evolving pads and a couple of rhythmic patches that might give Korg's Wavestation a run for its money. We recognised some of the gimmicks from the MicroWave series (the 'talking' patches) and there were a smattering of tasty digital bells to be had, along with a couple of swept wavetable patches that put a new spin on an hoary old trick.

Disappointingly, none of the presets showcase that special, aggressive bite that's typical of the instruments from which Largo's wavetables are taken. Mind you, it's more than capable of producing those sounds, and with



Largo offers numerous wavetables and a shedload of modulation options to bring them to life

## Do in' the wave

A lot of manufacturers and developers claim to offer wavetable synthesis. However, often their claims are a misappropriation of the term - instead, they turn out a run-of-the-mill ROMpler. Serious synthesists apply the term to the dynamic wavetable synthesis first seen on Wolfgang Palm's legendary PPG Wave series of synthesisers.

The oscillators in these instruments call upon a series of single-cycle waveforms strung together in a linear fashion and stored as a 'wavetable'. This technique provides hundreds, if not thousands, of waveforms from which to choose. More importantly, these can be accessed dynamically, so

that an envelope generator can, say, modulate wavetable position, creating sounds that morph over time. This makes a wavetable synth ideal for slow, evolving pads or grainy timbral shifts.

Largo brings with it 68 wavetables from some of Waldorf's most popular instruments. There are ever-changing formants, resonant bell tones, modelled strings, haunting digital soundscapes and much more. With a staggering number of modulation sources on tap, there's no shortage of ways to animate them. In short, even the greenest of sound designers should have no trouble in generating unique and interesting tones.

only a little tweakery, we were able to dial in reasonable facsimiles of our favourite wavetable synth patches.

While we're on the subject of presets, it should be noted that thumbing through the patches in Largo's built-in browser is not without its difficulties. Some of the them take many seconds to load and clicking on the increment arrow often results in rapid, uncontrollable advancement through the patches. Frustrating. Therefore, you'll want to use your host's patch browser where possible.

## Table topper?

All in all, Largo is a good synthesiser with the potential for greatness. The experienced synthesist could have a field day with the vast modulation options and rich, dynamic wavetables, and we have no doubt that clever programmers will whip up some killer sounds. If you want motion-filled pads or weird rhythmic effects, Largo has got the goods and then some. As for those classic wavetable patches, you may have to hunker down for some lengthy sound design sessions. **cm**

Contact Hand In Hand, 01752 696 633  
Web [www.waldorfmusic.de](http://www.waldorfmusic.de)

## Alternatively

### Korg Legacy Digital Collection

N/A >> N/A >> £137

Contains a faithful recreation of the wavesequencing Korg Wavestation

### ConcreteFX Kubik

cm79 >> 9/10 >> £54

This underrated wavetable synth has a lot of power for the price

## Verdict

**For** Magnificent modulation options  
Wavetables from Waldorf's best synths  
Modulatable envelope stages  
Build massive sounds four-layers deep  
Advanced arpeggiator

**Against** Unimaginative factory sounds  
Built-in browser is buggy

It's not the be-all and end-all of synths, but Largo does the Waldorf name proud and will no doubt appease wavetable fanatics



Apocalypse! Largo's arpeggiator is one of the modern features applied to its classic wavetable synthesis core



### TRANSPORT CONTROLS

Hear your score played back, or start at any bar by holding the Spacebar and clicking

### TOOL PALETTES

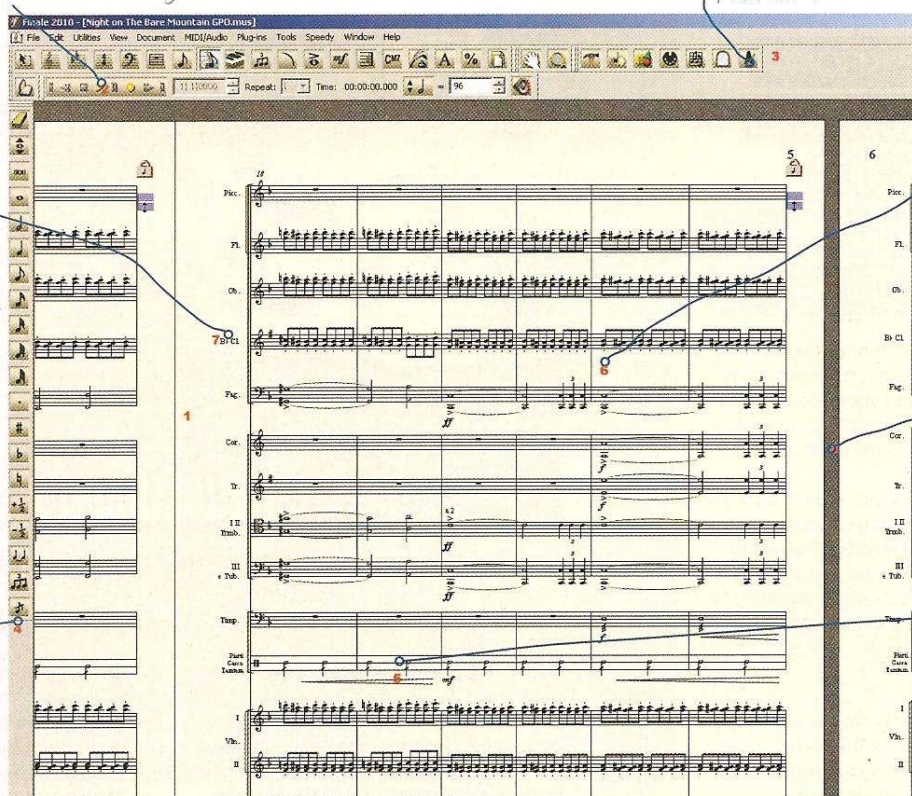
The display can be customised to your needs - Main and Advanced Palettes are shown here

### TRANSPOSING INSTRUMENTS

Transposition for instruments, such as clarinet and trumpet, can be easily switched on and off to create a concert score

### SIMPLE ENTRY PALETTE

The main tools for basic note entry, many of which can be selected via keyboard shortcuts



### ARTICULATIONS

Accent, staccato, slurs and more - turn on Human Playback to hear them

### FORMATTING

Control precisely how Finale handles page turns, plus staff and note spacing, etc

### DYNAMICS

A full range of dynamic changes are available: f, p, crescendos, etc

# MakeMusic PC MAC Finale 2010 £400



With rival scorewriter Sibelius also receiving an update, can MakeMusic's effort stave off the competition?

## System requirements

**PC** 512MB RAM, XP/Vista 32/64, 2.5GB hard drive space

**Mac** G4 CPU, 512MB RAM, Mac OS X 10.4, 2.6GB hard drive space

## Test system

**PC** Intel Core 2 Duo 1.86GHz, 1GB RAM, Windows XP SP2, E-MU audio interface

> If notation's your thing, then you've probably at least heard of MakeMusic's long-running Finale score editor. From the beginning, its purpose was to produce quality scores and parts, and it's long been used by professional musicians and publishers for this very reason. The manufacturers of all modern scorewriting programs stress how good they are at playing back your music, too, but at the end of the day, they're essentially very smart, specialised graphics programs, not sequencers, and that's how they should be judged. In this regard, Finale comes out looking very good indeed.

## Compose yourself

The software ships on a DVD, with a 200-page book of tutorials and a quick reference guide to keep by your computer. Installation is a cinch and you can authorise the software via the internet, phone, fax or even snail-mail. To quickly recap on what Finale does, the program enables you to input notes and chords, articulations and dynamics, words and graphics, to create printed music to professional standard. Use a MIDI keyboard, if you like, otherwise

mouse and QWERTY keyboard input can do the same job, albeit a little slower. Scores and parts reside in the same file, so that if you edit a trumpet part, for example, the full score will update to reflect it, and vice versa.

A full range of musical labelling (slurs, bar numbers, rehearsal marks, repeats, etc) can be inserted and infinitely adjusted to your liking, and the resulting score can be meticulously formatted to appear on the printed page just the way you want to see it. Needless to say, as with any major application, it takes time to learn thoroughly, requiring patience and hard work to produce a score to the most exacting standards!

## New for next year

So, onto what's new for 2010, and seasoned users will be pleased to hear that both entry and display of percussion parts have received a comprehensive overhaul, with added visual feedback on what kit piece each note of the staff represents, and the ability to copy back and forth between regular notation staves. Percussion Layouts control how individual elements of the kit are displayed in the staff,



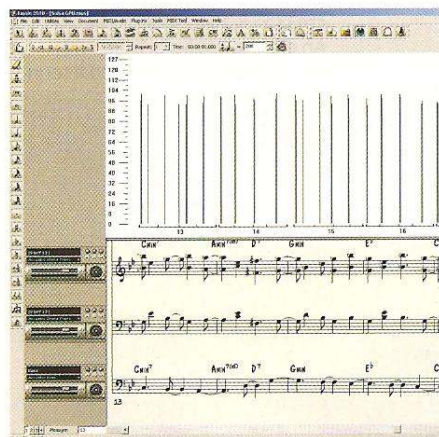
"MakeMusic have been exploring the software's audio side recently, searching for an edge"

and there's a Percussion MIDI Map to ensure correct playback.

Chord symbols have become easier to enter and manipulate, being positioned according to the beat at which they occur, rather than being attached to a particular note (which was previously an inconvenience if you didn't want to enter any notes on that staff). As with previous versions, you can play in or enter from the keyboard just about any conceivable chord symbol, and even create your own symbols for unusual chords. They can be played back, too, and stopped with the N.C. (no chord) icon.

To be honest, Rehearsal Markings were often tiresome to work with in earlier versions, but now they can be left to organise themselves, so that if you decide to delete one or add an extra one, the others renumber (or 'reletter') themselves, which is very handy indeed. The bar/measure numbering is also much more flexible, with different display styles possible for scores and parts.

Other improvements include a new Broadway Copyist font, support for JPEG, PNG and BMP image files, the ability to use VST/AU effects during playback, and some new Garritan instruments – see the *Sounding off* boxout for more information on these. Such audio-related features are undoubtedly attractive, but if we think of Finale as a tool for producing printed scores, then it's the improvements in the ease of input and the quality of output that are crucial. To this end, the aforementioned refinements, such as percussion handling, would seem important in the streamlining of workflow, whereas improvements in the audio field, whilst positive, are less relevant to Finale's main job. Less flashy but more genuinely useful are the clutch of pre-prepared worksheets, which should prove handy for those working in education.



A piece seen in the Studio View, which offers a pane for editing MIDI velocities directly



Above is line from a Beethoven score in Finale's eye-popping default display colours, although it's also viewable in a more standardised monochrome, if that's your thing

## Sounding off

Included with Finale is an expanded soundbank from Garritan, and joining the preexisting orchestra sounds are electric guitars and bass, a brushed drum kit, church organs, synth sounds and more. While it remains the case that anyone wishing to create a detailed and convincing audio track would be best off using a sequencer, these are still welcome additions, especially for those who use Finale's playback as a compositional aid.

Still, the primary purposes of having audio playback in Finale for most users will be note-checking with sounds that resemble the instruments they're allocated to, and secondly, to provide a hint of how the score might sound if played by real instruments – as a demo

version for others, perhaps.

Other Finale audio features, such as the importing or recording of a single audio track, may be useful for some musicians, but probably irrelevant to the majority who seek to use Finale purely as a scorewriter.

An audio rendition of the Mussorgsky score shown in the main screengrab is included on the DVD – the result isn't bad, though it's no substitute for a real orchestra, naturally. Likewise, we've recorded the opening of Beethoven's String Quartet in C# Minor. PDFs of this, as well as the first two pages of the Mussorgsky piece, are on the DVD, too, which will give you an idea of the print quality that you're likely to achieve with Finale.

## High score

Finale 2010 builds on an already impressive application, and the high mark awarded reflects this ongoing excellence as much as the value of the new features. Even in previous versions, you could create excellent printouts, so perhaps this is why MakeMusic have been exploring the software's audio side in recent years, searching for an edge – the same could be said of rivals like Sibelius, which we'll be reviewing next issue.

So do you need Finale? For banging out a few string parts or brass overdubs, your existing sequencer, if it has a score editor, may suffice. Otherwise, you could consider a lesser-endowed but considerably cheaper member of the Finale family – see the MakeMusic website for details.

But if you need to produce sophisticated and extensive scores and parts, up to publication quality, you should definitely consider Finale and try the save-disabled trial version. And lastly, existing Finale users should look carefully at the new developments in 2010 and ask themselves how much they would enhance the uses they put the software to. **cm**

Contact: MusicRoom, 01284 725 725  
Web: [www.finalemusic.com](http://www.finalemusic.com)  
Info: Academic edition, £234

## Alternatively

Avid Sibelius 6

N/A >> N/A >> £583

Finale's similarly powerful rival – we'll be reviewing this shortly

Notion Music Notion 2.0

cm122 >> 8/10 >> £200

Not as in-depth, but has a different approach to typical notation apps

## Verdict

**For** Mature, well thought-out software  
Reasonably priced  
Good set of playback instruments  
Excellent printouts are possible

**Against** Can be mouse-intensive  
Some new features not so useful  
Could be overkill for simple scores

While 2010 isn't a revolutionary update, Finale remains as great as ever for creating quality scores

9/10



# FabFilter Timeless 2 £100

PC MAC



A much-delayed update to one of the best echo plug-ins around, but is Timeless 2 truly worthy of a repeat performance?

> Has it really been three years since FabFilter unleashed Timeless, their ingenious dual delay? In 2006, there were already numerous delays available, both commercial and freeware, yet FabFilter proved to us that there was certainly room for more.

Everything that earned Timeless high marks back then is still in place. The effect remains a cross-platform VST, AU and RTAS plug-in, and FabFilter even offer a PC VST3 version. It's a downloadable product with non-intrusive keyfile copy protection. There's a PDF manual and built-in mouse-over help, too.

The architecture is familiar, with two discrete signal paths (L/R stereo or mid/side - see boxout), with independent control over each, such as different filter modes per side. Basic editing of the filter's parameters is carried out from the main window via a pair of interactive filter response displays. However, a click of these reveals a much more detailed filter section - indicative of FabFilter's interface ethos.

The delays themselves now offer a Freeze Buffer, which can be used to store a bit of incoming audio, playing it back continually while you manhandle the speed, filter settings and suchlike. It's a blast locking on to a snippet of audio and cranking the delay time way up for some bizarre pitchbending madness, courtesy of Timeless' tape delay emulation. Also note that there's a timestretching mode where the pitch does *not* change when you alter the delay time - this works pretty convincingly for most material but can also be abused to create far-out effects.

One window alone can't contain this expandable plug-in, but rather than offering tabbed pages, Timeless 2's parameters are presented in a single, scrollable view, which is a good thing, considering that there are now six LFOs (newly fortified with 16 steps) and six envelopes, not to mention four X/Y pads. So that's four more LFOs than last time and five more envelopes. There's a quartet of envelope



followers, too. Each source is represented as a button in the middle bar and a click scrolls the relevant mod source at the bottom of the interface into view.

As for hooking up sources to destinations, FabFilter's brilliant click-and-drag modulation routing and MIDI learn are still in place, making this one seriously malleable processor. From subtle ADT to swirling echoes, there's a lot of power offered here.

## Is there an echo in here?

At the risk of repeating ourselves (ahem), everything we said about the original Timeless still stands. There's no shortage of free delay plug-ins these days, but it's hard to put a price on inspiration, and Timeless is not only a versatile tool but a fun one, too. The more we threw at it, the more ideas it threw back, and we found ourselves whiling away hours, enthralled by what we were hearing. Timeless 2 is well worth the asking price. **cm**

Contact [info@fabfilter.com](mailto:info@fabfilter.com)  
Web [www.fabfilter.com](http://www.fabfilter.com)  
Info Upgrade deals for existing customers



## System requirements

**PC** SSE-capable CPU, Windows Vista/XP/2000/98/Me, VST2/3 or RTAS host

**Mac** G4/G5 CPU, Mac OS X 10.3, AU/VST2/RTAS host

## Test system

**Mac** iMac 2.16GHz Intel Core 2 Duo, 2GB RAM, Mac OS X 10.4.11, M-Audio Fast Track Pro, Cubase 4, Live 8, Logic Studio

## Alternatively

**PSP 608 MultiDelay**  
**cm96 >> 9/10 >> \$149**

A massive multitap job, this offers a wealth of control and modulation

**Ohm Force OhmBoy2**  
**cm33 >> 8/10 >> €79**

An oldie but still a goodie, with modulation, distortion and filtering

## Verdict

**For** Endlessly inspiring  
It's got the FabFilter sound!

Many new modulation options  
Great modulation routing system  
Mid/side operation

**Against** Do you need another delay?

If there's a delay-shaped hole in your plug-in folder, then you should find that Timeless 2 is a perfect fit

10/10

## Changing channels

Normally, you'll want to use Timeless 2 in the traditional 'Left/Right' mode, which enables two discrete channels of operation, each of which is pumped out of the appropriate output. However, there's another mode, offering the increasingly popular mid/side arrangement.

This routes the mid (mono) and side (stereo) elements to separate delay lines, enabling you to treat them individually, before they're converted back to a

conventional stereo signal. Therefore, you could, for example, apply a stronger delay effect to the side part of the signal while keeping the centrally panned information relatively dry.

And in case you're wondering, mid/side processing comes from the technique of mid/side recording, which uses a cardioid mic to record the centre channel, and a mic with a figure-of-eight pickup pattern to capture the side information.



# Waves H-Delay \$200

PC MAC



The new Hybrid line claims to bridge the gap between old-skool flavour and modern flexibility – first up is a delay processor

> Waves built their reputation on a line of precise, flexible and original plug-ins, but over time, they've drifted into the realms of hardware emulation, as epitomised by their SSL and API Collections. Their latest wheeze is to use the skills picked up during development of the latter to create their new line of Hybrid plug-ins.

The all-new H-Delay is similar in approach to the classic TC Electronic, Bel and Lexicon hardware digital delay lines – in fact, Waves actually mention the famous Lexicon PCM 42 in their literature. So what you get is delay (up to 3500ms) coupled with modulation and filtering, making it good for everything from simple slapback echo to flanging and phasing effects.

The most fundamental setting is the delay time, which can be set in milliseconds, BPM or synced to the host tempo, and adjusted with the Delay and Feedback knobs, or by entering times in the display window. There's also a handy tap-tempo pad. Although the plug-in doesn't have individual left/right timings, if you load it as a 'stereo' or 'mono to stereo' plug-in, it offers a ping-pong mode and you can also individually flip the polarity of each side. Pitch modulation is limited to a triangle-shaped LFO with adjustable depth, but with LFO frequencies up to 6kHz, there's potential for serious sound manipulation.

## Tap dance

There are flexible low- and high-pass filters (both go from 20Hz to 20kHz) for tailoring the delay signal and once these are set, you can use the Link knob to adjust them simultaneously, like a band-pass filter. There's also a lo-fi setting that makes the delay signal a little scratchier (it emulates the lower sample rate of old school digital delays), and four coloration settings via the Analog section. The manual simply says that these affect the sonic character of the effect – in practice, they add distortion to different parts of the frequency spectrum. We also noticed that the Analog modes work on the whole signal, ie,



also treating the dry signal. Although it's subtle, these Analog modes are great for rounding off the edges and making the results less clinical.

It's important to note that H-Delay exhibits variable pitch when you change the delay time, just like a tape delay – see boxout. We found that this can be useful and enormously creative, but on occasion, wished we could switch it off.

When combining short delays and modulated pitch, H-Delay produces excellent chorusing and flanging – with the LFO speed pushed right up, it gives off the more metallic tones of a ring modulator. Automating these moves can create smoothly-changing special effects, too.

Like all Waves plug-ins, Hybrid Delay offers cross-platform, cross-application support and rock-solid reliability, and as a straightforward delay, it's simple and sonically flexible. But its variable pitch behaviour is what marks it out, and with a little automation, this enables you to emulate the real-time 'hands on' sounds you'd expect from analogue gear. **cm**

**Contact** Sonic Distribution, 0845 500 2 500  
**Web** [www.waves.com](http://www.waves.com)  
**Info** TDM version, \$400

## System requirements

**PC** P4 2.8GHz/Athlon 64, 1GB RAM (XP)/2GB RAM (Vista), Windows XP (SP3)/Vista, VST/RTAS host or TDM system

**Mac** G5 Dual 2GHz/Intel Core 2 Duo 1.83GHz, 1GB RAM, Mac OS X 10.4.11, VST/RTAS/AU host or TDM system

## Test system

**Mac** Apple Mac Pro dual 3GHz, 3GB RAM, OS X 10.5.5, Logic 8

## Alternatively

### PSP Audiware PSP42

**cm51 >> 10/10 >> \$149**

Great Lexicon-style delays, though less immediate than H-Delay

### SoundToys Native Effects V3

**cm113 >> 9/10 >> \$495**

Contains EchoBoy, a flexible unit that emulates many older delays

## Verdict

### For Simple interface

Flexible sound with variable pitch effect  
Smooth parameter transition  
Extreme LFO range

### Against Tempo value is rounded up

Variable pitch cannot be bypassed  
Expensive

A fine-sounding delay that really comes into its own when used for special effects

8/10

## A pitch in time saves nine

Analogue tape and other vintage delay units had an uncanny and interesting side effect: when you shifted from one delay time to another, the pitch of the echoes changed. With tape delay, this happened because there was a single loop of tape used to produce the delay, and different delay times were achieved by changing the speed of the tape's playback. And sure enough, people soon began using this quirk intentionally to bend sounds on the fly.

With early plug-ins, this side-effect was lost in translation, but developers eventually began emulating classic tape delays. Even then, efforts to reproduce the effect in software were hindered by digital-sounding artifacts. Waves have managed to avoid this with H-Delay and have produced a delay plug-in with true hardware-style pitch behaviour that you can use in real-time for bonkers effects or as a pitch-modulating unit.



# Waves

## H-Comp \$200

PC MAC



Second in the Hybrid line is a compressor, again aiming to blend analogue-style processing with digital precision

> If you're after instant processing flavour, a vintage compressor emulation is often your best bet. However, these units typically lack flexibility, and therefore it should come as no surprise that the second Waves plug-in to follow the Hybrid ethos is a compressor.

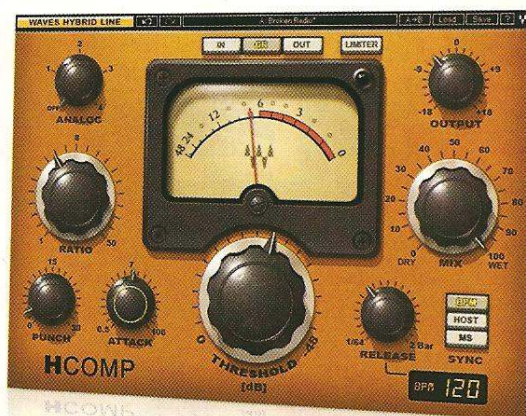
According to Waves, Hybrid Compressor (or H-Comp) aims to combine the sound of transformers, transistors and valves with the flexibility of a plug-in – hardly a new concept but one that's certainly worth pursuing. To this end, the retro, easy-access GUI with large VU-style meter also incorporates some up-to-the-minute features. Most obvious is the wet/dry mix control, enabling regular or parallel-style compression. Next up, the analogue-modelled release stage can be set in seconds (3ms to 3s) or BPM, or even synced to the host.

As you would expect, the attack stage is pretty flexible (0.5ms to 100ms), but more unusual is the Punch control (more on this later) and analogue emulation circuit offering four colours, too (see boxout). The compression ratio goes up to 50:1, plus there's an optional peak limiter. At the output, you'll also find a trim option (+/-18dB) – however, the gain makeup is handled automatically, which can be frustrating.

### Colour by numbers

H-Comp has a few headline-grabbing features, which we worked through, encountering further neat touches along the way. First up, the large meter switches scale depending on whether you're using it for input/output or gain reduction. Plus, you'll also find a useful yellow and red LED peak indicator in the corner. Most usefully, in gain reduction mode, it takes into account the output mix blend, so as you move towards a dry mix, less reduction is shown.

Now we come to the impressive Punch option, which enables you to preserve a sound's initial transient, even when using very fast attack times. This works extremely well, but we



found that it's influenced by the release times, so easing this back achieves the best results. On the subject of release times, syncing these to the host tempo is an interesting idea, and in this mode, the release knob labelling switches to beat multiples. In practice, because the onset of the release stage is dictated by the signal itself, it works best with very accurately timed or programmed sounds. Even so, it's a clever idea that can help you quickly dial in the settings.

Much like H-Delay, the analogue colouration options are fairly subtle, but each setting is quite different in character. We would say they're a nice touch but not the defining feature of H-Comp, as that honour goes to the excellent Punch control. However, we're a little surprised that H-Comp doesn't have sidechain options or a manual gain makeup setting. All in all, although H-Comp is impressive sonically, it would be good to see more of the features we've come to expect as standard on a compressor, to complement the more innovative stuff. **cm**

**Contact** Sonic Distribution, 0845 500 2 500  
**Web** [www.waves.com](http://www.waves.com)  
**Info** TDM version, \$400

### System requirements

**Mac** G5 dual 2GHz/Intel Core 2 Duo 1.83GHz, 1GB RAM, Mac OS X 10.4.11, AU/VST/RTAS host or TDM system

**PC** P4 2.8GHz/Athlon 64, 1GB RAM (XP) /2GB RAM (Vista), Windows XP SP3/Vista, VST/RTAS host or TDM system

### Test system

**Mac** Mac Pro dual 3GHz, 3GB RAM, Mac OS X 10.5.5, Logic 8

### Alternatively

**Voxengo Crunchessor**

N/A >> N/A >> \$50

Includes a number of colouration options and a wet/dry mix knob

**Sonnox Oxford Dynamics**

N/A >> N/A >> £200

Very powerful compressor with analogue/digital processing styles

### Verdict

**For** Easy-to-use retro compressor

Punch control is excellent

Onboard wet/dry mix

Analogue colouration settings

**Against** No manual makeup gain

No 'drive' control for analogue modes

No sidechain features

Sonically, this does just what it claims, although more control wouldn't go amiss

8/10

### À la mode

H-Comp offers four analogue-inspired colouration modes, so we decided to run a few tests to determine exactly what each one does. First up, the process operates on both the wet and dry signals, and each mode has a very distinctive sonic signature, typically adding low-level distortion to a specific part of the frequency spectrum.

Having listened through these, they appear to be emulating the various analogue circuits mentioned in the main

text – for instance, Mode 4 is fizzy-sounding, very reminiscent of a driven transistor circuit; while Mode 3 thickens things up, just as an audio transformer would do. And intriguingly, we did notice some differences between the corresponding modes in H-Delay and H-Comp.

All told, the effect is useful, if a little subtle, although with no individual drive control, the colouration is dependent on the incoming signal's level, which is frustrating.



**LOVE LIVE?  
DON'T MISS...**

# ABLETON LIVE

**The essential guide**

- > 80+ pages of brand-new tutorials, advice and tips
- > Improve your sounds, beats and tracks
- > Produce, remix and perform like a pro
- > Master Live 8's new tools and instruments
- > Exclusive collection of Live Packs on the disc





DISC INSIDE — PRO LIVE PACKS AND ROYALTY-FREE SAMPLES



Ableton Live  
The essential guide

# COMPUTER music

S P E C I A L

## ABLETON LIVE

### The essential guide

Make better tracks with the hottest new  
tools and techniques for music producers

magazine  
+ disc  
**£6**

#### HOW TO

CREATE AMAZING BEATS AND SOUNDS  
PRODUCE PRO-QUALITY TRACKS  
MASTER WARP AND GROOVE IN LIVE 8  
PERFORM REMIXES ON THE FLY



# GET IT NOW

#### Computer Music Special 37

is available from selected WH Smith, Barnes &  
Noble, Chapters and independent newsagents, or



**myfavourite**magazines.co.uk

On sale UK 5/8, Europe 12/8, North America 2/9, ROW 16/9



# Audio Damage

## Eos \$49

PC MAC

The prolific plug-in purveyors prove that they're in it for the long hall with their third shot at a reverb plug-in

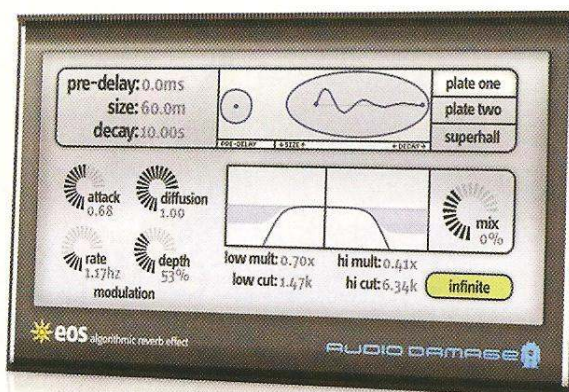
> There are a great number of reverb plug-ins on the market and at least one packaged with every DAW, so it's perhaps surprising that so many musicians are still on a quest for perfect plates, hallowed halls and righteous rooms. One theory goes that, because we've grown up on a diet of dodgy old digital reverbs, the ultra-realism of many modern reverbs isn't necessarily what we want to hear. Step up Eos, which is designed to be a simple but effective reverb plug-in with three algorithms – two plate and one hall – that take after the hardware digital reverbs of old.

Plate 1 is a mono-in, stereo-out affair, designed to sound like a simple 70s digital plate-emulating reverb, and it does an excellent job. It's clear without being too clinical. Plate 2 is largely more of the same, but it accepts a stereo input – the upshot of this is that you needn't worry about phase cancellation issues with stereo material. Then there's Superhall, which lives up to its name, being a vast-sounding emulation of the kind of digital hall reverb that one would associate with 80s productions.

On to the reverb-sculpting controls, then, and first up we have Pre-Delay, Size and Decay, which are displayed numerically alongside a rather beautiful little GUI section that gives a visual reference for the type of sound you can expect. You can manipulate the parameter values directly, or manhandle their corresponding GUI elements with the mouse.

The Attack control does what you'd expect, although its effect varies depending on the reverb type selection – with the Superhall type, for example, it lends a noticeable 'fade in' to the reverb tail when cranked up. The Diffusion knob's effect is similarly predictable, offering progressive softening of the dispersion of early reflections – this lets your reverb fit into a busy mix or really hammer in sparse sections.

Next is the modulation section, which can be used to either add a touch of realism or turn



things into a crazy special effect. As for the lowdown on the filter section, see the boxout.

Finally, there's the Mix knob (but no independent dry/wet levels), and the rather impressive Infinite button, which you may know as a 'freeze' or 'hold' function. In much the same way as cranking the feedback control on a delay can cause sound to quickly gain enormous, overpowering momentum, the Infinite control on Eos can be used for some heavy-build antics. It tends to work best on sparse sounds and will need some automation to make it manageable.

So that's about it. Eos is a great-sounding reverb that we particularly love on percussion and have already added to our list of go-to plug-ins for real-world projects. The Superhall setting is great for large-scale, epic sounds, but despite Audio Damage claiming it's the jewel in the Eos crown, we actually think that the plate settings really have the edge – perhaps it's all a matter of taste. Either way, if you're in need of reverb, snap up this bargain right away and you'll be enjoying it for years to come! **cm**

Web [www.audiodamage.com](http://www.audiodamage.com)  
Contact [info@audiodamage.com](mailto:info@audiodamage.com)

## Multiple choice

The filter section of Eos houses standard low- and high-cut filters within a tasty GUI. More interesting is the Multiplier section – often called 'damping' in other reverbs – enabling bass cut/boost and treble cut within the reverberation algorithm. Thus, this controls how quickly the treble and/or bass decays in relation to the mid-range. Because the bass can be boosted as well as cut, the low-end can be made to outlast the mids and highs.

As with the reverb section, what sets it apart is the slick interface – as you tinker with the levels, the response is shown in a graph depicting the low- and high-cut curves and multiplier slopes.

One thing you can't do from the front panel is change the multiplier frequencies – Audio Damage reckon that you'll rarely want to – but if you're really determined, you can alter them by automating a pair of 'hidden' parameters.



## System requirements

PC PIII 600 MHz CPU, 512MB RAM, Windows NT/2000/XP/Vista

Mac G4/G5/Intel CPU, 512MB RAM, Mac OS X 10.4

## Test system

Mac MacBook 2GHz Intel Core 2 Duo, 2GB RAM, Mac OS X 10.5.6, Logic, Live

Mac Mac Pro dual 2.8GHz Quad-core, 4GB RAM, Mac OS X 10.5.6, Logic, Live

## Alternatively

Audio Damage ADverb  
**cm106 >> 8/10 >> \$39**

Not as flexible as Eos, but offers a good 'digital plate' sound

2CAudio Aether  
**cm140 >> 10/10 >> \$250**

High-quality, ultra-flexible algorithmic 'verb... at a price

## Verdict

For Easy, efficient interface

Great-sounding, versatile algorithms  
Excellent value

Infinite control adds an extra dimension  
Convincing vintage digital emulation

Against No separate dry/wet levels

A stunning vintage-style digital reverb at a price that makes it an essential purchase

9/10





# IK Multimedia Stealth Pedal £402

PC MAC

We put the pedal to the metal with this crafty AmpliTube controller and audio interface



> IK Multimedia's AmpliTube is one of the best-known guitar amp simulation applications on the market, and IK have previously responded to users' interfacing needs with the budget StealthPlug and high-end StealthIO hardware. Filling in the middle ground is the new USB-powered Stealth Pedal, which ships as standard with AmpliTube Live, Ampeg SVX UNO and AmpliTube X-Gear, while the Deluxe bundle - reviewed here - features AmpliTube 2 (cm101, 9/10), Ampeg SVX (cm103, 10/10) and X-Gear. And for an indefinite period, both bundles come with AmpliTube Metal as a bonus download.

As for the hardware, connections run along both sides and include two inputs (instrument or line level), two line outs, a USB socket, a minijack for headphones, as well as two 1/4" jacks for a further expression pedal and a dual footswitch (not supplied). The four main ins and outs are all capable of balanced operation, and there's also an output level knob and a switch that's activated by pressing down hard on the pedal (like the bypass on a real wah).

## Taking control

To use it with AmpliTube, you load up the X-Gear shell, select the Stealth Pedal as your audio interface and enable it as the control source via

the front panel - patches that use a wah, volume or whammy pedal in the Stomps section are mapped automatically by default. For custom control, there's a Setup panel where, for each patch, you can define which parameter maps to which control (and assign value ranges), and whether switches are latched. For use with other software, there's MIDI control (see boxout).

The pedal is very solid in build (although the volume knob is positioned rather dangerously) and offers enough resistance to make for precise manipulation - it feels 'right'. Running X-Gear in standalone mode gave us glitch-free operation with a buffer size of 144 samples at 48kHz operation (6ms latency). The sound quality is good, but annoyingly, there are no MME or WDM drivers for Windows, only ASIO. We also found the X-Gear plug-in RAM-hungry, gobbling up around 150MB per instance.

The price, of course, will be the main issue for most prospective buyers, as it ain't cheap, and while the included AmpliTube products add a lot of value, if you've already got them, or they're not the exact ones you want, you may feel like you're not getting your money's worth. **cm**

**Contact** IK Multimedia UK, 0800 0934066  
**Web** [www.ikmultimedia.com](http://www.ikmultimedia.com)  
**Info** Standard version, £230

## System requirements

**PC** P4/Athlon XP CPU, 1GB RAM, Windows XP/Vista, USB port

**Mac** 1.5GHz Intel/Dual 1GHz G4, 1GB RAM, Mac OS X 10.4, USB port

## Test system

**PC** Intel Core 2 Duo, 3GB RAM, Windows Vista (32-bit), Cubase 5, Live 8

## Alternatively

**IK Multimedia StompIO cm127 >> 9/10 >> £920**

The ultimate AmpliTube controller and audio interface, at a price

**NI Guitar Rig 3 Kontrol Edition cm120 >> 7/10 >> £333**

Amp sim software with a controller/interface floor unit

## Verdict

**For** Solid metal casing  
Authentic rocker pedal action  
Switch and expression pedal inputs  
Comes with great AmpliTube software

**Against** It ain't cheap  
No Windows WDM/MME drivers  
One parameter per control limit  
Software can be resource-intensive  
Watch that volume knob!

It has a few curious drawbacks, but the Stealth Pedal has it where it counts: solid build quality and great-sounding software

8/10

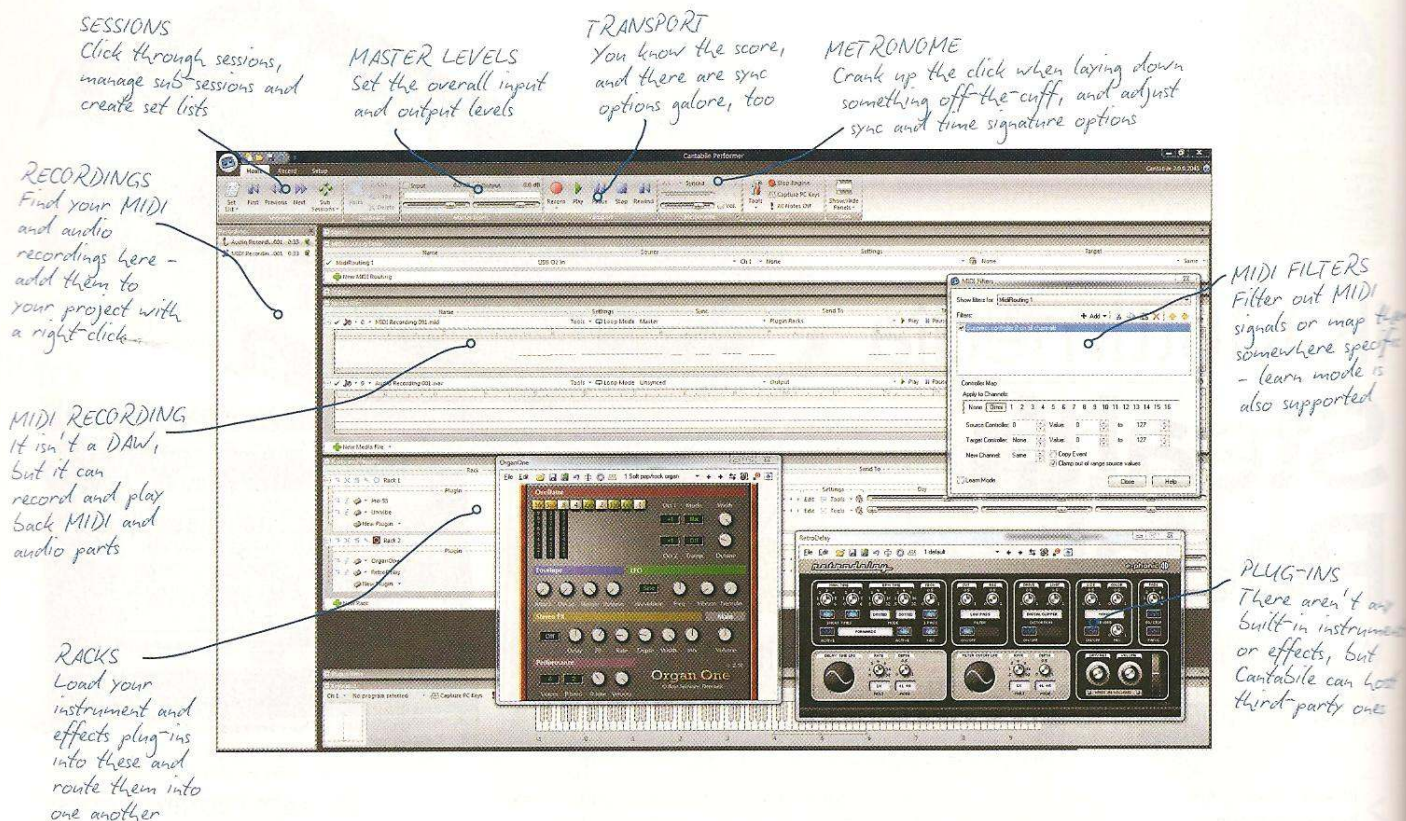
## Single whammy

To configure the Stealth Pedal as a standard MIDI device, you use the Stealth Pedal MIDI Control application. As with X-Gear, it enables you to map up to three switches and two pedals, but this time to MIDI CCs and Program Changes, not to mention MIDI notes for the switches and pitchbend for the pedals. You can save your mappings as presets and map the volume knob, too.

There's one limitation that's common to both the 'direct' X-Gear control and MIDI

mode, which is that you can only assign one parameter per control - so you can't use the pedal to increase an AmpliTube's amp gain while turning down the reverb level, for example. However, some competing amp sims (eg, Overloud TH1) have more advanced MIDI mapping abilities, and with these, you can indeed manipulate several parameters with one Stealth Pedal control, which makes X-Gear seem lacking in this area (an update is being considered, say IK).





# Topten Software PC Cantabile 2.0 Performer \$139



The second version of this performance-oriented music application hits the stage, but can it bring the house down?

## System requirements

**PC** 1GHz CPU, 512MB RAM, 10MB drive space, Windows XP/Vista 32-/64-bit, ASIO/DX-compatible audio interface

## Test system

**PC** 2.16GHz Intel Core 2 Duo, Windows Vista Business (32-bit), 2GB RAM, M-Audio Fast Track Pro, M-Audio O2 MIDI controller

> Many gigging and touring pros have taken to using notebooks or even desktop computers on-stage. And why not? With all of the brilliant soft synths, samplers and effects, a laptop can replace racks full of gear and, in theory, reduce the stress that goes with managing a live rig.

However, a live software setup must also be manageable, to withstand life on the road. With the Windows-only Cantabile, Topten Software seek to give you everything a performing musician might need in a plug-in host, with none of the studio-centric bloat that weighs down most DAWs. More than that, the developer has provided tools aimed at maximising integration between your MIDI hardware and plug-ins.

## What it isn't

Cantabile isn't a traditional plug-in host, so don't expect it to do any DAW-like editing or arranging - for example, there isn't a single synth or effect

in the package, as Topten are leaving the VST-stockpiling to you.

What Cantabile does is provide a thoroughly customisable workplace, with racks for your VST instruments and effects, and a means by which they can be routed to your hardware MIDI and audio interfaces, as well as each other. It gives you quick and easy access to the most important mixing parameters that you might need at a gig, such as each plug-in's gain and pan settings, presets and wet/dry levels. These functions are provided in 'racks' rather than in a familiar mixer setting, and you can stack up rack upon rack as you need to.

Instruments and effects are loaded into racks, and the racks themselves can be soloed, muted, bypassed and record armed - you can also use them to process incoming audio signals. This method is flexible enough for just about any plug-in combo that you can imagine, though it's



"It gives you easy access to the most important mixing parameters that you might need at a gig"

not as freely patchable as a fully modular plug-in host, such as energyXT2.5 or Plogue Bidule.

## MIDI, managed

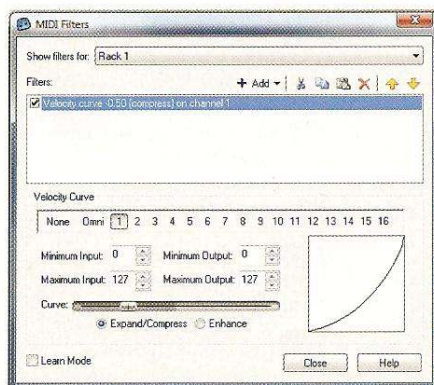
As you'd expect from a product aimed at live performance, Cantabile's MIDI implementation is very flexible. Just about any parameter on show can be assigned to virtually any MIDI controller. For example, plug-ins can be bypassed with a single key tap via the Note to Controller Assignment, or multiple racks can be spread across the key range to create complex splits and transpositions. In fact, you can filter any incoming MIDI data or reroute it as needed. 'Triggers' can be defined, to control external devices whenever you perform certain actions, such as loading a new session. VST parameters can be controlled via MIDI, too, and you can switch sub-sessions via MIDI program changes.

So what's a sub-session? Well, Cantabile's settings are stored as sessions, and a sub-session is a named variation within a session. For instance, a session might contain a selection of racks with their own instruments, effects and routings – a variation of that session using the same plug-ins but different mutes, program banks, MIDI triggers, routing entries and sync options could be saved as a sub-session for fast recall. This is assuming that your plug-ins don't have long patch-load times, which is beyond Cantabile's control.

## For the record

Though we've stressed that Cantabile is not a DAW, it can record and play back audio and MIDI, making it a good sketchpad for generating ideas that can be tweaked in a separate editor. Performances can be saved, too, as it can record the output of plug-ins, as well as incoming audio.

As for recording, this can be engaged manually or set up to start automatically when Cantabile receives MIDI data or audio above a predetermined threshold. Recordings can run in



Cantabile is great for customising MIDI signals – send anything anywhere and tweak it along the way



Here we're selecting which parameters of NI's Pro-53 synth are to be morphed

## Random access

Although Cantabile is intended for live performance, it has a few features that are more at home in the studio than on the stage. Some of the most inspiring aspects of these are the morphing and randomisation tools located at the top of the individual plug-in editors. They aren't unique, but they are to-the-point.

There are three such tools, including Randomize, Randomize Between and Morph, with a masking feature that enables you to choose which plug-in parameters are to be affected and which should be left alone. Randomising is accomplished simply by clicking on a dice icon, and there's a slider to adjust the percentage of

variation that should occur. You can also automate the process via the Animate button – activating this will cause Cantabile to randomise a plug-in's parameters at set intervals, so that you can sit back and wait for something to take your fancy.

You can exert some control over the randomisation process with the Randomize Between mode, whereupon the program will generate random presets that lie somewhere between two selected patches. Lastly, Morphing is a variation of this, but without the random aspect – instead, you select two patches and simply use a slider to blend between the two.

sync to the master clock or be triggered individually. WAV, MP3 and MIDI files are supported, too, although there's no timestretching of any kind.

Cantabile is a powerful and deeply flexible program. In practice, it performs well, and though we did crash it once during the review period, it wasn't a repeatable problem. Multicore support means that it went easy on our machine, and 64-bit Windows users will be glad to know that there's a version for them.

It's true that there are a handful of dedicated plug-in chainers and modular hosts out there, and some of them make fine live performance tools – however, Cantabile was designed from the ground up for live performance, and it shows. Frankly, we'd be hard pressed to conceive of a live scenario that Cantabile couldn't enhance. It's not for everyone, but if you're a performing musician looking to maximise the live experience, you really should try it out. Note that there's a cut-down version, Cantabile Solo, which lacks sub-sessions, triggers and the MIDI routing table. **cm**

Contact: [contact@cantabilessoftware.com](mailto:contact@cantabilessoftware.com)  
Web: [www.cantabilessoftware.com](http://www.cantabilessoftware.com)  
Info: Cantabile Solo, \$49

## Alternatively

Ableton Live 8  
cm139 >> 9/10 >> £400

As well as being a full-on DAW, Live is, of course, great for live work

XT Software energyXT2.5  
cm141 >> 8/10 >> €59

Not built for live use, but modular, powerful and cross-platform

## Verdict

**For** Bloat-free  
Awesome for live work  
Excellent morph and randomising tools  
Sub-sessions are a good idea  
Masses of MIDI control

**Against** Less flexible than other hosts

For live work, jamming and using as a musical sketchpad, Cantabile 2.0 Performer is indeed in our top ten

9/10





# MOTU

## Traveler-mk3 £795



We put the latest in this series of roaming interfaces through its paces and investigate whether it's suited to life on the road

Making music on the move can mean anything from laptop-based editing to full-on recording on location, and the gear designed for mobile use varies considerably because of this. MOTU's Traveler interface has always sat firmly in the recording camp, and the unit we're looking at here is the third in the series.

It's compact and lightweight, with various powering options (PSU, FireWire, battery) and cross-platform support for all typical drivers (WDM/ASIO/CoreAudio/WaveRT), so that you can be sure that it'll work with most software.

MOTU's interface handles eight channels of analogue in/out at up to 192kHz. Four inputs are combo mic/line/instrument connections, with the others at line-level only. There are also eight standard TRS outs. These are joined by ADAT (16 channels), S/PDIF and AES/EBU, all capable of 96kHz operation (note that MOTU have ditched the ADAT Sync option in favour of two banks of ADAT Lightpipe). Factoring in the headphone output and operating at 44.1/48kHz, that's 28 inputs and 30 outputs. At higher sample rates, and when using S/MUX for the 96kHz ADAT, channel counts are reduced accordingly.

The Traveler-mk3 is of a software-controlled hardware design, using push-and-turn rotary encoders. With the LED screen, you can operate it solely from the front panel, although you'll probably find it easier using the CueMix FX software (see boxout). Once things are set up, it can operate as a standalone mic preamp, too.

### Three's a charm

Inevitably, the mk3 has the edge over previous incarnations. Firstly, the input stage has better converters - high-impedance instrument ins and digital trim on all inputs (in 1dB increments), plus the new V-Limit hardware limiter and Soft Clip options. There are also a few analysis additions to CueMix FX, including Spectrogram and FFT views for the EQ, and overall oscilloscope, X/Y Plot and phase analysis windows.

The Traveler-mk3 delivers enormous flexibility and for the most part is simple to use. The V-Limit technology is impressive, rendering ridiculously overloaded signals useable, especially with the lookahead feature engaged. The onboard EQ and dynamics are also precise.

If you need to synchronise machines, the unit slaves to both LTC and MTC. Even so, there are a few curve balls. For example, the MIDI and power connectors are around the side of the case; modifying CueMix settings from the front panel screen can be fiddly; and, as mentioned, higher sample rates eat into your channel count and will also disable the reverb effect. Still, these are points to be aware of rather than real shortcomings, and very few units in this price range offer such an impressive feature-set, which should guarantee the Traveler a safe onward journey. **cm**

Contact: MusicTrack, 01767 313447  
Web: [www.motu.com](http://www.motu.com)

### System requirements

Mac G4 500MHz, 256MB RAM,  
Mac OS X 10.4.9, FireWire port

PC 1GHz Pentium, 256MB RAM,  
Windows XP/Vista, FireWire port

### Test system

Mac Apple Mac Pro dual 3GHz,  
3GB RAM, Mac OS X 10.5.5, Logic 8

### Alternatively

Metric Halo Mobile I/O  
N/A >> N/A >> £1667

A class leader, but it ain't cheap, and the DSP upgrade is extra

M-Audio ProFire 2626  
cm127 >> 9/10 >> £479

In terms of bang for your buck, it's hard to beat M-Audio's ProFire

### Right on cue

A cornerstone of MOTU's interfaces is CueMix FX, which controls the unit's own DSP chips and powers the digital mixer, providing 28 inputs, eight stereo busses, plus internal audio routing and effects. With up to eight potential submixes, setting up zero-latency headphone mixes is easy and flexible. But you've also got the benefit of a few built-in effects, including 7-band EQ, compression, limiting and reverb. The EQ and dynamics are hardwired to both inputs

and outputs, so that you can process your mics at source. By contrast, the reverb is a global send/return effect.

Beyond this, CueMix FX links in with other aspects of the Traveler's input stages. So you get control over input trim, phase reverse, pad, V-Limit and Soft Clip. In fact, it seems that the only thing CueMix FX can't control by itself is the phantom power, which requires a physical switch on the unit's front panel.

### Verdict

For Quality input stage and converters  
Excellent V-Limit feature  
Powerful CueMix system  
New analysis tools

Against Front-panel screen is fiddly  
Less features at higher sample rates  
No reverb presets

MOTU uphold the Traveler's fine reputation with this solid update

8/10



# cm mini reviews

A rapid-fire round-up of plug-ins, sample libraries, ROMplers and more

ddmf

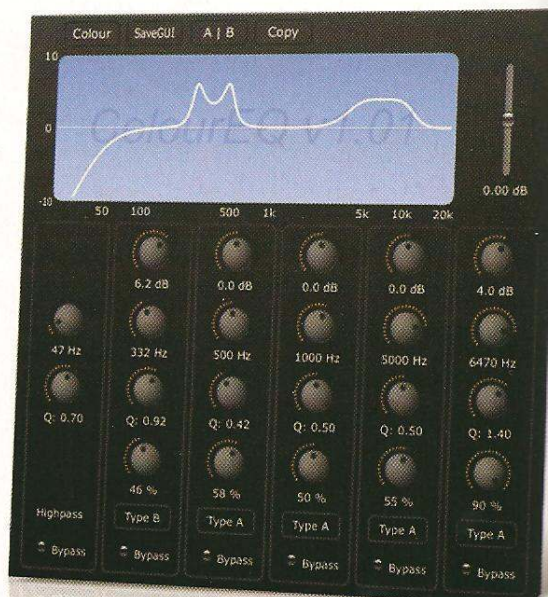
## ColourEQ \$0.50+

Format PC/Mac, VST/AU  
Contact support@ddmf.eu  
Web www.ddmf.eu

The latest plug-in from the EQ fiends at ddmf is a very different equaliser indeed. Rather than imitating vintage hardware or being yet another bells-and-shelves affair, ColourEQ offers five bands of "superparametric" peaking EQ, which, rather unusually, use fourth-order filtering. What this means is that the curve shapes are not your standard bell peak - Type A gives a sort of flat-topped bell (similar to overlapping shelves), while Type B is like a bell with a concave peak. To further control the shape, there's an extra knob per band, in addition to the usual frequency, gain and Q settings, and there's a dedicated high-pass filter too.

In use, the Type A curve is the most practical. Similar to how you'd use a shelf to equally boost all frequencies above or below a designated point, you can use ColourEQ to boost a certain frequency range (unlike bell filters, where you boost around a given point and the centre frequency is always loudest). It's most useful indeed and gives musical results. The Type B curve gives a more pronounced timbre, which is less useful for basic EQ'ing, but still has its uses.

Further features include the ability to change the colour scheme, and A/B comparison. We'd love to see ddmf combine



ColourEQ's curves with a set of regular EQ filters, like those in their excellent IIEQ Pro plug-in. Still, considering ddmf's 'pay what you like' pricing scheme, it seems churlish to complain. Bravo, ddmf, for daring to be different!

9/10

Yellow Tools

## Halls of Fame Origami Edition £345

Format PC/Mac, VST/AU  
Contact Time+Space, 01837 55200  
Web www.timespace.com

The follow-up to the original HOF library uses IRs captured from 13 analogue and digital reverb units. These include classics like the ancient AKG BX 20 spring reverb, EMT 240 plate, EMT 250 digital reverb/echo and Lexicon 480L, and more recent devices from Bricasti, Eventide, TC, et al. All IRs are true stereo, so a stereo convolution occurs for each channel, for a more accurate recreation. Annoyingly, you can't get your hands on the IR files as they're 'embedded' in the supplied Yellow Tools' Origami plug-in. The latter works well and lets you stretch the IR, EQ it, etc, although the envelope functions are a little basic. Still, you get over 1500 fantastic patches covering the presets and typical settings of each device - the only thing you may miss is the subtle modulated swirl of certain digital units, which IRs cannot capture.

The high price puts HOF Origami Edition in competition with the lofty likes of Audio Ease's Altiverb, but however you look at it, it's still far cheaper than your average Lexicon box.

8/10



## Audio Ease Cabinet £50

Format PC/Mac, VST/AU  
Contact Unity Audio, 01440 785843  
Web www.audioease.com

This spin-off from Audio Ease's pricey Speakerphone gives instant access to convolution-based emulations of five famous guitar cabs. The idea is that you disable the cab emulation in your



regular amp sim package and place this after it instead.

Operation is simplicity itself: click one of the five speaker stacks to select a cabinet, then use the Mic knob to fade between two mic sounds. Turning up the Narrow/Wide knob widens the stereo image, and no surprises are had whilst pumping up the Bass control either. A spanking Spring Reverb can be dialled in, while the Room Mic knob gives an excellent natural ambience. We used Cabinet in conjunction with AmpliTube 2 and TH1 and were most impressed with the authentically thick tones that resulted - it certainly got us a step closer to 'the real thing'. A master volume knob and a compact interface option would be good, but otherwise, there's little to complain about here.

9/10



## Toontrack Metal Foundry SDX £125

**Format** SDX for Superior Drummer 2.0  
**Contact** Time+Space, 01837 55200  
**Web** www.timespace.com

For the second SD2.0 expansion, Toontrack have gone back to their roots with a massive metal-focused kit recorded at Atlantis Studios in Stockholm. Naturally, there are two kick drums: for the right, you can choose from 12 different types, while the left one has matching drums for five of them. Turn on the Alternate option in the main kick's control panel and the program will switch between the two drums with each hit. Sonically, there's everything from tight, clicky and punchy, to big, beefy and downright boomy.

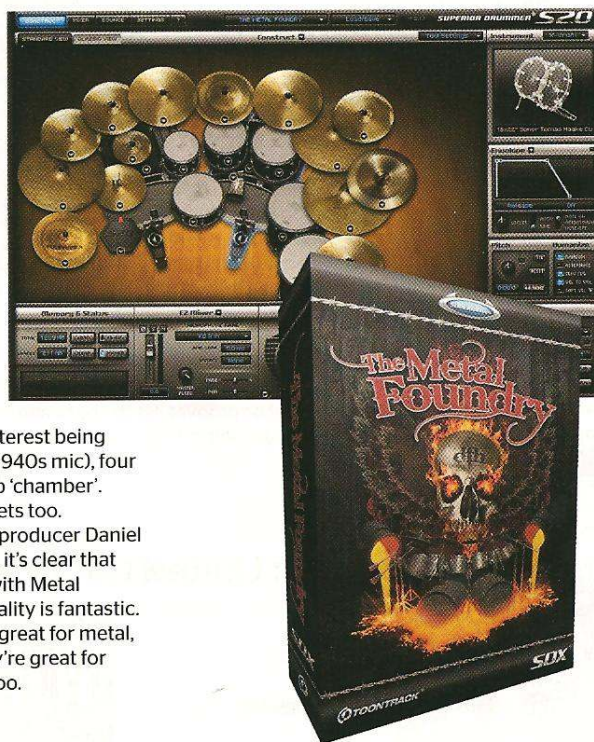
For snares, there are 14 on offer, and most are of the high-tuned variety, including the 7x13" Tomas Haake Engineering model and a Pearl Ian Paice 6.5x14". For a thumping rock snare, the 6.5x14" Pearl Reference Low Pitched and 12x14" WFL Marching Snare do the trick. There are three rack and two floor toms, with around eight kits' worth of drums to pick from. And for cymbals, you'll find five sets of hats, four rides,

and a jawdropping 40 crashes, splashes, Chinas, and so on. Oh, and a cowbell! All we can suggest that might enhance the 'instant metal' experience would be a few layerable pads with the sort of processed 'triggered' drum hits that are common in modern metal, but you can always use an external sampler for that.

Mic channels include all the usual suspects, with points of interest being four snare mics, 'snare trash' (a 1940s mic), four ambience channels and a reverb 'chamber'. There are some cool mixer presets too.

With the likes of name metal producer Daniel Bergstrand listed on the credits, it's clear that Toontrack haven't cut corners with Metal Foundry SDX, and the sound quality is fantastic. And while these kits are indeed great for metal, due to their punchy nature, they're great for genres like pop, funk and rock too.

9/10



## LiquidSonics Reverberate £30

**Format** PC VST  
**Contact** Via website  
**Web** www.liquidsonics.com

A new entry into the currently-bulging reverb marketplace is Reverberate by LiquidSonics, aimed at making impulse response-based reverbs sound "richer and more dynamic". Reverberate offers not only true-stereo processing capability (as seen on Christian Knufinke's SIR2, amongst others), but also the ability to support two such true stereo IRs at once, all with zero-latency operation.

Reverberate is a nicely designed plug-in with well apportioned controls, making it easy to operate and get to grips with. There's an edit page for each impulse response, enabling you to stretch the response and apply an ADSHR envelope, as well as independent EQ pages, where you can apply five-band parametric EQ to tweak the sound of your reverbs. A built-in chorus is on hand to thicken up the sound, should you desire, and a post EQ can be applied to both channels of convolution - both of these are genuinely handy functions.

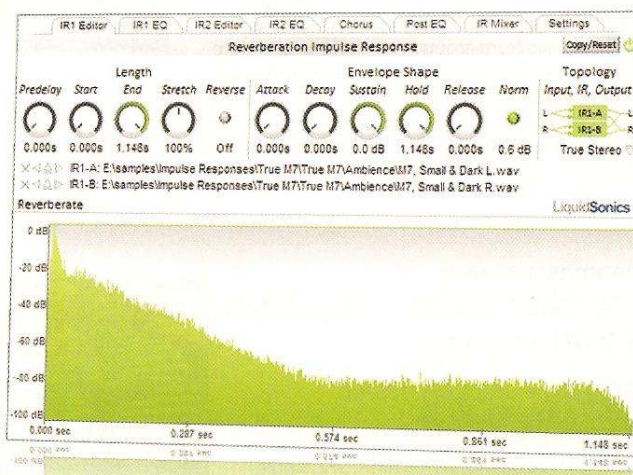
The main draw, however, is Reverberate's comprehensive modulation system. Many

high-end hardware reverbs use modulation to create a less 'static' sound, typically by manipulating the filters or delay line lengths inside the reverb. While such qualities cannot be captured by traditional impulse responses, Reverberate does have modulation options of its own. These allow you to modulate the chorus delay amount, the post EQ and even the mix between the two IR channels, within whatever range you wish. For example, you could move the EQ's centre frequency between 1 and 2kHz over a one-second period, or slowly cycle between two impulse responses. In practice, it's very effective, and offers creative potential too.

The small but decent native IR library is good, and to further put Reverberate to the test, we

tried it with some true stereo impulses captured from a high-end Bricasti M7 digital reverb, with incredibly impressive results. Reverberate stands up to the competition in terms of sound quality, and the additional modulation options make it an absolute steal at £30. There's also an entirely free LE edition available to try.

9/10





# Soundware round-up

Big Fish Audio

## Electron Smasher £72

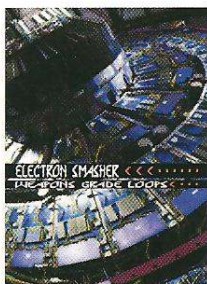
Contact Time+Space, 01837 55200

Web [www.timespace.com](http://www.timespace.com)

Format Acidized WAV, Apple Loops, REX, RMX

Electron Smasher proves to be a novel idea for a sample library, flaunting a selection of glitchy electronic sounds. There are over 700 unique samples in total, with Grooving construction kits, Ambient construction kits and Xtra loops categories. Everything seems to be unpredictably mangled in a very stylish way that's totally in keeping with current production trends. It'll easily slip into any electronic producer's arsenal but shouldn't be overlooked for other forms of music seeking a certain 'edge'. The ambiances conjure up moods, while the grooves set the pace and make great fills. All samples are categorised and labelled for easy use.

9/10



Big Fish Audio

## Bollyhood Beats £72

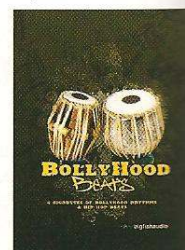
Contact Time+Space, 01837 55200

Web [www.timespace.com](http://www.timespace.com)

Format Acidized WAV, Apple Loops, REX, RMX

If you're seeking a hint of Indian inspiration for your hip-hop and R&B productions, you'll want these 92 construction kits. Each contains a full mix and separate instrument loops. The tabla is all over this title, as well as the dholak, duff, manjira and ghungroo, blended seamlessly with electronic kits from the hip-hop world. The recording quality is super-pristine 24-bit (stereo where appropriate) and the performances are stylish, dynamic and easy to work into a mix. The vibe is exceptionally authentic and modern, with lots of rhythmic action in the bottom end and sparkling tops. Awesome.

10/10



Big Fish Audio

## Hip Hop Exotica 2: United Nations Of Hip Hop £72

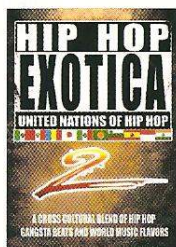
Contact Time+Space, 01837 55200

Web [www.timespace.com](http://www.timespace.com)

Format Acidized WAV, Apple Loops, REX, RMX

This release is made up of 36 construction kits labelled by key and tempo and containing instrument loops and drum hits. The concept merges hip-hop sounds with ethnic instrument performances from around the world. While there are some interesting flavours, and the producers have attempted to arrange the sounds in a hip-hop fashion, the style hasn't been captured - the sounds are flimsy and the grooves are off. However, the so-called exotic sounds are fantastic and are certainly what give this library value.

7/10



Dark Side Of The Tune DOWNLOAD

## Drum Abrasion \$9

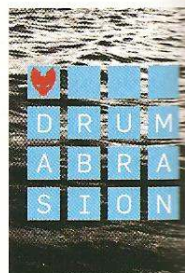
Contact [info@darksideofthetune.com](mailto:info@darksideofthetune.com)

Web [www.darksideofthetune.com](http://www.darksideofthetune.com)

Format WAV, MPC

This pack reunites us with the classic Akai MPC format, hailed by so many hip-hop legends as the be-all and end-all for drums and percussion - thankfully, there are WAV files for non-MPC users. This short but sweet collection of drum samples is filthy and raw in the best way, and comprises 64 single-hit acoustic samples (some using unusual found instruments) that have been captured and processed using character-rich equipment, the result being a large, gritty texture. The beats you make with these drums and percussion samples will always be fat and authentic.

9/10



Loopmasters

## The Nextmen - Hip Hop & Electronica £40

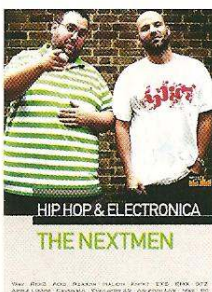
Contact Time+Space, 01837 55200

Web [www.timespace.com](http://www.timespace.com)

Format WAV, REX2, Acidized WAV, Reason, HALion, Kontakt, EXS, Stylus RMX, SFZ, Apple Loops, Cakewalk, Emulator X2, Ableton Live

Prolific urban producers The Nextmen have produced a very unique and diverse library here. The overall sound is extremely large and carries a distinctly British underground vibe. You'll find over 400 'unique' sounds organised into categories of bass, drums, FX, instruments, vocals and scratches. There are loops as well as one-shots, and the quality throughout is truly outstanding. If you're working on virtually any form of music that requires a thick, groovy sound, you'd be a fool not to pick this up!

10/10



Loopmasters DOWNLOAD

## Full Cycle Drum and Bass Collective £35

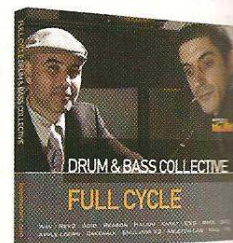
Contact [info@loopmasters.com](mailto:info@loopmasters.com)

Web [www.loopmasters.com](http://www.loopmasters.com)

Format Acidized WAV, REX2, ReFill, Live Pack, Apple Loops, HALion, Kontakt, EXS, SFZ, Stylus RMX, Live Presets, NN-XT

D Product and UV Ray from the Full Cycle camp have produced just over 450 unique samples in the form of authentic drum 'n' bass loops and one shots, with additional production by Roni Size and DJ Krust. The style is exactly what you'd expect from the label that was home to the Bristol sound that once led drum 'n' bass. There are musical elements here as well as breaks, dirty basses and effects. It's authentically Full Cycle, but don't expect to find the toughest DnB sounds here. Note that the Apple Loops version is £30.

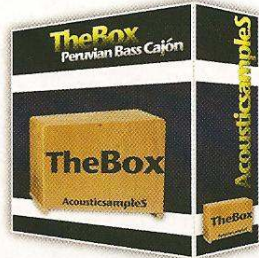
8/10





Acousticsamples DOWNLOAD  
**The Box** €14

Contact via web  
 Web [www.acousticsamples.net](http://www.acousticsamples.net)  
 Format Kontakt 2, Mach Five, EXS24, sfz

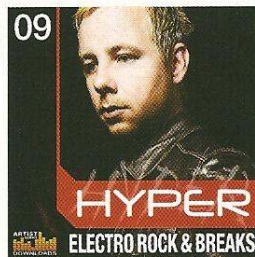


According to Wikipedia, the cajón is the most widely used Afro-Peruvian musical instrument of the 20th century – for the uninitiated, it's basically a box with a hole in it that you sit on and slap with your bare hands. This lo-fi instrument now has a hi-tech virtual counterpart in the shape of The Box, which is a multisampled patch that enables you to smack your virtual box with left and right hands in six different places. The patch certainly seems professionally recorded, and the round-robin sample playback makes it highly convincing, so cajón feel the noise!

8/10

Loopmasters DOWNLOAD  
**Hyper – Electro Rock & Breaks** £25

Contact [info@loopmasters.com](mailto:info@loopmasters.com)  
 Web [www.loopmasters.com](http://www.loopmasters.com)  
 Format Acidized WAV, Rex2, Reason, Live, Apple Loops, HALion, Kontakt, EXS, SFZ

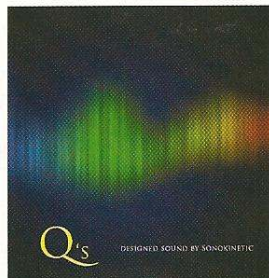


This library from breaks veteran DJ Hyper delivers all the elements you'd expect, including a selection of one-shot drum hits, multisampled synth sounds, and tons of loops. The flavour reflects the sound of his live band Hyper with vaguely rock-styled riffs and dirty bass sounds. While the sounds will no doubt delight fans, they're not particularly impressive compared to similar Loopmasters or Sample Magic collections, and while no one who buys this will feel ripped off, there are more inspirational libraries in this vein available already.

7/10

Sonokinetic DOWNLOAD  
**Q's – Designed Sound** €20

Contact Via website  
 Web [www.sonokinetic.com](http://www.sonokinetic.com)  
 Format WAV, Kontakt

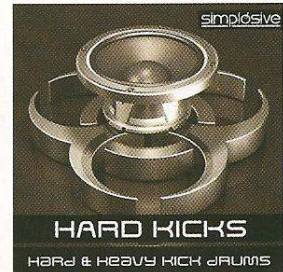


A selection of sound effects for multimedia as well as music production, this pack features 50 big effects, comprising various combinations of booms, bangs, blips and radio-esque noises. The quality is high, and what's more, you also get a folder of 52 simpler "element" sounds, which you can combine and process to create your own larger-than-life effects. There are some great sounds included that will make life easy for those looking for huge, expensive-sounding effects, and the pack is very reasonably priced, considering the inclusion of the element sounds.

9/10

Simplosive DOWNLOAD  
**Hard Kicks** €25

Contact Click Produce, 020 8780 0612  
 Web [www.clickproduce.com](http://www.clickproduce.com)  
 Format WAV, AIFF

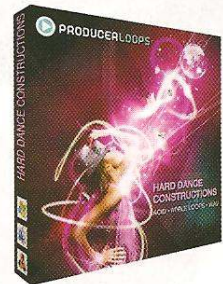


They don't come much simpler than this: Hard Kicks from Simplosive is a collection of 500 kick drum samples that are, as you might imagine, quite bangin'. Ranging from thumping acoustic bass drums to the full-on distorted gabber variety, the pack comprises 100 different kick sounds in five different versions, each recorded through different effects. As such, you only get one relatively dry kick for each of the 100 basic sounds, which is a little limiting if the more distorted sounds aren't your thing, but this pack still represents decent value for money.

8/10

Producer Loops DOWNLOAD  
**Hard Dance Constructions** £30

Contact Producer Loops, 0845 094 3077  
 Web [www.producerloops.com](http://www.producerloops.com)  
 Format Acidized WAV, Apple Loops

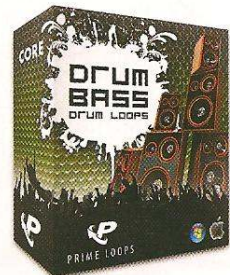


This collection of five large construction kits focuses on the more bangin' end of the commercial 4x4 dance scene. The kits feature individual drum tracks, a selection of synth line and bass variations, sound effects and, in some cases, vocals. While veteran producers would no doubt prefer more one-shot sounds and multisamples, there are still plenty of elements that can be used out of context, and the construction kits will be very useful to beginners, who will be able to create their own versions of the five tracks, learning something about dance production in the process.

8/10

Prime Loops DOWNLOAD  
**Drum n Bass Drum Loops** £11

Contact Via website  
 Web [www.primeloops.com](http://www.primeloops.com)  
 Format Acidized WAV, Ableton Live, Apple Loops, MPC, Reason, REX2



The latest from Prime Loops is a bargainous collection of DnB beats, with which both the quantity and quality of the supplied material are surprising, given the minimal outlay. For 11 quid, you get 110 loops ranging in tempo from 161 to 178 BPM, and while the standard does vary a bit, many of them are great. Stylistically, they range from breakbeat-fuelled affairs to steppier rhythms and more esoteric experimental beats, though generally the junglier, break-based loops are the most polished and immediately inspiring. A sound investment for loop-loving junglists!

9/10



# cm/recommends

The best new gear from the last three issues...

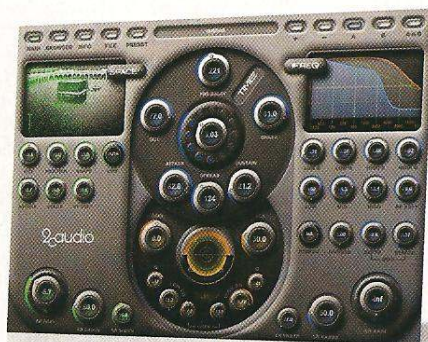


Akai PC/MAC  
**APC40** £399

Rating 10/10  
Reviewed cm141  
Contact Akai Pro, 01252 341 400  
Web [www.akaipro.com](http://www.akaipro.com)

**What is it?** The best controller we've ever used, the APC40 is a dedicated device for controlling Ableton Live. You can launch clips, control levels, tweak panning and send amounts, manipulate plug-ins and lots more. The backlit buttons and LED-encrusted knobs make it a doddle to keep informed about what you're actually doing, and the whole thing is so damned intuitive that the inclusion of a manual is really just a formality. Astounding!

**Verdict** "Without peer in the Live controller market, this is essential for Ableton Live users"



2CAudio PC/MAC  
**Aether** \$250

Rating 10/10  
Reviewed cm140  
Contact [info@2caudio.com](mailto:info@2caudio.com)  
Web [www.2caudio.com](http://www.2caudio.com)

**What is it?** A highly configurable algorithmic reverb, but more importantly, one that has a fantastic sound. With the comprehensive parameter set, you can tweak numerous early reflection space models, sculpt the frequency response and amplitude envelope of the diffuse tail, and browse a selection of excellent presets that cover everything from crazy effects to bread-and-butter rooms and halls.

**Verdict** "One of the best algorithmic reverbs we've ever heard, although it may appear intimidating to the novice"



u-he PC/MAC  
**Uhbik** \$199

Rating 10/10  
Reviewed cm139  
Contact [urs@u-he.com](mailto:urs@u-he.com)  
Web [www.u-he.com](http://www.u-he.com)

**What is it?** A collection of eight high-quality effects processors with easy-to-use interfaces. Reverb, delay, phasing, chorus/flanging, tremolo, filtering and EQ are all here, as is the more esoteric frequency shifting (not to be confused with pitchshifting). Not only are these units fantastic for mixing, but you can automate pretty much any parameter without the audio glitching, making them ideal for live use, too!

**Verdict** "u-he earned their soft synth stripes with Zebra, and the brilliant Uhbik pack gives them similar status in the world of effects"

## What we've been using this month



Ronan Macdonald  
Editor

I've been getting out and about with AudioFile Engineering's FiRe for iPhone. The built-in mic isn't exactly ideal, to say the least, but at £3.49, the App itself is an essential buy for any recordist.



Lee du-Caine  
Deputy Editor

I'd been steeling myself for the release of Toontrack's Metal Foundry SDX, but now that it's here, I can give you my cast iron guarantee that it's worth every penny. It's pure percussive gold!



Tim Cant  
Multimedia Editor

I've been taking advantage of DrumCore 3 lately - it's like having access to lots of talented drummers, except you don't have to talk to, look at or smell them.



Craig Hitchings  
Production Assistant

I've been lucky enough to get my hands on Akai's amazing APC40, which has really controlled my every thought, clipped my social life and launched me on a new musical journey.



>Your questions answered

# Q&A

Got some cash to splash on new gear but don't know where to look? Running into problems with your current setup? Or would you like some help in making a certain sound? Send your questions to [cmhelp@futurenet.co.uk](mailto:cmhelp@futurenet.co.uk)

## Live and direct

**Question** I've been producing for a few years, starting out on Reason before moving to Cubase, then Logic. With each, I've always run Live via ReWire, for cutting up and using samples; however, recently I've found myself turning to Live to produce entire songs. Are there any significant drawbacks to using Live above other DAWs, and if not, why do we not see as many professional artists using it as their main music application? I read somewhere that Live's sound quality was not supposed to be as good - however, this has since been proved not to be the case.

Rich Mockett

**Answer** There are no significant drawbacks in using Live as your principal DAW. We've said it

before and it bears repeating: any application that inspires you to produce great music is the 'right' application and it doesn't matter whether your peers or favourite musicians agree with you or not. Your intended listening audience can't tell what DAW you used to produce your songs, can they? If Live works for you, then use it - plus, if you dedicate yourself to a single program, you're sure to squeeze more out of it.

As for sound quality, as long as you don't Warp every last bit of audio you use in the application, it should never become an issue. There are plenty of arguments over the finer points of audio summing engines, but the only thing that matters is whether it sounds good to you or not.

As a final aside, an increasing number of professional musicians are in fact using Live as their primary production system. This is, of

course, particularly true in the electronic music arena, but not exclusively, by any means.

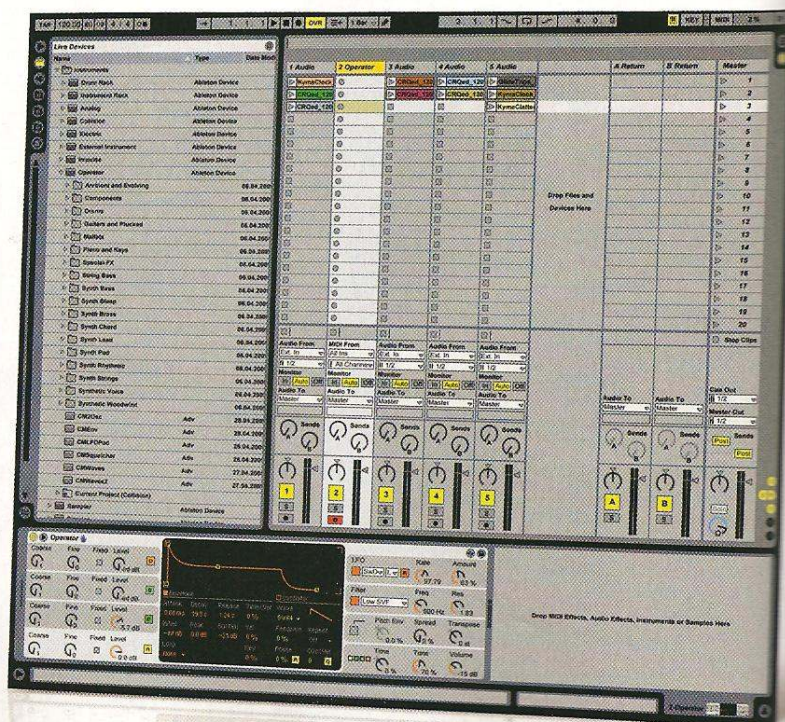
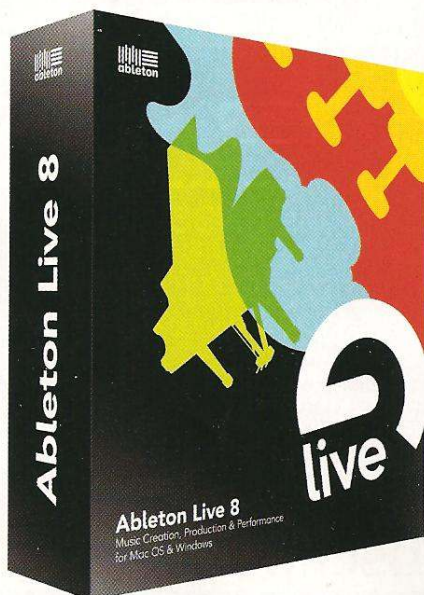
## Building bridges

**Question** I am wondering if it's possible to ReWire my MacBook Pro running Logic into Live 8 running on a desktop Windows PC. If so, what options would I have in order to accomplish this?

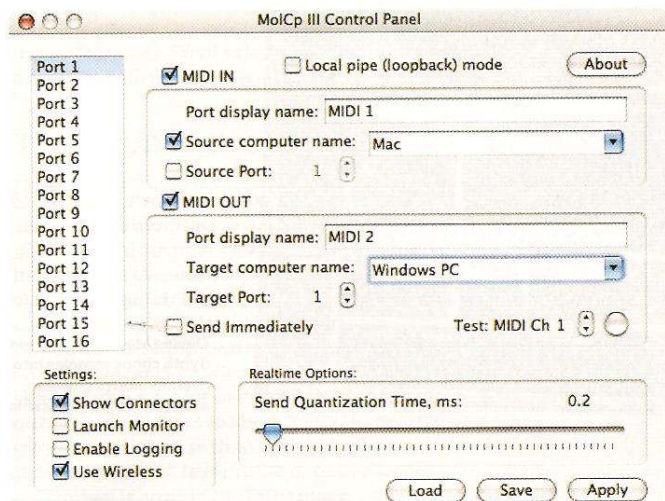
Noah Neiman

**Answer** ReWire might seem like an ideal candidate for cross-platform communication, but there's simply no way to do it at this time. An app such as Wormhole ([plasq.com/wormhole](http://plasq.com/wormhole)) enables you to shuttle audio back and forth over a LAN, but alas doesn't do the same thing for

More and more people are using Live as their primary studio DAW, and with very good reason







You can't use ReWire between computers, but you can sling MIDI over a network cable, thanks to MIDIOverLAN CP

MIDI or ReWire data.

You could, of course, attempt to sync your computers via MIDI, but again, this is not as convenient as ReWire. Macs do have built-in facilities for MIDI transmission over LAN, but seeing as you're using a PC on one end, you're fresh out of luck once again.

Fortunately, though, there are cross-platform solutions in the shape of MusicLab's MIDIOverLAN CP ([www.musiclab.com](http://www.musiclab.com)) and the free ipMIDI ([nerds.de](http://nerds.de)). Yet again, these don't support ReWire, but used in addition to the aforementioned Wormhole, they'll at least get your computers talking to one another. We should point out that some users report more success with these systems than others, and although you can use them over a wireless network, it's certainly recommended that you use a physical network for the best results.

## Send for help

**Question** I hope you can help me. I have a copy of *Computer Music Special 35: Guitar Studio*. In the article about send effects (pp56-58), it shows how to use "one effect for all" in Cubase. How do I do this in Sonar 8 Producer? I cannot find an FX Channel in the drop-down menu. Also, how do I make that tranquil and far-away sound heard in ambient music? I've recorded some tracks with string pads and piano, but when I mix it all, it just doesn't come out right. I've tried delays and reverb but can't get the sound I'm looking for.

Guy Lewis

**Answer** Take a look at the *Effects sends in Sonar 8* walkthrough on this page to learn how to create an effects send in your DAW of choice - this is the "one effect for all" technique that you

read about in *cm Special 35*.

As for your other question, you're on the right track, as delay and especially reverb can indeed help with distant, ambient sounds. The trick is mainly in finding the right reverb settings, and if you want something to sound far away, you'll need to hear more of the effected signal and less of the dry audio. This is accomplished with the 'dry/wet' mix control found on most plug-ins, but if you're using the effect on an auxiliary send (the "one effect for all" technique), the amount of wet signal will be controlled with the effects return. By the way, to be able to reduce the dry signal level without the wet signal getting quieter, too, you would turn need to route the signal 'pre-fader' (as detailed in the sidechaining walkthrough on p116).

The reverb settings are crucial. For a clearer sound, you'll want some predelay so that there's a slight pause before the reverb kicks in (although this may not be necessary for your 'far-away' sounds). Another trick favoured by ambient musicians is to use a reverb followed by a delay. This creates a very lush, nebulous atmosphere. Give it a shot!

## Synthetic sampling

**Question** I love traditional synthesis (subtractive, additive, FM, etc), but I think the key to truly original timbres lies with sample import facilities. I was wondering if you could recommend some cool synths that offer this function. Can you write a couple of lines about each, and if you have reviewed them in past issues, can you tell me what ratings they got?

**Answer** Samples can indeed provide rich resources for a sophisticated synthesis engine.

Stefanos Tsimenidis

"Another trick favoured by ambient musicians is to use a reverb followed by a delay. This creates a very lush, nebulous atmosphere. Give it a shot!"

## > Step by step

### Effects sends in Sonar 8



1 > Sonar has a flexible approach to effects routing. You can drop plug-ins straight into an existing channel or track's FX bin, or create any number of auxiliary sends. Let's try the latter. Here, we've right-clicked below the Master channel and selected **Insert Stereo Bus**. We've opened an instance of the **Lexicon Pantheon** reverb in the new channel's FX bin.



2 > Let's hook up a specific track to the new send. Right-click the track and select **Insert Send>Insert Send Assistant**. Pick **Send to Existing Bus** in the Assistant and choose our newly created bus as the target for the send. A reverb would normally be used post-fader, but since we're aiming for a trippy, ambient reverb, we check the **Pre Fader** option, then hit **OK**.



3 > Look at your channel strip for track 1 and note the new section devoted to your send. We have the channel fader for track 1 turned all the way down - our signal is routed to the send, but not the master output. This enables us to hear the reverb in isolation. You can adjust the levels of both channels to taste. For a deeper ambience, try sending the reverb bus itself through another effect, such as a delay.



## > Step by step

### Silent sidechaining in Cubase



1 > Sometimes you'll want to sidechain a synth to the beat of a kick drum without hearing the drum itself. Here we have AlphaCM playing a pad, while Kontakt provides a kick. We copy the Kontakt track (this will be our 'silent trigger') from bar 5 to bar 9.



2 > AlphaCM (included in the **cm Studio**) is our target instrument. Open the mixer for a clearer view of the proceedings and click the **edit** button on Alpha CM's channel. Insert Cubase's **Gate** plug-in (the procedure is identical for sidechain compression). Open the plug-in's GUI and hit the **Activate Side-Chain** button.



3 > Open the original drum track's **editor**, click on an empty **Send** slot and assign this to the sidechain input of your plug-in. Activate the send and crank up the level. Do the same with your copied kick track, but click the **Pre Fader** button on the Send this time and turn the fader all the way down. (Audio on the disc: **SideChainExample.wav**)



Devine Machine's KrishnaSynth chops samples into 'frames' and produces sounds worthy of worship



Camel Audio's Alchemy takes samples and resynthesises them into something golden

And why not? Samples offer a wider range of frequencies and dynamics than the sawtooth, triangle and square waves of analogue synthesis - this is why sample-based synthesisers ruled the hardware market in the 90s.

Many virtual synthesisers have been designed to do clever things with samples. So those musicians who do venture beyond the humble analogue waveform will find a wealth of instruments at their disposal...

Camel Audio's additive powerhouse Alchemy (9/10, **cm137**) springs to mind, as does Image-Line's Morphine (9/10, **cm117**). These instruments resynthesise samples using additive synthesis, enabling you access to the very harmonics that make up the sound. Then there's Devine Machine's KrishnaSynth (7/10, **cm115**), which chops imported samples into individual 'frames' that can be manipulated by various means. We don't have enough space here to describe *all* of the most interesting sample-manglers ever made, but you'd do well to check out the aforementioned instruments, as well as VirSyn's Cube (6/10, **cm63**), discoDSP's Vertigo (8/10, **cm67**), Image-Line's Ogun (8/10, **cm135**) and Wusik's Wusikstation (8/10, **cm79**), all of which can manipulate samples to a greater or lesser degree.

And don't forget that most of the big name samplers offer a full complement of synthesis functions, too. Steinberg's HALion (7/10, **cm78**), Native Instruments' Kontakt (10/10, **cm120**) and MOTU's MachFive (9/10, **cm121**) provide all of the advanced filters, complex envelopes, LFOs and effects processing that you'd expect from any decent synth.

## A pain in the side

**Question** I can do sidechaining in Cubase 4, but I want to use it in such a way that I hear a sidechained synth pumping even when there's no kick drum playing (ie, in the middle eight). I usually sidechain to the main kick (which is cool for the bassline), but if the synth is playing on its own, it's a problem. I need a silent trigger and am pulling my hair out trying to figure out how it's done.

Daniel Potter

**Answer** There are a few ways in which this could be accomplished, but the common technique is create a trigger track, as you hint at - the trick, however, is to use a pre-fader send, rather than the default post-fader setting on this

"Samples offer a wider range of frequencies and dynamics than the plain old sawtooth, triangle or square wave"



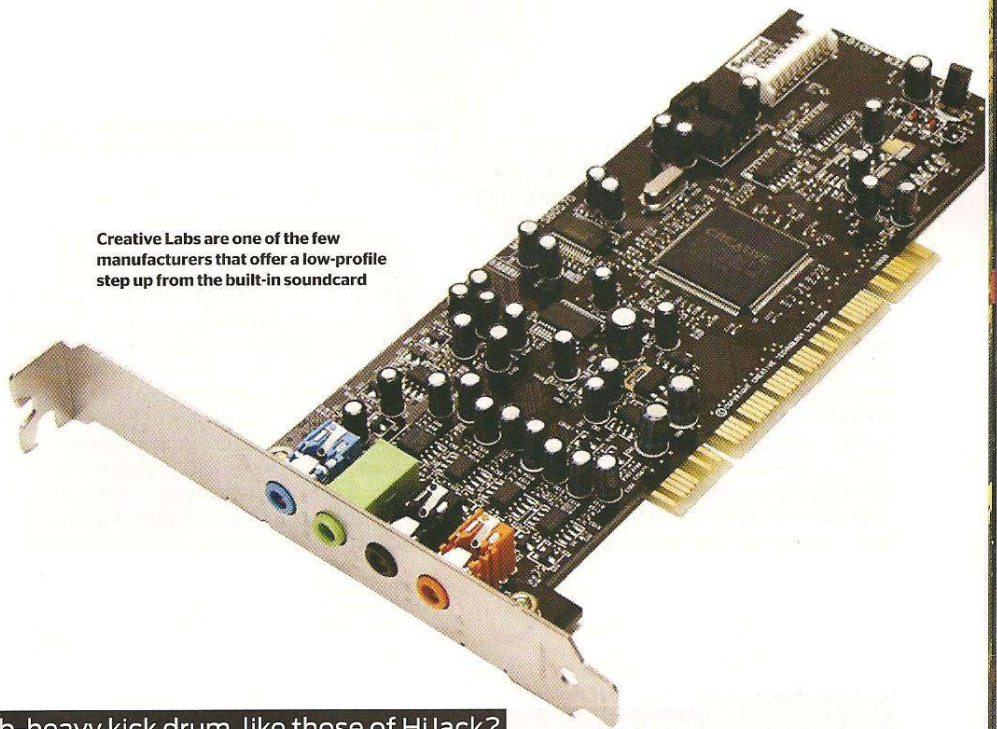
trigger track. See *Silent sidechaining in Cubase* on p116 to find out just how it's done.

## 'Facing up to the Truth

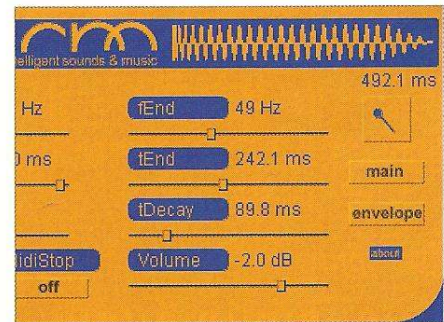
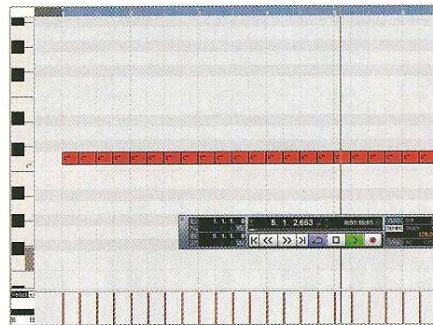
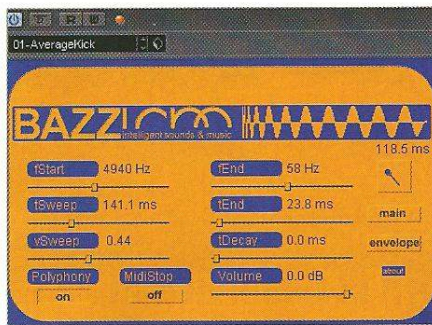
**Question** I've recently invested in my first set of studio monitors, a pair of Truth B3031as, and am now looking to get an audio interface. At the moment, I'm using the standard Sigmatel HD 5.1 audio device that came with my PC, a low-profile Dell Dimension desktop, and it is not up to scratch. I don't have any FireWire ports, however, and I know there are a lot of decent USB interfaces out there, but I want to know if PCI audio interfaces are better than USB ones. If so, are there any decent, low-profile ones available? My budget is around the £100 mark.

Johnathan van Niekerk

Creative Labs are one of the few manufacturers that offer a low-profile step up from the built-in soundcard



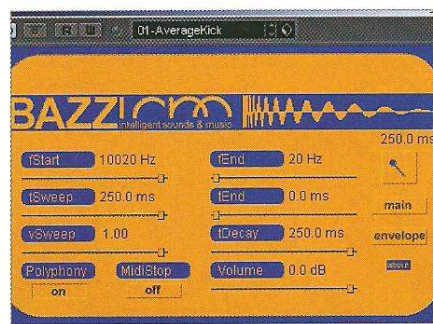
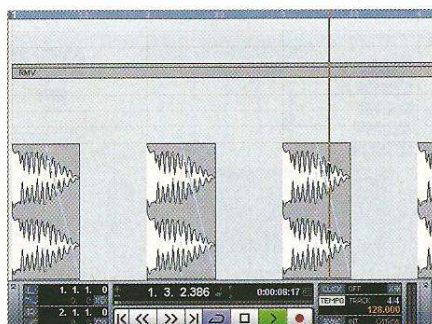
## Question How do I make a sub-heavy kick drum, like those of HiJack? Tom Kelly



**1** > Since the early days, house producers have by and large favoured kick sounds along the lines of those generated by the Roland TR-909 drum machine. Today, we're going to be using ISM's BazzISM 2, which is a simple yet highly flexible 909-style kick synthesiser. Start it with the default **01-AverageKick** preset.

**2** > It's important to set your sequencer's tempo and program your basic kick pattern before you go about tweaking the kick timbre itself. We'll be adjusting many time-dependent parameters, so it's very useful to be able to hear these within the context of the groove, as far as possible.

**3** > It's also vital to make sure that the pitch of the kick corresponds to the notes of your bass part. Copy the settings shown above to create a basic subby kick. We've chosen a resting frequency (**fEnd**) of **49Hz**, which is around the note of G, but feel free to adjust this to taste.



**4** > For a little more detailed control, export one kick as an audio file, then re-import it into your project and arrange it as appropriate. Now it's a lot easier to make finer adjustments to the length and fade-out of the kick. However, be sure to always make these kinds of decisions with the other track elements in mind.

**5** > If you want an edgier, modern sound, copy the above settings on to BazzISM 2. This time we're really aiming to make a transient layer to go on top of an existing kick. What sounds somewhat 'zippy' now will sound like a distinct click after some distortion. You'll need to remove the extreme low-end with a filter or some EQ before going to the distortion, though.

**6** > As an alternative to EQ, you could use a multiband distortion, such as the classic Quadrafuzz in Cubase. This can effectively work as a high-pass filter, and it's easy to experiment and create different tones. When layered with the previous kick we made, try a touch of short reverb applied only to the new transient layer.



**Answer** You don't specify exactly which low-profile Dell you're using, but we have one here that, despite its size, can take standard PCI cards (albeit only a pair of them). If this is the case with your machine, you have plenty of options from which to choose, not least the ever-popular M-Audio Audiophile 2496.

If, however, your Dell offers only low-profile PCI (ie, half-height) card compatibility, the news isn't so good. While there are plenty of generic low-profile cards from companies like StarTech out there, these are not necessarily going to offer better quality than your built-in audio system. You could bump up the quality a little with a low-profile Sound Blaster Audigy SE 7.1, but this still won't reach the standards of a truly professional audio interface. On the plus

side, it'll be cheap - we've seen that very model selling for well under £50 online, for example.

If standard PCI or FireWire interfaces aren't viable options and you want professional quality, you will indeed have to explore the world of USB. Fortunately, there are a huge number of USB2 audio interfaces on the market these days, and many of them offer the sort of power and features that were once usually restricted to FireWire interfaces. Of course, you're going to get what you pay for, though. With a limited budget, you can expect a couple of inputs and outputs, and maybe MIDI, but on the flip side, you'll get much better sound quality than that offered by your computer's built-in audio system.

## Parallel universe

**Question** What is parallel compression? I heard that it's good for drum sounds, but I've no idea what it is or how it's done.

Jem Baynes

**Answer** Parallel compression (aka New York compression) means mixing the compressed and uncompressed signals. The idea is that you can compress far more heavily, because mixing in the dry signal restores the initial snap and punch of each hit. There are a few ways to do it, but the easiest is to use a compressor with a mix knob, like the CM Studio's CompressiveCM. Use the fastest attack time, a high ratio and quick release, then reduce the threshold until it's pumping and set the mix to taste! **cm**

**Question** How do I make lush pads like the one from Leviticus' *Burial* in software?  
Jim Williams



**1** > The original sound was allegedly a sample from a popular keyboard of the time, but we can approximate it using LinPlug's CronoX3 ([www.linplug.com](http://www.linplug.com)). To start, click the **Effects** tab at the top of the interface, then deactivate all effects - FX1 and FX2 will be on by default.

**2** > Go to the **Modulation** page and set the **Release** on the Mod 1 and Mod 2 envelopes to maximum. In the Matrix, route **ModEnvelope1** and **ModEnvelope2** to control **Amp Gen 3** and **Amp Gen 4** respectively, as shown above.

**3** > Go to the **Gen 1+2** page. Set both generators to **Oscillator** and turn the **Waveform** control all the way to the left. Increase the **Spread** to about half-way, detune the **Cent** knobs ever so slightly from each other, then route the generators to **Filter 1** and **Filter 2** respectively.



**4** > Repeat the last step on the **Gen 3+4** page. This time, however, activate **FreeRun** on both oscillators and turn the **Volume** for each down to about 12 o'clock. This is critical to the smooth character of the sound.

**5** > Go to the **Filters** page and pan one filter hard left and the other hard right. On both, set the **Keytrack** to **100**, **Cutoff** to about **300** and **Resonance** to around **25**. Push both envelope **Attacks** to about **4**, and their **Decay** and **Release** times to maximum.

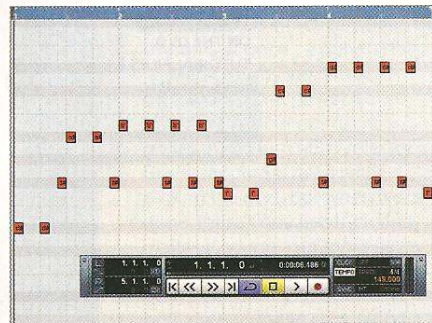
**6** > Return to the **Modulation** page and set a soft **Attack** and long **Logarithmic Release** on the Amp envelope. Finally, use the **Chord** memory (above the keyboard) to learn the notes C, E, G and B (a major 7th), for an old-skool, 'sampled chord' feel.



## Question

### How do I create a hardstyle lead synth sound?

Phil Turner



1 > Almost all hardstyle leads are based on several detuned sawtooths, combined to create one thick unison sound, so we've opted for Novation's V-Station. We're using the TC PowerCore version, but you can just as easily follow along with the native version - or, indeed, any multi-oscillator analogue synth plug-in.

2 > Reset the synth by selecting an empty patch. At the bottom left-hand corner of the interface is the Program section. Use the down arrow to scroll to a blank patch. One click brings us to the patch **User 499** - all settings are neutralised.

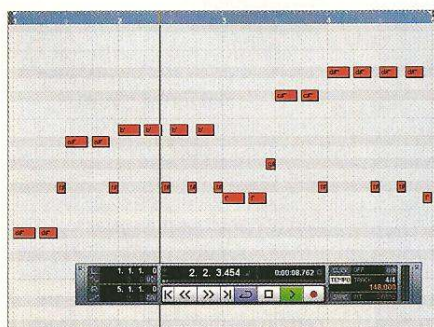
3 > In your sequencer, program an appropriate riff. It's important to get the tempo and groove right - in if doubt, try setting the **Tempo** to **148bpm** and the **Quantise** to **1/8 Triplet** for that bouncy feel. Hardstyle riffs are typically based around simple chord progressions, using only two or three different notes per bar.



4 > Once you're satisfied with your riff pattern, go back to your synth and hit the **Extra** tab at the top of the interface. Select **Monophonic** mode, set the **Unison Detune** and number of **Unison Voices** to maximum, and check that the **Start Phase** is at **0** for free-running oscillators.

5 > You should already be in hardstyle territory, but let's get it even stronger. Return to the **Main** page and activate **Osc 2** and **Osc 3** by pushing their volumes up to maximum in the Mixer section. Now **Detune** each of them in opposite directions by the maximum amount for a super-phat texture.

6 > With the riff playing, fine-tune your settings to suit what's going on in the track. As a rule of thumb, the higher the pitch of the lead, the more **Detune** you can get away with. You might also want to add a little Portamento, and experiment with the filter settings. We've reduced the **Keytrack** amount, for a more consistent sound.



7 > If it still doesn't sound quite right at this stage, the problem will almost certainly lie with the MIDI programming. Experiment with note lengths. Sustained notes often provide extra power, but you might have to change the **Quantise** to a finer resolution (such as **1/16 Triplet**), to adjust the note lengths and ensure that they're not too close together.

8 > Open up a second V-Station, then duplicate the MIDI part, so that both synths are playing in perfect unison. Save ad load the settings from the first one into the second, then pan the two synths hard left and right for a super-wide sound.

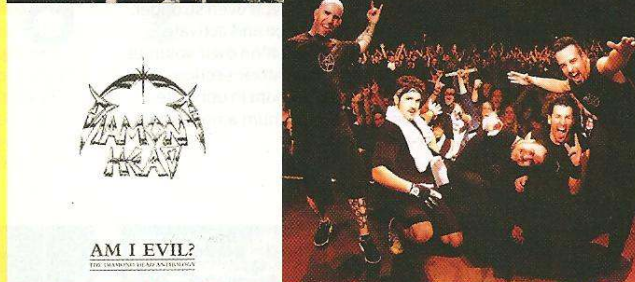
9 > Although we have a pretty thick and wide sound, hardstyle leads require a generous serving of reverb, too. Route both of the V-Stations into one bus, then use the auxiliary sends on the bus to feed the signal in a large reverb.



# >cmfocus

Modern metal builds on the foundations laid by 'The Big Four', but cranks up the intensity even further, using the latest production techniques. Here's how it's done...

## METAL



> The 80s was a glorious time for metal, kicking off with the new wave of British heavy metal (NWOBHM), a movement that included the likes of Iron Maiden, Diamond Head and Saxon. Later in the decade, a new breed of bands took the NWOBHM formula and made it faster and even more aggressive: thrash metal was born, with 'The Big Four' of Metallica, Megadeth, Slayer and Anthrax hogging the spotlight.

During the 90s, the mainstream metal of Sepultura, Pantera, Machine Head and Fear Factory offered a groovier take on the thrash template - more unorthodox acts like Strapping Young Lad and Meshuggah, however, would offer even more twisted visions of quasi-futuristic, thrash-influenced metal. Extreme subgenres, such as death metal and black metal, also plumbed the depths of technical and sonic excess, while more melodic approaches were represented in styles such as power and progressive metal. Throughout this decade, triggered drums and downtuned/seven-string guitars became staples of the metal sound.

As the new millennium began, a new wave of bands came to the fore, with a hybrid style encapsulating elements from many of these subgenres - this movement is often referred to collectively as the new wave of American heavy metal. While the

"Triggered drums and downtuned/7-string guitars became staples of the metal sound"

likes of Trivium and Killswitch Engage pursue a highly melodic style (no doubt inspired by the Swedish melodic death metal of In Flames and At The Gates), others, such as Lamb Of God and Mastodon, follow a more thrashing, groove-centric path.

Of course, our potted history barely scratches the surface of metal, but it gives some idea of the diversity within the scene. On the production front, while there are certain aesthetic aspects that are particular to specific genres, the fundamental techniques can easily be put to work using modern music software and will stand you in good stead for any metal recording project. So, without further ado, get ready to wreck your neck, as we show you how it's done!



## Laying the foundations

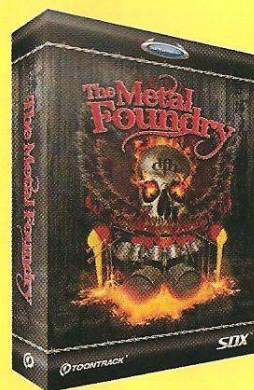
As metal evolved, becoming faster and more complex, it became clear that miked drums simply weren't enough to cut through a mix. This is due to it being so difficult to hit the drums (particularly the kick) at a consistently hard level, especially when playing fast. A solution was found in 'triggering' the drums, whereby a sample (usually at a fixed volume level) is played back each time a particular drum is struck, either to be blended with the acoustic performance or to replace it entirely. This can be done using hardware hooked up to the drum kit itself, or by triggering directly from the recorded drum tracks (eg, using a plug-in like Drumagog).

In metal, the kick is triggered almost without exception, while the ratio of trigger-to-mic on the snare and toms will likely be influenced by the quality of the recording and playing.

Thankfully, you don't need a real drummer or kit to create awesome metal drum tracks, as

there are several powerful drum sample players on the market today, including FXpansion's BFD2, XLN Audio's Addictive Drums, and Toontrack's EZdrummer and Superior Drummer 2.0. We'll be using the latter in conjunction with Metal Foundry SDX (see p107) for our drums, and since Meshuggah's Tomas Haake went to the trouble of performing the thousands of hits that make up the kits, we'll pay tribute to his band with our own Meshuggah-esque track.

To create a convincing drum part, we're careful not to program anything that a human drummer couldn't play. A typical Meshuggah riff features kick drums locked tightly with the rhythm of the guitars, and



Metal Foundry SDX is particularly appropriate

snare accents accentuating the riff. The right hand, meanwhile, plays quarter notes - this helps to maintain a groove and adds interest as we effectively have two rhythms at once - a polyrhythm.

Metal drums are all about consistency and power, so we program most of our drum hits at maximum MIDI velocity. Grid-snapping is used while writing the part, but when we're done, there's one last trick that makes it sound a lot more like a real drummer: the **Random Quantise** feature in Cubase is

used on the whole part, to move each hit by a tiny amount (3 ticks), giving a more lifelike feel. The MIDI is on the DVD (**Drums.mid**) - now read on to find out how we mixed it! **cm**

## > Step by step Molten beats



**1** > After picking drum and cymbal sounds in Superior Drummer 2.0, we turn off the **Bleed** on the kick, snare and tom channels. This disables SD2.0's emulation of mic bleed, where the sound of, say, the snare being struck leaks into the tom mics. We also open the overhead channel's Bleed and set it so that only the cymbals come through these mics. This gives us a cleaner, more separated sound.



**2** > For the kick drum, EQ is used on the **KDR IN** (inside kick) channel to cut some mid-range mud at 400Hz and boost at 10kHz to bring out the characteristic modern metal 'click'. The Construct screen's Envelope controls are used to shape the amplitude curve, enhancing the attack and suppressing the tail-end boom - this is much more controllable than using compressors and noise gates.



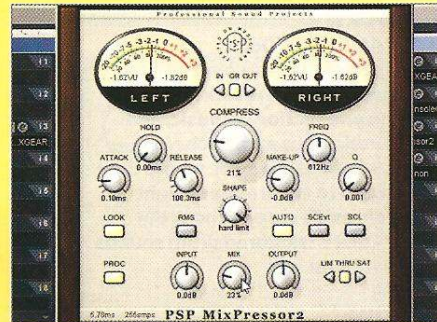
**3** > Metal Foundry has four snare mics, and on the top dynamic mic, the **Snare»Shotgun** preset gives us a brutal mid-range punch. On the top condenser, EQ, compression and transient shaping yield an elongated resonant ring, and the **Snare»Rattle** preset on the bottom mics brings out the sound of the snare wires. We balance the four mics for the desired combo of punch, resonance and rattle.



**4** > The Envelope section is used to suppress the tail of each tom tom, then they're all routed to a bus in SD2.0's mixer, with the **Toms»Swedish Meatball** preset applied for compression and beefy EQ - a dash more treble is added to taste. The overheads (ie, cymbals), meanwhile, enjoy a 5kHz boost, 2.5:1 compression with fast attack and medium release, and a bass cut - these settings are shown above.



**5** > The kick, snare and toms sound *too* dry, so we turn to the **Amb Far** room mic track. In the Bleed panel, the cymbals are switched off and the kick is turned down 6dB or so, to prevent boom. Transient shaping is used to suppress the attack and boost the sustain, giving a 'cushion' of sound, and the bass and treble are rolled off. The channel is set just loud enough to make a difference.



**6** > All of the drums come through one channel on Cubase's mixer, on which we have a PSP MixPressor2. With the settings above, the drums pump like crazy - the trick is to use the **Mix** control (set to just **22%** here) for parallel compression, giving a bigger sound without ruining the transients. EQ is also applied, with 100Hz and 8kHz shelf boosts and a further boost at 5kHz. (Audio on the disc: **Drums.wav**)



## Recommended listening

### METALLICA

#### MASTER OF PUPPETS (1986)

Considered by many to be the greatest metal album ever made, *Master Of Puppets* features a perfect example of the scooped rhythm guitar sound. Bass player Cliff Burton also achieves the Holy Grail of playing great metal bass parts that don't always follow the guitars but can still be heard.

### SLAYER

#### REIGN IN BLOOD (1986)

Slayer's sound is raw and aggressive - Kerry King and Jeff Hanneman's riffs perfectly complement Dave Lombardo's insane drumming. Anyone interested in nailing metal drum programming should study Lombardo's frightening fills - he's a big influence on pretty much every metal drummer out there.

### FEAR FACTORY

#### DEMANUFACTURE (1995)

They weren't the first band to use triggered drums, but Fear Factory's breakthrough album, *Demanufacture*, certainly helped to popularise them. Drummer Raymond Herrera's machinelike double kick drumming locks in tightly with razor sharp, speedpicked rhythm guitars, and an industrial edge further helped to push the sound of metal forwards.

### MESHUGGAH

#### DESTROY ERASE IMPROVE (1995)

The second album from these Swedes is a real metal milestone, welding thrash to mindmelting polyrhythmic riffing and jazz fusion-influenced guitar leads. Meshuggah would later go on to push the envelope even further with 8-string guitars and more abstract riffage.

### LAMB OF GOD

#### SACRAMENT (2006)

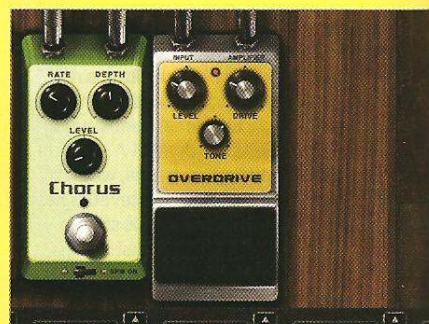
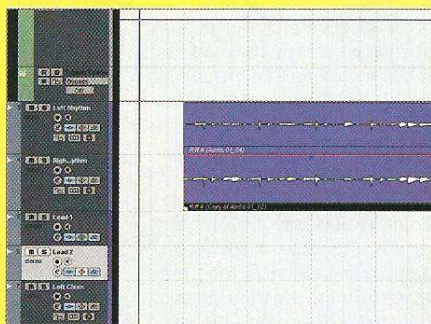
Ultra-perfectionists Lamb Of God will spend as much as six months writing one section of music, and their meticulous approach also applies behind the desk, where they work hard to ensure super-tight recordings. Be sure to check out Chris Adler's triggered drum sounds on this album.

### TRIVIUM

#### ASCENDANCY (2005)

Trivium's debut release was a phenomenal success. Mixed by legendary metal producer/mic engineer Andy Sneap, this massive sounding album amounts to a perfect amalgam of the band's classic metal influences.

## > Step by step Metal guitar tones



**1** > We record two rhythm guitar tracks - they're identical, aside from some harmonies in the second riff. At this stage we're concentrating on getting the tightest takes possible, rather than the amp tone. Copy and paste the best takes if you need to - just don't copy from one track to the other as you'll lose the double-tracked effect that you only get by having different takes on each channel!

**2** > We solo the first guitar track, place IK Multimedia's **AmpliTube 2** on it and scour the presets for a 'starting point' - we settle on **Vai Solo**, using the **Modern Tube Lead** amp. It's far too wet, so we disable all the stomp and rack effects, and set the Amp panel's **Ambience** slider to **0**. For extra crunch, an **Overdrive** pedal is added, and the **Gain** on the amp is turned down to compensate.



**3** > In Cubase's mixer, we **Alt+drag** **AmpliTube 2** onto the second guitar track to copy it, then pan the guitars hard left and right, and route them to a Group channel - this makes it easy to process the sound of both guitars at once. A **PSP ConsoleEQ** is inserted on the Group channel, with a high-pass filter set at 80Hz to prevent the guitar's low end interfering with the bass and kick drum.

### POWER TIP

#### >Dual to the death

With any recording, it's crucial to get the sound right at the source, and for metal, that means using a guitar with a humbucker pickup in the bridge position. Strat-style single-coil pickups are too thin-sounding, and neck pickups lack the bite and crunch you need for metal rhythm guitar.

If you're downtuning your guitar significantly, you should think about using heavier gauge strings to combat tuning instabilities - the guitar we're using is an Ibanez RG 7-string tuned to B<sup>+</sup>.

You'll also need an audio interface with an instrument input, or a suitable preamp/DI box to convert the guitar signal to line level, so as to not damage the tone.

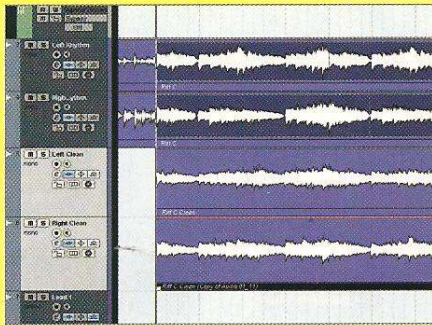


**4** > Now for the famous heavy metal mid scoop! Where exactly you make the scoop depends on the guitar, the amp, the genre and, indeed, the rest of the mix, but in our case, a high-Q cut at around 700Hz does the trick. We also dial in a dash of extra crunch with a wide-bell boost at 4kHz (incidentally, it's often said that narrow cuts and wide boosts give the most natural results when EQing).



**5** > The guitars sound slightly anaemic, so we insert PSP's **MixSaturator2** on the group channel and use the **Tape3** mode to approximate the warm, softening effect associated with analogue gear. Increasing the **Drive** and carefully dialling in the **Bass** and **Treble** sections tames the treble fizz and adds some low-end grind. Finally, gentle low- and high-pass filtering using ddmf's **IIEQPro** further focuses the tone.



> Step by step **Cleaning up**

**1** > The third riff in the song uses some spaced-out chords, and with the intense distorted rhythm sound we've got going on, it's hard to make out the notes. To add clarity, we record a further two tracks playing the same arpeggiated lick, but this time we use a clean sound to layer over the existing rhythm tone.



**2** > AmpliTube X-Gear is used, giving access to modules from various AmpliTube products. Chorus and compression pedals feed AmpliTube 2's **Solid State Clean** amp, running through a **1x12 Combo** speaker. With delay, EQ and reverb rack effects, this all adds up to a spacious, spooky, twanging tone.



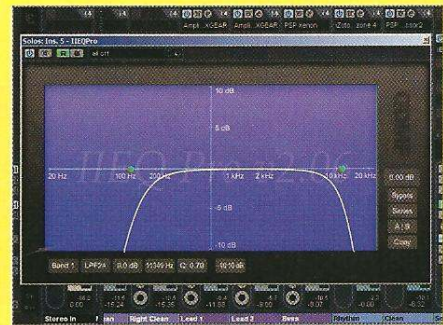
**3** > Both clean tracks are sent to a Group bus, and strong compression is applied to help them compete with the rhythm guitars, followed by EQ with a 120Hz high-pass and treble boost. u-he's Ubbik-F flanger adds to the spaced-out effect, and a low-pass filter at 8kHz cuts treble harshness. (Audio: **Guitars.wav**)

> Step by step **Lead the way**

**1** > We've got two solos to lay down, and after nailing satisfactory takes, we use different amp setups for each and pan them slightly left and right - this gives a 'call and response' feel when the melodic second solo comes in to resolve the mayhem of the first one.



**2** > With lead sounds, you can be far more liberal with effects, so plenty of noticeable delay and reverb gives us an epic feel - perfect for those wailing bends and melodic phrases! It's best to dial in the levels of these effects while the full mix is playing back - sometimes they need turning up more than you might expect.



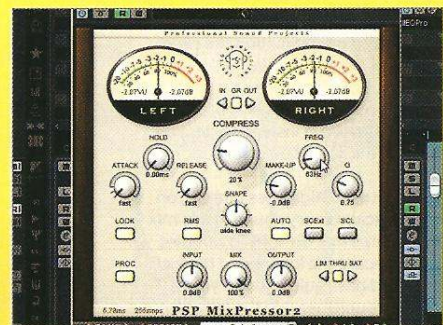
**3** > The first solo track uses similar amp settings to our rhythm sound, so we copy the EQ settings over and tweak a bit, while the second lead requires only high-pass filtering. The leads are routed to their own bus and further cuts are applied at 100Hz and 12kHz (shown above), just to be on the safe side. (Audio: **Leads.wav**)

> Step by step **Metal bass tones**

**1** > Unlike the guitars, there's no need to multitrack the bass - one track will do it! The AmpliTube X-Gear shell is used once again, with Ampeg SVX's hard rockin' **SVT-4 Pro** in place. We dial in a bass-heavy tone using the amp's EQ and lots of compression, which comes from an added virtual stompbox and the amp itself.



**2** > For greater definition, we layer the clean tone with a distorted, mid-range one. Routing configuration **8** (in the bank of eight numbered buttons) gives a second chain of stompboxes, running in parallel, and we have the chain shown above. The lower-right **Volume** knob is used to set the distorted signal's level.



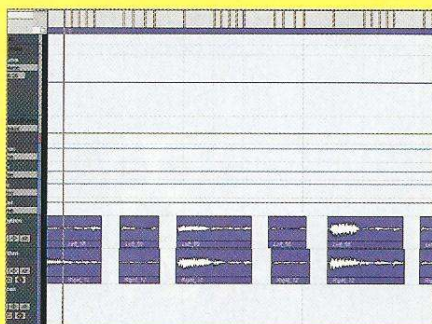
**3** > To really solidify the low-end, we call on PSP's **MixPressor2** - the **Q** knob is increased to activate the sidechain filter and the **Freq** knob is focused on the lower octave (the **SCL** button lets you hear the filtered tone). This makes the compressor react only to the bass, and thus it can be used to stabilise any low-end wobbles.



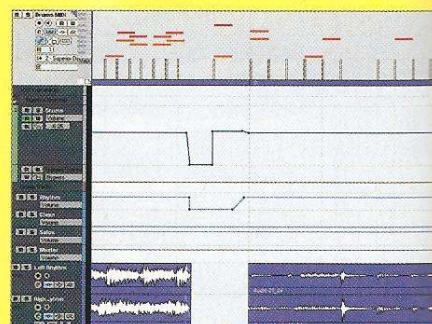
## > Step by step The finishing touches



**1** > The mix sounds tight, but it's too dry so a 'stealth Reverb' is called upon from Christian Knufinke's **SIR2** added to an FX Channel. We go for the **True Stereo Studio** preset, set it to **100%** wet, use the amplitude envelope to make it shorter, and use the EQ to lop off the bass and treble. The drum, rhythm and lead tracks are sent to this channel, but in very small amounts – once again, subtlety is the key.



**2** > Metal is all about precision, and in the case of the second riff, we do a little creative editing the first time it plays, chopping out and deleting all the gaps between notes using the scissors and eraser – this gives a very brutal, staccato sound, like a noise gate. We also cut out and delete all the 'silent' parts between phrases in our solo, since they're full of finger-shuffling noises.



**3** > Volume automation is used as needed. The bass guitar level is increased during the third riff, while during the solo, the rhythm guitars are dropped in level slightly. The solo level itself is automated to compensate for changes in playing style and tone. Finally, we cut the volume of every track just before a snare hit explodes out of nowhere at around 56 seconds! (Audio: **Unmastered.wav**)

## Metal mixing tips

**1** Although our walkthroughs cover each mix element in turn, it's important to understand that mixing – in any genre – is very much a balancing act. As you refine the mix, it's not at all uncommon to nudge channels and EQ bands 0.1dB here and there until you get it just right.

**2** Don't feel that you need to use the same software as we did in our walkthroughs – there are plenty of alternative plug-ins that give similarly good results. And a decent monitoring setup and a good set of ears are always preferable to expensive plug-ins!

**3** When dialling in guitar amps (whether real or virtual), you don't need to crank everything up to 10 for a heavy sound – this can result in a tone that's overly mushy or constantly fizzy. Use your ears to find the 'sweet spot'! And if the amp lacks crunch, try an overdrive pedal in front of it.

**4** Comparing your mix to commercial tracks is a great way to ensure that you're on the right path, but don't get too hung up on replicating the exact sounds of your favourite tracks, as this is practically impossible – do you even own two metal albums that sound 'the same'? The idea is instead to get your tracks in the same sonic ballpark.

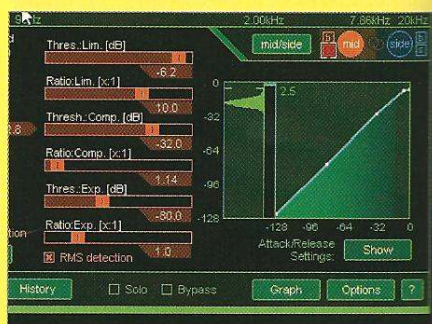
**5** We've used high-pass filtering on practically every sound in our mix – this ensures that unwanted rumbles don't obscure the low-end of the kick drum and bass guitar. And if you're having trouble hearing the low-end, try placing a low-pass filter on your master bus at around 100Hz!

**6** We haven't mentioned vocals, but the techniques are much the same as for recording any other style of music, and the guitar editing tricks used elsewhere in this tutorial are also applicable to getting a tight sound.

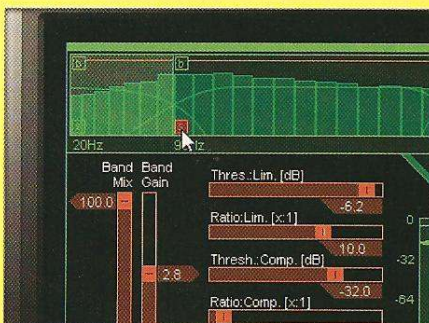
## > Step by step Masters of metal



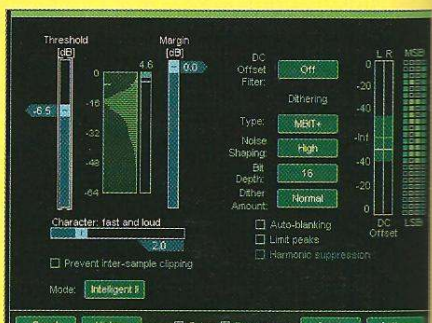
**1** > With the track mixed, it's time to master it – we use iZotope's **Ozone 4** on the master bus. The EQ curve above helps to make our mix sound as bright as a commercial release. Next is the **Multiband Harmonic Exciter**, which is used to heat up the lower band (below 100Hz) a dash, with the **Am** set to **8**, but the **Mix** only on **20** – gently does it!



**2** > Next is the **Multiband Dynamics** module, used in mid/side mode, which is like treating the drums and bass (mid) separately from the guitars (side). The limiter threshold of each band is set to catch occasional peaks only, but the compression thresholds are set much deeper, to compress the entire useful musical range.



**3** > For transparency, we apply a light compression **Ratio** of no more than **1.2:1** to each band (aside from the mid channel's bass band, which uses a firmer **1.5:1**). The **Band Gain** for each band is set so that the perceived volume is the same as when it's bypassed – thus the multiband compressor as a whole doesn't actually alter the tonality at all, but simply 'glues' the mix together.



**4** > Finally, we slam it through Ozone's **Loudness Maximizer** in the excellent **Intelligent II** mode, with the **Character** slider (ie, release time) set to **2.0**, which iZotope tell us equates to 'fast and loud'. Aggressive limiting can impair sound quality, but it's up to you whether you feel it's worth the sacrifice for your mix to 'compete' with today's ultra-hot tracks. (Audio: **Mastered.wav**)



# BOOTLEGS & REMIXING

Get the skills, get the stems, get famous!  
Make the ultimate remix **TODAY**. We'll show you how!



**APPEARING INSIDE...** TocaDisco | Funkagenda | DJ Mehdi | Lifelike | Sharam Jey | Mason  
Martin Solveig | Alex Gaudino | Stonebridge | Dave Spoon | Grum | Jori Hulk

EXCLUSIVE BEHIND-THE-SCENES-ACCESS!

## ORBITAL ON TOUR

Their massive live rig  
**BUSTED APART!**

HANDS-ON AND EXCLUSIVE

### GEAR!

- > M-Audio Axiom Pro
- > Vestax VCM-600
- > Kurzweil PC361
- > APS IO monitors
- > Kyma Pacarana  
supersynth
- > Sonar V-Studio VS-700
- > Elektron Monomachine  
SFX60 MkII AND MORE

TESTED TO DESTRUCTION!

Learn from  
**THE EXPERTS**

**AUGUST ISSUE  
ON SALE  
NOW!**

AVAILABLE IN STORES  
AND ONLINE

MYFAVOURITEMAGAZINES.CO.UK

# FutureMusic®

Technique and technology for making music

Future Music is the mag for the latest gear and how today's cutting-edge music makers use it.  
We've been making the future since 1992. Make sure that you're part of it.



# Next issue **cm**/143

**ON SALE**  
TUESDAY  
SEPTEMBER

## propellerhead **record**

The essential guide to the biggest music software release of the year, plus our verdict in the **cm** review!



**REVIEWS** PROPELLERHEADRECORD / EXPANSIONDCAM: SYNTHSQUAD / AVID SIBELIUS 6 / INTELLIGENT DEVICES  
MARSHALL TIME MODULATOR / XILS-LAB XILS 3 / D16 GROUP NITHONAT / VIENNA IMPERIAL / LEXICON IONIX UZZ

**cm**DVD

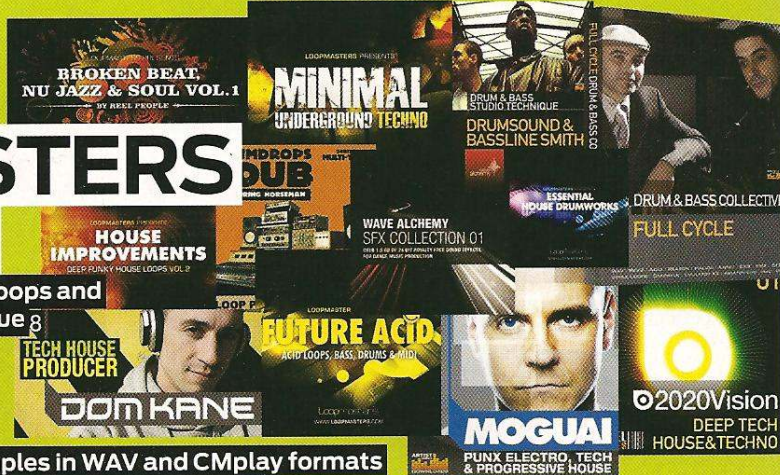
EXCLUSIVE FREE SOUNDS!

### LOOPMASTERS SAMPLES

Massive collection of royalty-free loops and hits from the Loopmasters catalogue 8

**PLUS!**

2000+ 24-bit cm sound effect samples in WAV and CMplay formats



**PLUS!** PRODUCER MASTERCLASS: DR ALEX PATERSON / **cm** FOCUS: DUBSTEP / BEAT-MAKING IN FL STUDIO / THE **cm** GUIDE TO TRANSIENTS / THE FACTS ABOUT MCPS AND PRS / MORE DELAY FOR GUITARISTS / FIGHTSTAR INTERVIEWED

All magazine and disc contents subject to change