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June 2020 / CM282

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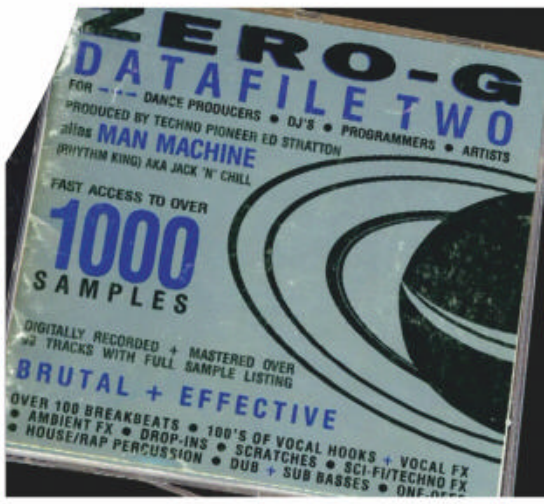
Top dystopian production tips

FERRY CORSTEN BLACK BOX
Superstar dance interviews

STARK RAVING SAMPLES!
Classic collections revisited

90s SPECIAL

Top workshops, interviews and guides to bring back the good times!



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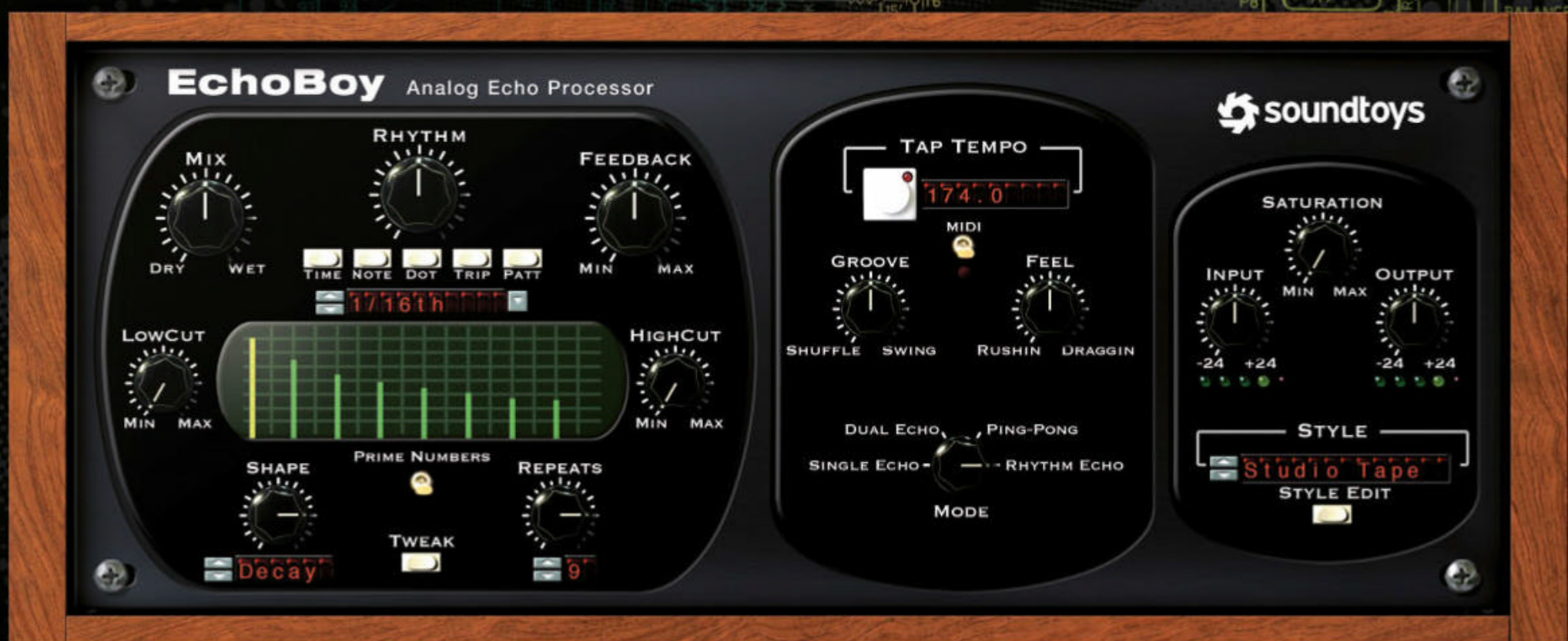

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GOOGLE PLAY
for Android & Chrome for PC/Mac
play.google.com

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See page 81 to find out how to download this issue's exclusive content

welcome

I'm not even going to try and comment on the current world 'situation' (as I'm no expert and I'm probably standing here as open mouthed as you are). Still, with some British stiff-upper-lip resolve (and not the type that grabs toilet rolls willy-nilly), I have decided to keep calm (ok, just a little bit panicky) and *carry on making some damn music*. And by reading this it would suggest you have too, and hopefully we've got the issue of *Computer Music* to help get that smile back on your face. Or should I say *'smiley'*. Yes, I find that there's nothing better, when faced with tough issues in the present, than to bury my head in the sand and reach for a happier time: the 90s! I don't mind admitting that the 90s was my kind of decade, but I didn't plan this special issue through my own selfishness. There have been several nods back to the 90s of late, not least by Calvin Harris and Moby, and while it might not be the time to once again gather in the fields for an illegal rave, it is a great time to look back at a momentous decade (and something that maybe we all need right now).

> "Keep calm and *carry on making damn music*"

Lastly, like many, we're tracing a course through the coming weeks with some uncertainty, so do bear with us. With a lack of open shops out there, we're only printing the magazine for subscribers for the foreseeable, so that is the best way to enjoy the physical experience. For the rest of you, go digital – see **p56 & 97** for more. Enjoy and stay safe.

Andy Jones **Editor**

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cm/news

NEW RELEASES > COMMENT > INDUSTRY HAPPENINGS

Tracktion Waveform 11 Pro

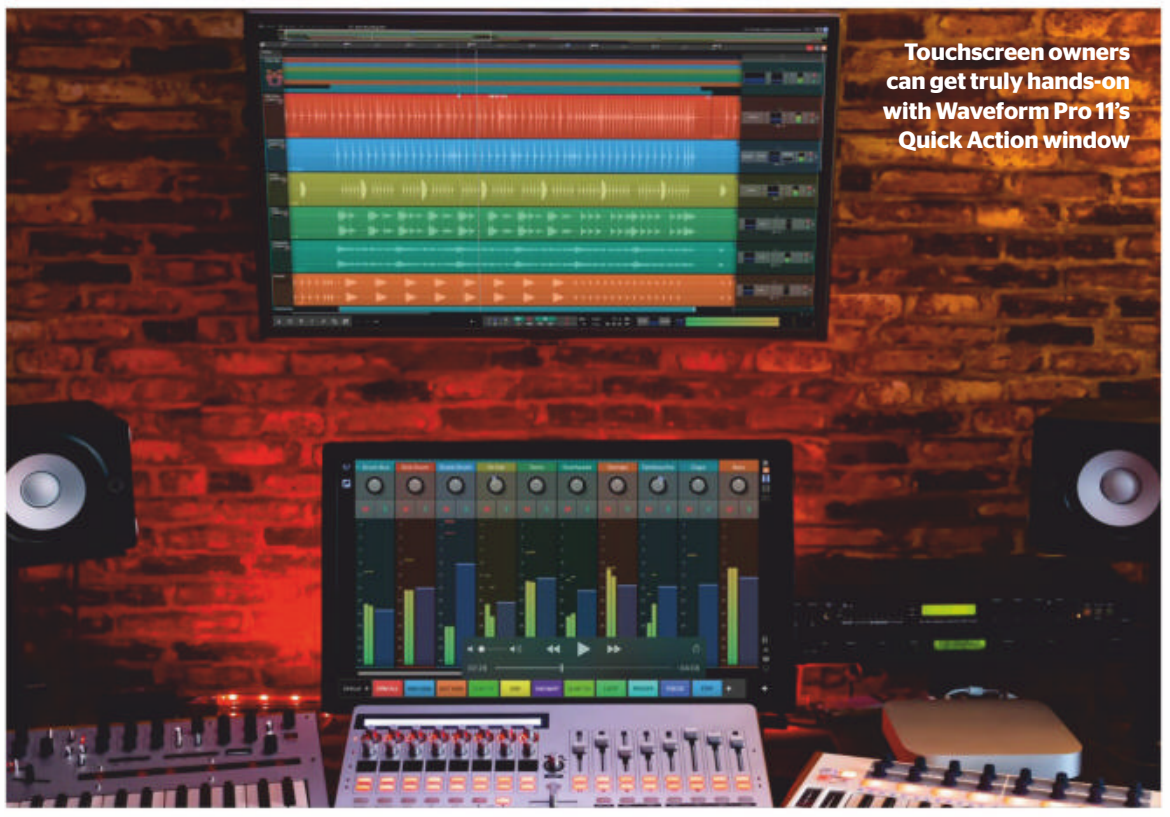
The unique, underappreciated DAW gets a doozie of an update!

> Maintaining their annual update schedule, Tracktion Software have released version 11 of their brilliant Waveform Pro DAW, introducing a raft of new features.

The new Edit Overview puts a full-length thumbnail of your Waveform Pro Edit (project) at the top of the interface, with a resizable 'view port' for navigating and zooming in the main window below, as well as the ability to click the playhead to any point on the timeline. Almost all Edit window panels can now be broken out into their own windows for secondary monitor placement, too, with saving of complete window states; and you can even set your second monitor to be the default display for all plugins.

The Arranger Track lets entire top-to-bottom sections of a project be grouped in blocks, which can then be dragged left and right along the timeline in order to quickly rearrange them into a song structure. Arranger clips can swap or replace each other when dragged on top of each other, and tracks can be selectively excluded from Arranger clip movements if required.

Then there's the Quick Action bar – a vertical strip into which shortcuts and macros are assigned to customisable buttons – and the Quick Action window, which provides a touchscreen-friendly UI for mixer and button control. And auto-pitch-enabled audio clips are now able to follow the Chord Track.



Touchscreen owners can get truly hands-on with Waveform Pro 11's Quick Action window

On the devices front, five new MIDI processing plugins have been worked in, including an arp, a note repeater and a very powerful-looking 'one-finger' chord generator. And 122 new audio effects have been added to the Artisan Collection – being essentially reskinned freeware, though, that's not as big a selling point as it maybe appears. Oh, and third-party plugins are now sandboxed for stability.

We'll be giving you our verdict on Waveform Pro 11 in our forthcoming review, but if you're already sold, it's available now for Windows, macOS, Linux and Pi, starting from $119.

tracktion.com

Enter the vast and creatively empowering universe of SampleTank 4 for free

IK Multimedia SampleTank CS

Good news for those feeling the undeniable draw of IK's amazing SampleTank 4 ROMpler (9/10, cm269) but unwilling or unable to buy it outright: IK have released a free version, loaded with 50 instruments (4GB of sample content) and 200 MIDI files. In all other regards, SampleTank 4 CS is fully functional, and you can add to it with a range of paid expansions as and when. Download it now for free.

ikmultimedia.com

Like the TK Maxx of the plugin world , Softube Volume 4 gives great value brand names for less

Softube Volume 4

The latest version of analogue emulation specialists Softube's comprehensive software instrument/effects collection has landed, offering a $3000+ saving on its constituent plugins bought individually.

Volume 4 adds to the 22 plugins of Volume 3 with the American Class A channel strip, Marshall Plexi Super Lead 1959 amp sim, Passive-Active Pack classic EQ triple-header, self-explanatory Spring Reverb, Acoustic Feedback extreme feedback simulator, and Monoment Bass sample-powered bass synth. The established roster includes official emulations of high-end hardware signal processors by Drawmer, Weiss, Summit Audio and others, as well as the lauded Parallels and Modular synths, and Heartbeat drum machine.

Positioned to rival the likes of IK's T-RackS and Universal Audio's UAD bundles, Softube Volume 4 is extraordinary VFM for anyone after a versatile set of unarguably pro-quality plugins. You can get it now for €799, and upgraders from previous Volume versions can log into their Softube accounts to see their discounted pricing.

softube.com

Soundevice Digital Autoformer

Described as "indispensable when creating vocal or voice-over tracks" and "an ideal companion for mixing both bass guitar and double bass performances", but helpful on drums, too, this is a new dynamics effect from the United Plugins coalition.

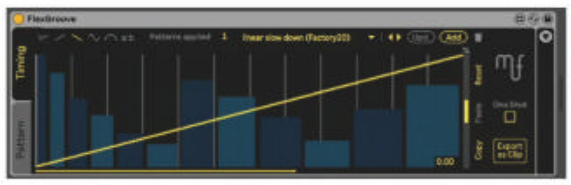
The plugin has three sections. The Preamp is based on the developer's Front DAW plugin, with the same three analogue circuit choices (British, American and German) and Mojo saturation knob. The Compressor is fast and transparent, and does its thing "without changing your signal's spectral character". And the Balancer module uses lookahead to detect volume discrepancies before they happen,

then applies corrective auto-levelling to bring the signal amplitude up or down. Each section can be independently bypassed, and five LED ladder meters let you see what's happening to the volume at every stage. Available now, priced €99.

unitedplugins.com

Martin von Frantzius FlexGroove

Designed to assist in "off-the-grid MIDI sequencing", FlexGroove is a time-bending Max For Live MIDI processing device built by composer-violinist-developer Martin von Frantzius, and released by Ableton themselves – the ultimate endorsement, you could say.



Six timing modes each establish the general plugin behaviour, from gradually increasing or decreasing the tempo, to transitioning between time signatures, and freely playing with the timebase by moving breakpoints around. 35 timing presets are onboard to show off the possibilities of the six modes, and the Amount slider determines temporal change. Humanising and randomising are on tap in the form of the Velocity and Probability Sequencers, which include their own presets, and can export patterns as MIDI clips for use as groove templates in Live. Costs £29.

ableton.com

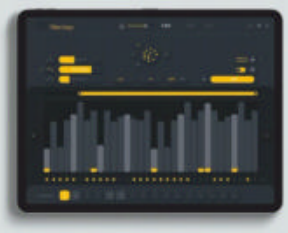
App watch

We report on the latest developments in phone and tablet music making

Sub-bass desires

Audiokit's Bass 808 is a different proposition to your standard 808 drum machine emulation. Rather than being a slavish reboot, it's a synth that's designed specifically for creating sub-bass and kicks. It runs standalone and as an AUv3 and takes up just 20MB on your iPad.

What's more, unusually, is that it's a limited edition app: you'll only be able to buy it for eight weeks, so act fast if this sounds like your cup of low-end liquor. Bass 808 costs £2.99.
audiokitpro.com



Filterstep this way

Audiomodern's Filterstep has several things going for it. For a start, this 'creative motion filter' has a clean, concise interface, and it's also easy to use. It has a sequencer that syncs to host (it runs as an AUv3 plugin), and you can make filter settings (type, range, resonance and smoothness) on a per-step basis. You can also choose the Infinity option, which randomises the settings on each sequencer pass. Best of all, Filterstep is free, so we'd call this one a no-brainer.
audiomodern.com

Apple delights

Finally, there's a new iPad Pro, and Apple reckon it's a good'un. Designed as a laptop replacement, at a price that reflects that, this comes in 11-and 12.9-inch sizes and contains the new eight-core A12Z Bionic chip for more power than ever. iPadOS 13.4 adds trackpad support, meanwhile, and there's a new iPad Pro Magic Keyboard that includes a scissor mechanism and – you guessed it – a trackpad. From £769 for the 11-inch iPad Pro, and £969 for the 12.9-inch model; Magic Keyboard from £299.
apple.com

Get with the programmers

United Plugins' Jakub Tureček extols the power of collaboration in the development world

United Plugins
Jakub Tureček

cm Tell us how United Plugins came to be.
JT "We – SounDevice Studio, FireSonic and JMG Sound – worked on several projects together over the years, and the Internet knows no boundaries, so online collaborations led to the current state of United Plugins, where part of the team is in the Czech Republic and JMG Sound is in England. Prague's music production scene is basically a village, so we were all kind of connected anyway."

cm How helpful has having the involvement of MeldaProduction been?
JT "Well, MeldaProduction is the catalyst. United Plugins uses some of their programming capacity and their licensing system, and a lot of their experience, too. Building such things from scratch could have been hard, causing all our initial enthusiasm to fade away before anything else could even start happening. Thanks to Melda, we could concentrate on sound rather than building a system from scratch. It's been a great booster."

cm How do the three developer companies complement each other?
JT "We are people with different tastes, musical needs and attitudes. We feel that those dissimilarities help us to come up with different ideas and make our portfolio as colourful as possible."

cm Your plugins are obviously aiming to strike a balance between ease-of-use and 'professional' processing quality. How do you find that balance, and what challenges does it present?
JT "This is really very individual and personal. We don't create plugins just to create plugins – we aim to create stuff that we would use in our workflows. For example, Jason, of JMG Sound – the author of Hyperspace (and Hyperspace CM) – is a sound designer, so you might expect very complex tools with a chance to tweak every little detail from him. On the other hand, Boris Carloff, of SounDevice Digital, has the philosophy that: 'If I don't get great sound out of it in a few minutes, I'm using another plugin'. No time Toulouse, as the French would say."

> "Consistency is not very inspiring, is it? Expect the unexpected"

cm How much crossover is there between the three developers in terms of helping each other out with projects?
JT "A lot. We're like collaborating bands. We're both consultants and opponents for each other. If you can't convince friends your plugin is good, how do you convince a real audience? We throw ideas for products at each other: 'I've got this song idea, but it suits your band better...'"

cm How do the three developers collaborate in terms of keeping a consistent brand identity throughout all United Plugin releases?
JT "United Plugins should be an inconsistent palette of various tools. Each team uses different graphic designers. Each has a different approach and ideas. Consistency is not very inspiring, is it? Expect the unexpected."

cm What's next for United Plugins??
JT "A new brand will debut with its first plugin soon. It has an innovative attitude to both sound and GUI, but we can't say more at the moment."

unitedplugins.com

Brainworx buy PPG

In a wholly unexpected music technology industry development, top-tier plugin developers Brainworx have acquired Wolfgang Palm's iconic and enduring PPG brand. With Palm retiring imminently (quite possibly by the time you read this), Brainworx will be updating the current line of PPG software and, we assume, adding to it with future releases, although it's not clear what, if any, advisory input the great man will have into that. "I think that this collaboration will result in a much wider audience than before," he commented.

brainworx.audio

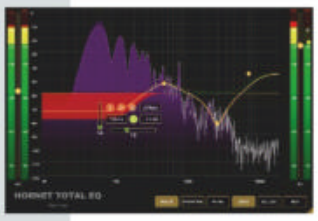
Mercuriall Audio Euphoria

Over a year in development, we're told, Mercuriall's latest plugin effect recreates the acclaimed Bogner Ecstasy 101B 3-channel tube guitar amp, including an optional Cameron factory mod, via the magic of the developers' Neural Hybrid Engine 1.5 modelling tech. Impulse response-based cabinet simulation (including models by Bogner, Marshall and Mesa/Boogie) is also built in, complete with two adjustable microphone positions, as are a variety of stompbox effects and a tuner.

Euphoria is out now for Mac and PC, priced at $100.

mercuriall.com

HoRNet Plugins Total EQ



Clearly inspired by FabFilter's ubiquitous Pro-Q, Total EQ is billed as a "precise and versatile equalizer with a handy spectrum analyzer". Central to the functional proposition of it is that the controls for each of its up-to-12 EQ bands appear around their 'nodes' on the response curve when selected, but the plugin also rings – ahem – bells with its 17-strong selection of analogue and digital filter types, and a dynamic EQ option for real-time input-dependent cut or boost.

Total EQ can be yours today, for €30.

hornetplugins.com

Spitfire Audio Ólafur Arnalds Stratus

British sample library giants Spitfire Audio have teamed up once again with BAFTA-bothering composer Ólafur Arnalds (*Broadchurch*, most famously) for the creation of their new Kontakt Player library, which they described as "a vast, dynamic new instrument that will add depth, movement and colour to your music". In a nutshell, Stratus turns single notes into polyphonic piano and synth patterns, with six multi-layered MIDI triggering matrices offering plenty of customisation, and a 15GB sample library serving up the sonics. £249.

URL spitfireaudio.com

Oxford Drum Gate

A Revolution in Gating

- Intelligent detection
- Adaptive, musical decay
- Transparent leveller
- MIDI capture
- Rapid results

www.sonnox.com/drumgate

Sonnox

10 years back

Another wistful missive to our younger computer-music-making selves

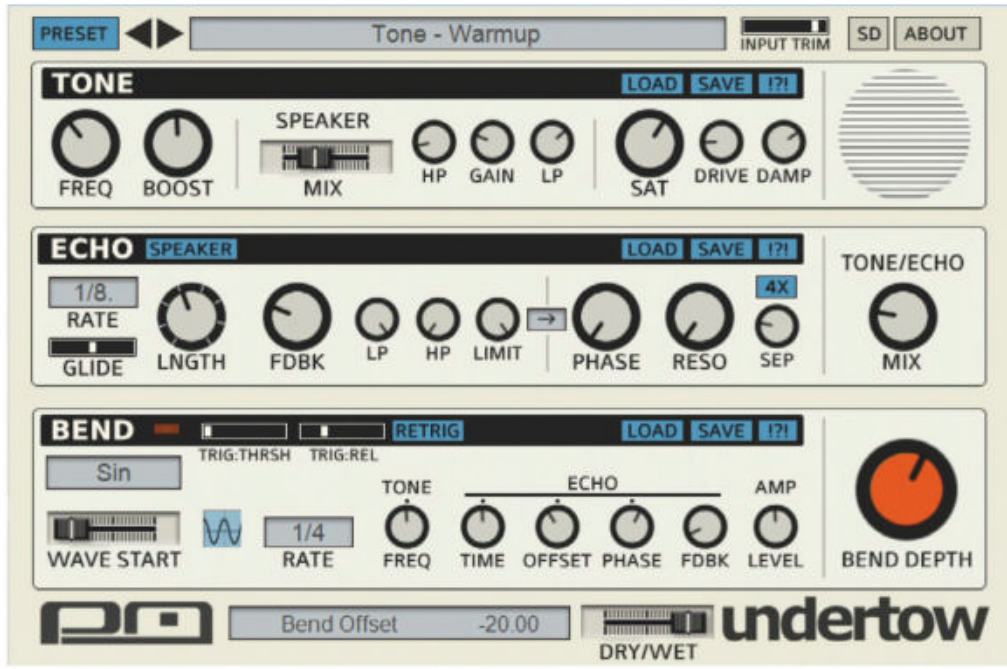
We presented a beginner's guide to mixing in June 2010, with the tutorial simply stating 'if it sounds right, it is right!' We also went all *Doctor Who* on your creative 'asses' by showing you how to play 'tricks with time', though based on the evidence of 2020's hit parade, we didn't convince all that many people to stray too far from the well-trodden 4/4 path, in the long-run.

In the *News* section, we noted that Korg was celebrating the launch of Apple's iPad by releasing an app version of Electribe for it, and Ohm Force announced their internet-powered Ohm Studio collaborative music studio. In these isolated times, we could all do with that right now.

> "We didn't convince many people to stray from the 4/4 path"

Our editor, meanwhile, used his *Welcome* column to announce that **cm** had finally joined Facebook and Twitter (we honestly didn't think they'd catch on), as we fully embraced the brave new utopian world of social networking. He also had to respond to a rather techy email about breakpoints in the *Letters* page; after reading that, we'd certainly reached ours...

In June 2010 we set another bright-eyed class of fledgling producers on the road to pop stardom



Psychic Modulation Undertow

We're fans of Psychic Modulation's small but perfectly formed retro plugins family – chiefly Vectomelt and Echomelt – so the addition of a new member has us fair fluttering with excitement. Undertow is a "beat-bending dub box" built for manipulating drum loops via three processing stages. Tone Booster beefs up the low-end and crossfades with a speaker emulation, then saturates the result; Echo Phaser is a tape delay routed into a modulated phase filter; and Beat Bender is an LFO independently applied to various parameters for rhythmic pitching, phasing, delay modulation and more. Buy it now for $50.

psychicmodulation.com

Ins & outs

IT'S NOT ALL BAD...
Good news is scarce right now, but devs including Moog, Korg, Native Instruments and Arturia have stepped up and offered free stuff for use while stuck at home. Apple also launched a 90-day Logic Pro X demo, so stay in and keep on creating!

SPOTI-BYE
Algoriddim have confirmed that, as of 1 July, you'll no longer be able to play Spotify tracks in their popular djay app (though SoundCloud and Tidal are now supported). In fact, no 3rd-party DJing apps will be available for Spotify in the future.

GO WITH THE FLOW
You may not consider this good news, but Sony Computer Science Labs have created an AI-assisted production platform. Known as Flow Machines, this can operate as a plugin and help you write basslines, chord progressions and melodies in various styles.

APPLE GOES LOOPY
It seems Apple may have accidentally leaked a screenshot of a forthcoming Logic Pro update, which shows a clip-launching workflow similar to the Live Loops feature in GarageBand iOS, on the education page of its website. Whoops.

BEHRIN-DAW
Having shaken up the hardware synth market, Behringer now have their sights on software, confirming that they're working on a free DAW, to come with samples, plugins and support for third-party VSTs. A lot to promise, but we're looking forward to seeing the goods.

CORONA CRISIS
Like most industries, the music-making and performance sectors have been hit hard by the coronavirus crisis, with gigs and events cancelled. Of course, we urge you to support artists and businesses however you can, and stay safe in these crazy times.

AUDIO TENT

JOHN MONKMAN

STUDIO FEED

WATCH & LEARN ALL OF THE PRODUCTION TECHNIQUES INSIDE 2 OF HIS TRACKS

RUCKUS & KETOSIS (BEESEMYER MUSIC)

JOIN THE CLASS

WWW.AUDIOTENT.COM

Top collaboration tips

Stuck at home? You're certainly not alone. It's time to get out and meet people – at least virtually – and make some music!

USE REMOTE STORAGE

High-quality stereo audio files can be a hassle to send back and forth over the net due to their large size. If you change one part, you could just resend that bit, but it gets confusing fast, as the recipient loses track of what's going on.

Avoid all this hassle by using a service such as Dropbox to keep projects in sync across multiple machines and users. The default free allowance is usually enough for one project.

BOUNCE WET AND DRY

When you're bouncing a channel with huge amounts of reverb or delay, it's usually worth bouncing a version without those heavy effects as well. These kinds of things can, of course, be very subjective indeed. And it's also easy for somebody to get frustrated with a part – and even start to dislike it – if they can't adjust it or even hear a dry version.

WATCH THE LEVELS

When bouncing channels, be careful not to overdrive either the master output or the input levels into any plugins, as this can result in digital clipping and a different response from the plugins respectively.

GIVE IT A CHANCE

If somebody suggests a change to something you're used to hearing, it can be extremely difficult to view the new version as anything but inferior.

To banish this problem, try living with the change they've suggested for a day or so, working on the track with it in. We're not saying that they'll always be right, but sometimes you need to let things bed in before you can be objective about them.

SPECIFY A FORMAT

Always check what format somebody wants their files in before you send them. Some DAWs offer 32-bit export, but others don't allow 32-bit files to be imported, for example. A problem as easily avoided as this can utterly derail a planned studio session.

CUT OUT SILENCES

If you're working with lots of bounced tracks, you might find your hard drive buckling under the pressure. First, consider upgrading to much faster solid-state storage. If this is a no-go, try slicing any significant gaps out of each audio file in the arrangement. That way your hard drive won't be accessing every bounce simultaneously for the whole track.

SPECIFY SOFTWARE VERSIONS

When collaborating with somebody using

the same DAW, make sure that you're working with the same version. Some DAWs aren't backward-compatible, so this could mean that the person running the older version won't be able to open files saved in the newer one. It's easy to overlook this issue, so make sure you ask ahead of time.

SAVE OUT SAMPLES

Watch out for plugins that reference sample banks, as even if you tell your sequencer to save a project and all of its assets, they might not be included. To get round this, save your sampled patch out and share this with your partner, too.

CHECK FOR LICENCES

A lot of soundbanks are copy-protected these days, including some sample libraries. Make sure you check that your partners have the required licences – if not, it's time to bounce again.

DON'T KEEP QUIET

Working with lots of people on a project can be really interesting, as it allows for a potentially much larger range of influences and ideas. But there is also a danger that you can lose your way. If you feel like the project has lost direction, speak up and let the group know.

Make sure that you do this in a friendly way, with concrete examples to back your suggestions up – having a SoundCloud reference of how the project sounded at an earlier point will help!

BE FLEXIBLE

Don't be afraid to work in different DAWs and just swap bounced parts. Some people work best using multiple platforms (moving, say, from Live to Logic), so let each producer play to their (and their DAW's) strengths. If you hear something that you'd like to edit, make a note and let your partner know.

BREAK IT UP

If you and your partner always disagree, you never finish any projects, or it just feels like things aren't working how they should, then communication is everything; try and talk it through. But collaboration should be fun and productive. If this isn't happening, there are plenty more collaborators out there.

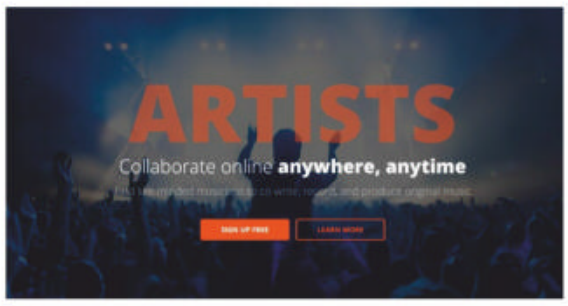
Collaboration platforms and websites

There's a growing number of software platforms created for collaboration, plus sites specifically tailored for you to meet musicians, which also provide everything from samples to the actual DAW you use. Here's just a selection...

Avid Link
avid.com
This is Avid's platform designed for 'creatives' that use all of their suite including Pro Tools.

Blend
blend.io
Collaboration site and app that allows users of most DAWs to make music in sync, and is also partnered with ROLI.

Kompoz
kompoz.com
Website to find other musicians and discuss and make music in real time with anyone, anywhere.



Procollabs: great for session players and pros

Looplabs
looplabs.com
Free cloud-based collaboration site and DAW that has partnered with Beatport.

Procollabs
procollabs.com
A more pro site to find the missing part of your music-making jigsaw – producer, session musician, vocalist etc.

Soundation
soundation.com
Record, mix and share you music, as well as use instruments and other tools.

Soundtrap
soundtrap.com
'Your everywhere studio' – a site that offers samples, instruments and loads of people to make music with.

Splice
splice.com
Meet other musicians, use the Splice Studio app, remix, collaborate, download software and samples.

Steinberg VST Connect Pro
steinberg.net
Steinberg describe this long-running platform as "a complete remote recording solution that allows you to collaborate with any musician who has an Internet connection."

Vampr
Vampr.me
Social network to collaborate with like-minded musicians. Claims nearly 5 million connections in 200 countries.

COMPUTER music

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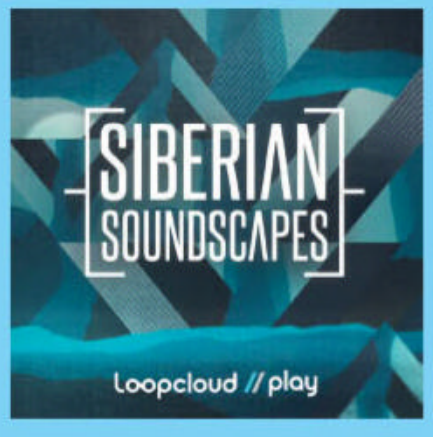

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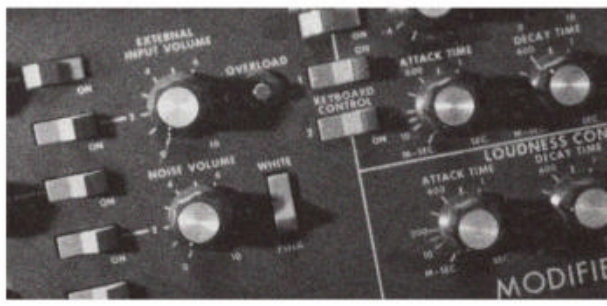
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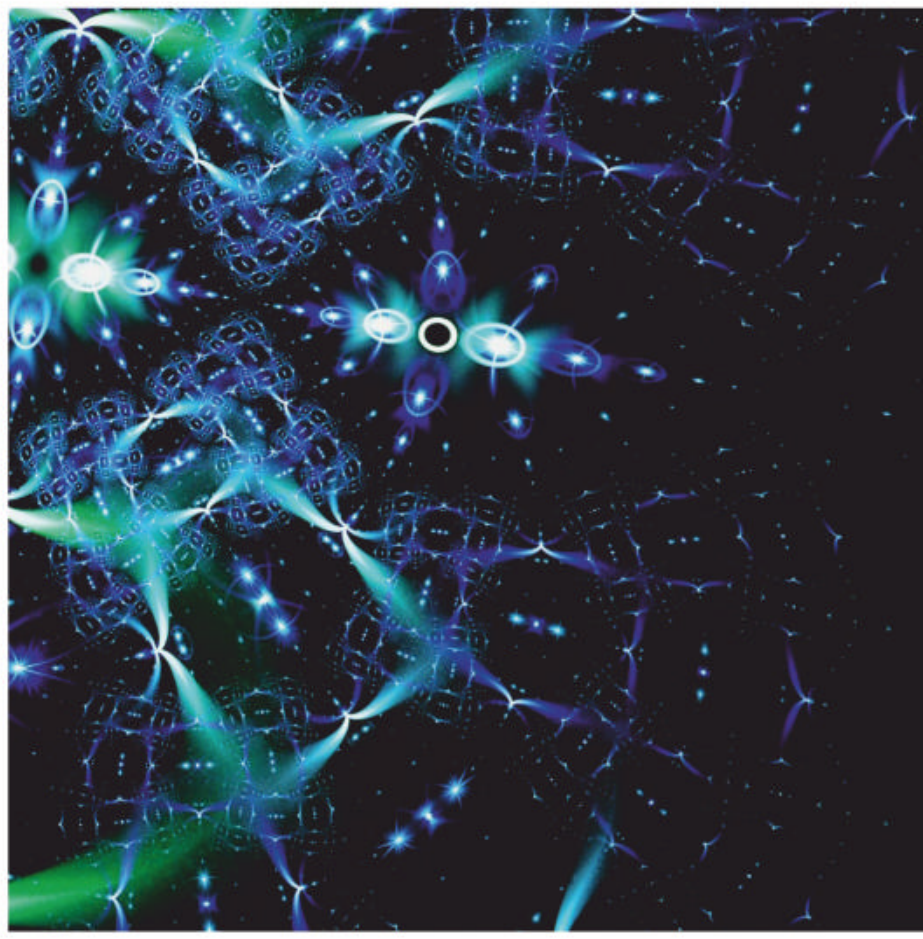

VOL. 1
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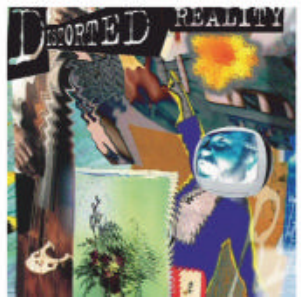
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WELCOME TO THE cm 90S SPECIAL!

It's the *Computer Music* 90s special, celebrating the decade that launched a thousand genres! Read on for a glimpse back in time to the dawn of dance...

> **The 90s was one of the most influential decades for both music and technology. Dance music went from its exciting roots at the end of the 80s to a full-on global phenomenon, with house, acid, jungle, drum & bass, techno, hip-hop and so many more genres exploding across the globe, spawning countless sub genres along the way.**

You could – and we obviously will – argue that much of this was down to the increasing availability and decreasing cost of the technology required to put a tune together. The specs of hardware and software increased exponentially as the prices decreased (a lot of the time anyway), and ground-breaking releases throughout the decade from all sorts of developers and manufacturers ensured that the growing number of producers had plenty of tools to experiment with. Which is why we've decided to dedicate a big chunk of this issue to the decade that delivered.

Over the next 32 pages we have tutorials on how to produce the music that defined much of the 90s, plus a modern twist on 90s music Calvin Harris style! There are interviews with Black Box who pretty much defined the decade of dance with *Ride On Time*; then there are roundups of some of the classic sample collections and tools to get the best 90s sounds. Time to go old skool...

FEATURES

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90s RAVE

> The 1990s was an exciting time for the UK musically, with many scenes and genres being hugely popular and influential, both on a musical level and culturally too.

One such genre was rave music, with huge parties springing up across the UK during the early 1990s featuring thousands of people dancing until dawn to futuristic electronic music comprised of sampled breaks and stabs, alongside uplifting vocals and crazy arrangements. For a few years, rave music drew a massive following and influenced popular culture, with the clothes and logos sported by rave-goers becoming fashionable even outside of its original confines.

As rave music could be made using relatively basic computer and sampling equipment for the time, there were few barriers to entry, with bedroom producers across the UK becoming stars of the scene. The original tracks from this era from labels such as XL Recordings, Suburban Base and Reinforced Records are now considered classics in their own right, with this particular style of music later splintering off to inspire the creation of well respected UK dance genres such as jungle/drum&bass, hardcore and new school breakbeat.

As there's currently a massive 90s revival happening, we thought it'd be a great idea to break down how to make your own 90s-style banger. Over the next six pages, we'll show you how to use your DAW, a selection of **cm** samples (which you can find under this issue at filesilo.co.uk) and a combination of commercial and **cm** plugins to chop and replay breaks, create rave stabs and much, much more.

>Step by step

1. Beat creation

1 > Let's get the ball rolling by layering a couple of breakbeats up using TAL's excellent Sampler. By using this instead of what our DAW has under the hood, we can instantly print a retro 1990s sound onto our breaks. Load TAL Sampler onto a new MIDI track, then create a one-bar MIDI region with a C3 note in it to trigger the sample. Now, let's drop a break in.

2 > Set BPM to 140, then open TAL's Layer A tab. Import DF_BeatD_120-04.wav from the Beat Creation folder at filesilo.co.uk, then move the Loop End marker to the end of the break. Change the High/Low key to C3, so only one note triggers the sample. Timestretch the break to the track's tempo by setting Stretch mode to Cyclic, with Stretch at 16%.

3 > We'll add the same break to Layer B. Turn on the layer, and load in the break with the Root, High and Low keys set to D3. Set the Stretch mode to Cyclic again at 16% Stretch, then move the Sample start to the first snare. We can then play notes C3 and D3 interchangeably, allowing us to start the break either at the kick or snare for greater variety.

4 > We can use TAL Sampler's Resampler to print the classic Akai S1000 sound to our break. Set mode to S 1000, then reduce bit depth to 12-bit with sample rate at around 22kHz. Dialling in some Saturation alongside this will give our break a full, fat sound. Reduce the channel volume to -6dB to keep the levels in check. Now, let's throw down another break.

5 > Add another TAL Sampler instance to a new MIDI track, then copy the MIDI region from our first track to trigger the sample. Open TAL Sampler, and import DF_BeatB_120-01.wav from filesilo.co.uk into Layer A (a bass-heavy break that layers brilliantly with our first one). Move the Loop End to the sample's end, and set Root, High and Low keys to C3.

6 > Timestretch the second break by setting the Stretch mode to Cyclic, with Stretch amount at 16%. Now, you'll hear the two breaks layer together. Turn on Layer B and import the second break again, with the Root, High and Low keys set to D3. Set the Loop Start to the first snare. Apply the same timestretch settings as Layer A, so the break plays in time.

RECOMMENDED LISTENING

RACHEL WALLACE
TELL ME WHY
One of many 90s classics from UK label Suburban Base, *Tell Me Why* serves lashings of chopped up breaks with uplifting piano chops and great vocals.

bit.ly/rw_tmw

AWESOME 3
DON'T GO
Built on a sample of Bobby Byrd's *Hot Pants* breakbeat, the piano vibe evokes memories of big raves, white gloves and Kenwood puffa jackets.

bit.ly/awsm3_dg

LIQUID
SWEET HARMONY
With its instantly recognisable piano riff (from CeCe Rogers' classic *Someday*), *Sweet Harmony* adds layered breakbeats, bass and strings to devastating effect.

bit.ly/lqd_swthrmny

SL2
ON A RAGGA TIP
Spending three weeks at no.2 in the UK charts, SL2's Jah Screechy-sampling anthem was one of the few crossover tracks that brought rave culture to a wider audience.

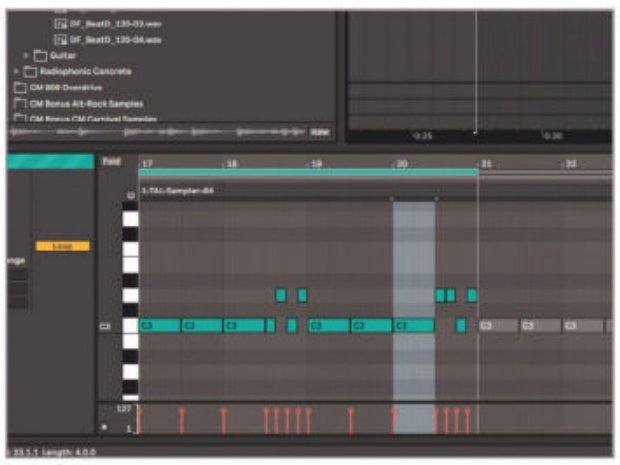
bit.ly/sl2_oart

PRO TIPS

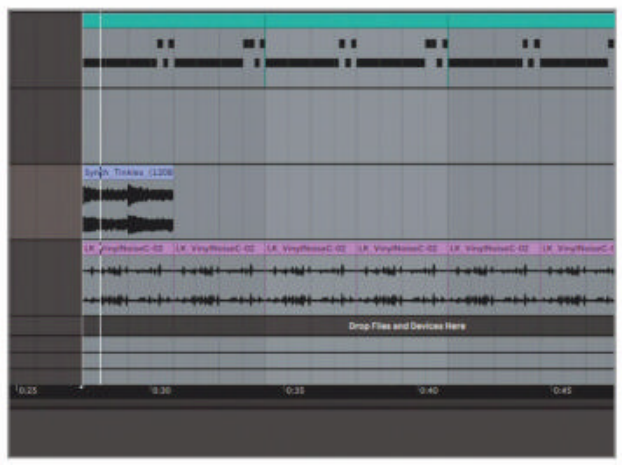
RETRO EMULATION
If you're triggering stabs, breaks or suchlike from a modern sampler then the timing will normally be rock solid. However, a lot of basic 1990s studio gear would sometimes drift out of time by a millisecond or so, thanks to ancient computers with less than perfect MIDI clocks. Emulate this in your DAW by automating the channel's time delay by 1-2ms every so often, so that the samples still sound in time, but not perfect.

CHIPMUNK VOCALS
The pitched-up vocals used in lots of classic rave tracks sounded like that as they were speeded up in a sampler, rather than timestretched to fit to retain the original pitch tuning. If you're recording vocals, try pitching the instrumental down in a sampler by 5 or 7 semitones before recording over it. Then, pitch up the finished vocal recordings by a corresponding amount to achieve the desired effect, while still keeping the timing tight.

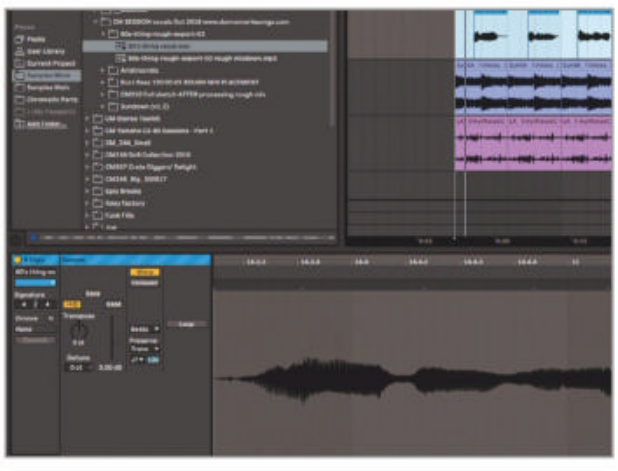
7 > Turn the sampler channel down to -6dB, so that both our breaks balance together. We'll colour our second break differently to the first, selecting the Emu II Resampler, with Sample Rate at around 22kHz, Hiss at 0.6 and Jitter at 0.8. This gives our break a hissy, crunchy sound reminiscent of classic 90s rave records. Now, let's map out a longer drum track.



8 > Extend the MIDI region on the first break channel to four bars. Now, draw in notes to create your own drum pattern using the variations of the break we've set up. After creating your pattern, copy the MIDI onto the other sampler track, so both breaks are triggered in unison. Duplicate the MIDI regions over 16 bars, so we can add some other sounds into the mix.

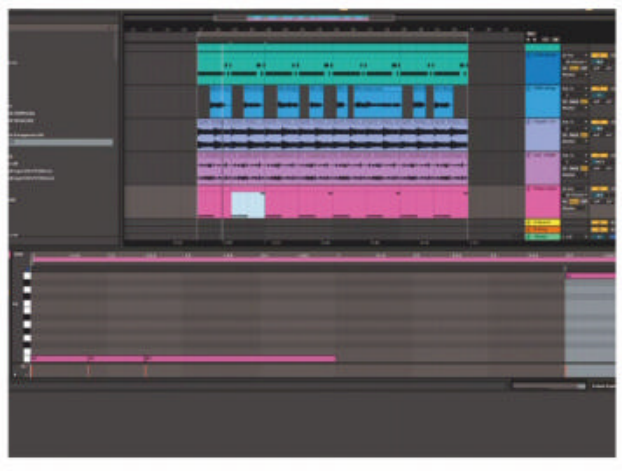


9 > Vinyl noise from the Layering Kit pack adds atmosphere, like on a vinyl rip. Add LK_VinylNoiseC-02.wav to a new audio channel. Duplicate it across the arrangement, then turn the channel down to -20dB to stop the noise dominating. Next, add a musical sample from filesilo.co.uk; put Synth_Tinkles_(120bpm).wav on a new audio track.



10 > Set the synth sample's Warp mode to Complex Pro, to reduce artefacts. Turn the synth channel down to -9dB. Next, add a female vocal from filesilo.co.uk. Import Vocal.wav to a new audio track, then delete everything but the first 16 bars of audio. Chop the vocal into individual segments, so each phrase is a separate piece of audio.

11 > The vocal gradually drifts out of time as the 16-bar phrase opens up, so go through and quantise every part until it flows nicely with the track. Next, we'll add an 808 bass hit to give our section some sub low power. Add a new MIDI track, then call up Dope VST's Bass Engine CM. We'll select the 2010s 808 Clinical preset, as it's the most authentic on offer.



12 > Add a new two-bar MIDI clip to the channel, and draw in a few E0 notes to create a bass stab to layer underneath the rest of our parts. Copy the clip across once, then add an E1 note to the end of the second clip to create a variation. Duplicate the two clips across the arrangement, then turn down the channel to -4dB to keep the levels balanced.

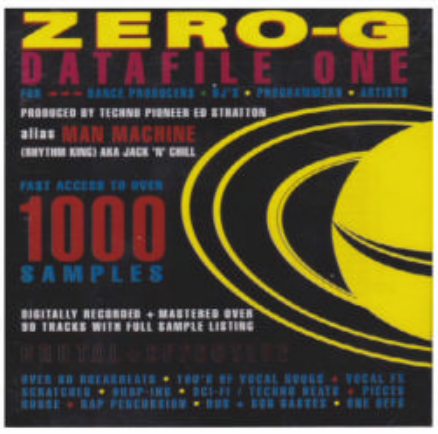
> Step by step 2. Adding a rave bass

1 > Let's try and make a rumbling rave bass using Native Instruments' classic synth Massive. Add Massive to a new MIDI track, with the file Bass.mid (from filesilo.co.uk) loaded to trigger the synth. Select New Sound from the File menu to reset the synth's parameters.

2 > Set all three oscillators to Sin/Square, with the Wavetable Position dials set to the left. Turn on Oscillator 2, then tune it down by 40 cents with Oscillator 1 tuned up by the same amount. You'll hear the two oscillators phasing against each other, creating a cool modulated bass.

3 > Turn on Oscillator 3, then tune it up by 12 semitones (one octave). This gives the bass an overtone that's reminiscent of the beefy basses used in many a rave classic. Reduce Oscillator 3's Amp level to 12 o'clock to reduce the overtone's volume, blending it into the mix nicely.

4 > To finish, we'll use Inphonik's RX950 to give our bass some classic Akai sampler vibes. Load the plugin, and set the Input Gain to 10dB with the Output Gain at -10dB. This'll drive the bass, adding crunch and character in spades. Set the Filter to 30 to tame the distortion.



Sample sauce

It pays to have the right ingredients to hand when creating a 90s flavoured track. For example, those hi-fi sounding loops you've just bagged off Splice will probably be too shiny for a 90s rave homage, so looking at the sample sources used by producers at that time is a great way around this.

As well as the obligatory signature sounds such as sampled funk breaks, techno stabs and classic Reece/808 basses, a lot of producers at that time took their sounds from the many sample CDs available at the time, including offerings from Akai that were included with their samplers as well as classic packs such as Zero G's Datafile and our sister mag *Future Music*'s early sample discs.

The best thing is that you can often pick these up for a song from eBay or second hand shops. Many companies have reissued their classic packs online to buy, saving you the tedium of ripping off CDs. See p50 for more on these classic sample collections.

> Step by step 3. Creating a rave piano stab

1 > Let's make a piano stab that we can turn into a riff. Start by loading up your DAW's stock piano. We'll add a new MIDI clip, and draw in one-beat notes on E3, G3 and B3 to create an E minor chord, which is in key with the track.

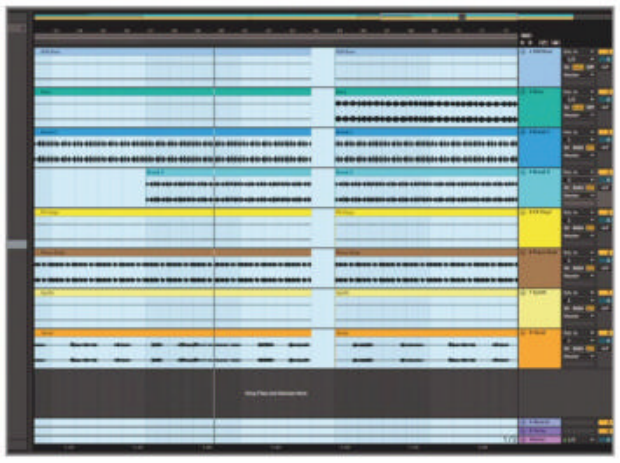
2 > Export the chord to audio, then reimport it into any sampler of your choosing. After muting the piano, import Piano Stab.mid onto the channel to play the chord stab back in a riff. You'll hear the chord take on a slightly dissonant tone as the riff's notes change.

3 > To finish, we'll add some characterful distortion to the sound using SoundToys' Decapitator. Load the plugin, and set the Style to E (based on a Neve preamp). Push the Drive amount to 7, then reduce the Wet/Dry mix to around 50% to blend the distortion into the clean sound.

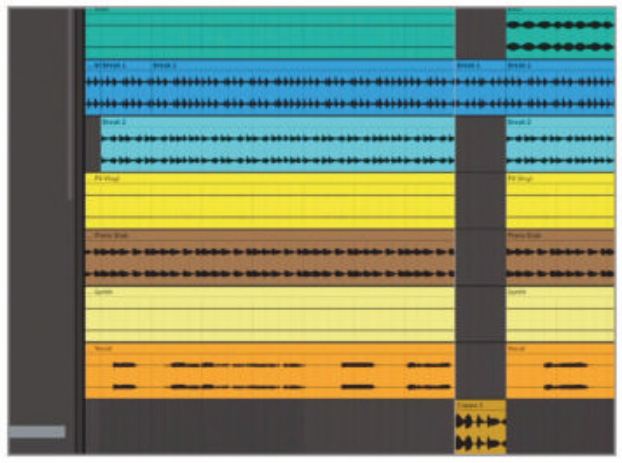
> Step by step

4. Starting your arrangement

1 > After loading in the tutorial files to a 140bpm project, you'll hear that we've got three sections of the track to work with: the intro, piano breakdown and drop. We'll kick off by extending the intro's length to 32 bars, muting Break 2 for the first 16 to add suspense.

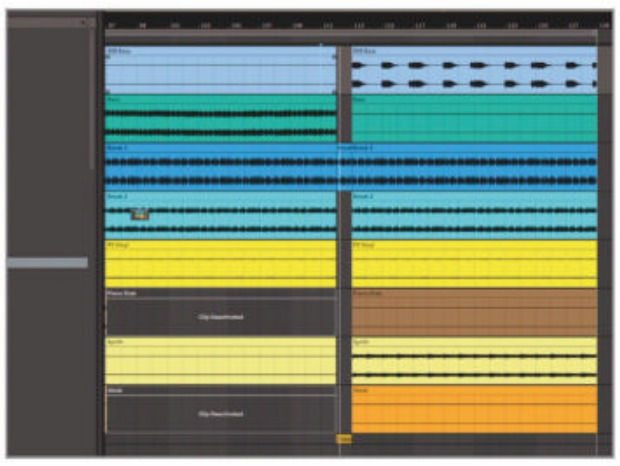


2 > We'll mute the 808 Bass for the first eight bars. Now, let's double the length of the piano breakdown to 32 bars. Copy Break 1 and 2 over to the second 16-bar section, then mute Break 2 for the first eight. And mute the last bar of the breakdown entirely.



3 > A vocal snip from Insideinfo's CM194 sample pack adds some impact to the drop. Load in Coppa3.wav, and delete the second bar. Turn the channel down to -6dB to balance the levels. Copy a bar of Break 1 into the gap, then reverse it to make a fill.

4 > Duplicate the drop section twice, so it's 48 bars in length. Mute the vocal and piano from the last 16 bars. Now, let's pitch-shift the female vocal using SoundToys LittleAlterBoy. Load the plugin, link the Pitch and Formant then set them to 7, giving an instant chipmunk vocal.



5 > Delete the last bar of the drop, then copy over the reverse break and MC vocal fill from the breakdown in order to replace it. This'll break things up, leading on to the next section of the track. Take the second 16 bars of the intro, and place it in after the drop.

6 > To complete our arrangement, grab the second 16 bars of the breakdown as well as the whole drop, then copy it over to the end of the arrangement. Mute the drums from the first eight bars of the second piano break to make this section different from the first one.

Stab in the dark

Human Resource - *Dominator*

A signature sound of 90s music is the stabs used to create piano riffs or crazy mentasm loops. Whilst these sounds were often sampled from sources like classic funk tracks and house or techno records, you can create interesting stabs from scratch using appropriate synths alongside the tools in your DAW.

For just one example, you could take the hoover used in Human Resource *Dominator*. As this was originally created using a Roland Juno, you can reach for a Juno emulation such as Audiorealism's ReDominator to recreate the sound, with the added benefit that you can manipulate the sound to your own liking (check cm262's *Rave Design* feature for the lowdown).

Another way to make a cool rave stab is to sample a chord, before replaying it into a riff via any sampler. As the chord is being pitched up and down by frequency rather than by using musically correct chords, the resulting sound has the slightly dissonant feel that we've come to expect from a classic rave riff.

Make a tidy hoover with AudioRealism's ReDominator

POWER TIP

> A bridge too far?

Part of the charm of old school rave records was the randomness of the arrangements, with three minute piano sections often giving way to crazy, mentasm-filled bridges with little or no warning. As modern music generally isn't arranged in this way, it can be lots of fun to take a less considered approach to arranging, with greater focus on the individual sections rather than making the entire track flow slickly from one part to another. To see what we mean, try checking a few old school rave tracks yourself!

Mixing 90s style

A key part of making your mix authentically 1990s is understanding how mixes were done back then. As clinical, digital mixing in a DAW was many years off at this point, tracks were instead mixed on a console, with a randomness that we can recreate in the digital domain.

For example, volume faders would have been set using your ears only, rather than by typing exacting gain levels in, so to mimic this effect in the box, get your mix levels to where you'd like them then slightly adjust them manually so they're not perfect. This'll reduce the overly precise sound associated with a DAW, giving a more human feel.

Another way you can add this kind of randomness is to not set your pan pots precisely. If you've got a sound panned 15 degrees to the left, and another that's exactly opposite, try adjusting one of them so that it's panned two degrees or so out from the other channel.

> Step by step 5. Drum mixing

1 > Let's work on our drum mix. Start by grouping Break 1 and 2, so we can process them as one. Add Sonimus SatsonCM to the group, then place a utility plugin after it, set to -9dB gain. Now, increase SatsonCM's Gain to 3 o'clock, adding some great-sounding analogue-style clipping.

2 > Reverb will add lushness to our drum track. Call up Liquidsonics' Reverberate CM onto a new return track, and select the Simple Drum preset. Set up a -9dB send from the drums group to the return channel. Next, we'll roll the low end from the reverb return to add clarity.

3 > Load DDMF's IIEQPro CM onto the return, and set Band 1 to a HPF12 filter. Setting the Frequency to 200Hz and Q to 0.7 rolls off the boomy lows, reducing frequency clashing. Next, we'll compress our drums group using Ignite VST's Vice One CM; load it onto the group.

4 > Set the Ratio to 2:1, then increase the Attack to around 9 o'clock, so that a little of the drum's transient snap is let through before the compressor begins to act. Pushing the Makeup Gain to around 9 o'clock balances the volume level of the wet and dry signals.

> Step by step 6. 808 distortion using RP-Distort CM

1 > We can add some period-correct, crunchy distortion to our 808 bass using Rob Papen's RP-Distort CM. Load the plugin onto the 808 Bass channel, then select the 909 Mackie Ch Dist RF preset. This is an emulation of the classic Mackie mixer that was used by many producers of the time.

2 > The effect RP-Distort CM has on the bass sounds pretty great, but it's a bit on the aggressive side right now. Firstly, turn the channel down to -12dB in order to stop the bass dominating the mix. To tame the distortion, we'll set the Filter's Low Pass dial to around 100Hz, rolling off the upper harmonics.

3 > To finish, we'll make an EQ notch in the 808 so the kick pops out. Call up DDMF's LP10 CM, and set Band 1 to Peak. Dialling in a -3dB cut at 100Hz with a Q of 3 makes room for the kick, without taking power away from the bass.

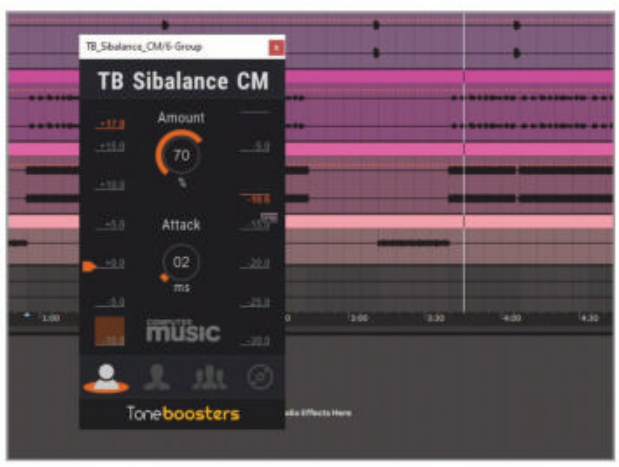
>Step by step 7. Completing your final mixdown

1 > Let's start the mixdown by adding your DAW's limiter to the master output, so we can drive the mix into it later on. Now, we'll work on the piano. Start by reducing its volume to -1dB, so it sits more comfortably with the rest of the mix.

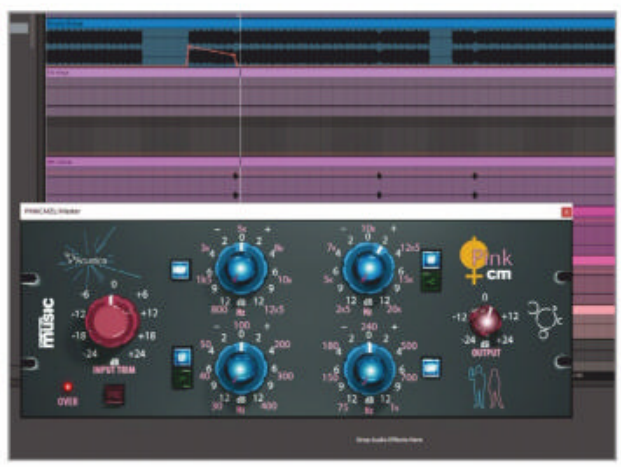
2 > Add PSP's cmDelay to a new return track, then turn off the dry signal, leaving just the wet effect. Set up a -6dB send to the delay return from the piano. We'll sync the Delay Time, then set it to ¼ notes. Increase the High Pass Filter's frequency to 300Hz.

3 > The delay has added much needed flavour to the piano. We'll move on to a little automation now. Add Vengeance's VPS Philta CM to the grouped drums, then automate the High Pass filter so it gradually fades in the low frequencies of the drums during the breakdown, adding extra detail.

4 > Let's add some vocal processing. Add Acon Digital's CM Verb to a new return track, and choose the Medium Chamber preset. Disable the Dry Level, then set up a -6dB send from both vocal tracks to the reverb. Turn the female vocal up by 2dB, so it sits upfront in the mix.



5 > We can smooth the sibilant frequencies in both our female and male vocals using ToneBoosters' SibilanceCM. Group the vocals together, then load the plugin onto the group. Set the Amount to 70% and Attack to 0.2ms so the sibilance gets dealt with, without removing too much high frequency detail.



6 > Add Acustica Audio's PinkCM to the master output before the limiter. Dialling in a boost at 10kHz adds high frequency air, while pushing the Output gain up to around 1 o'clock overloads the master limiter, giving a sound similar to overloading the analogue to digital converters on a DAT machine.

Plugins like TAL-DAC rough up your signal like in days of yore, with tweakable bit-depth/sample rate

90s signal path

After that bona fide 90s tone for your mix? It's worth considering the signal path that producers would have had in their studio. For rave music, this consisted of a hardware sampler, routed into a mixing desk with the final mix recorded to a DAT tape.

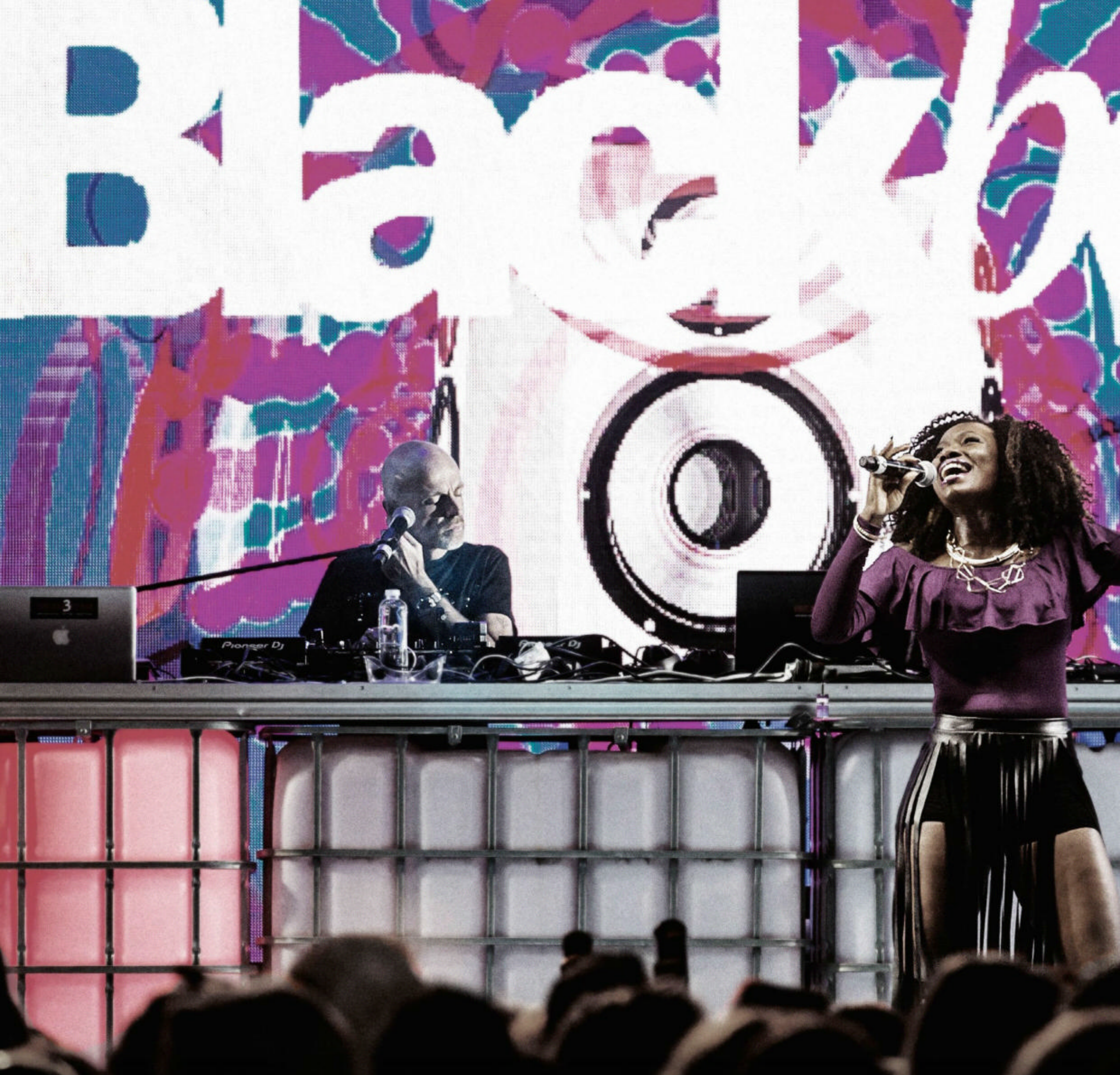
As many samplers were either 12-bit or 16-bit back then, an easy way of kicking off is with a plugin like TAL-DAC to reduce the bit depth and sample rate of your sounds, taking away the high def sheen that many samples have out of the box. Then, apply some analogue saturation of some kind (our own Sonimus SatsonCM is perfect for this) to embellish the effect.

Lastly, get the sound of an overloaded DAT machine by using a clipping plugin such as SIR StandardCLIP on your master to indiscriminately reduce the peak gain before exporting to a 16-bit WAV, similar to clipping the analogue to digital converters on an old DAT recorder.

POWER TIP

> Look no further...

If you're looking to get that classic 90s sound when making music, then it's worth exploring what modes your existing plugins, samplers and synths have to offer. For example, Native Instruments' Kontakt and Battery samplers both offer MPC-60 emulation modes, giving their internal algorithms the sound and feel of a classic Akai drum machine. Similarly, plugins such as Valhalla's Vintage Verb let you set the reverb type by decade, allowing you to use the kind of 70s or 80s reverb that would have been in commonplace use in studios during the 1990s.



KEEP ON RIDING

photo © www.robertocastano.com

Black Box exploded into the charts as the 80s drew to a close and defined much of the commercial sound of dance during the 90s. Here we catch up with DJ Daniele Davoli and keyboardist and engineer Mirko Limoni to talk tech and how they made one of the greatest dance hits of the last three decades

> The end of the 80s sparked a watershed time for commercial dance music in the UK, with the joyously groovy likes of Inner City, Lisa Stansfield and Rebel MC charting high, and providing pop fans with welcome relief from the nightmarish dominance of Stock, Aitken and Waterman, then at the height of their powers. At the tip of the spear, however, were Italian production trio Groove Groove Melody, whose Italo house stormer *Ride On Time*, released under the name Black Box, held the Number 1 spot for six weeks and came in as the biggest-selling single of the year.

GGM – comprising DJ Daniele Davoli, keyboardist and engineer Mirko Limoni, and classically-trained clarinetist Valerio Semplici – had actually made the Top 10 in August of the same year as Starlight, with *Numero Uno*, but *Ride On Time* proved a truly spectacular crossover triumph. Even the most po-faced of dance purists couldn't find fault in its frantic piano and synth string riff, unforgettable bassline and gutsy sampled vocal, lifted – controversially and, ultimately, to the band's financial cost – from Loleatta Holloway's *Love Sensation*, and mimed in the video and on stage by French model Katrin Quinol, who served as the 'face' of the outfit until 1993.

The worldwide success of *Ride On Time* led on to an equally well-received album, 1990's *Dreamland*, from which a whole barrage of further global hits was launched, including *Everybody Everybody*, *I Don't Know Anybody Else* and a cover version of Earth, Wind and Fire's *Fantasy*. Since that time, Black Box have never really stopped doing their pop-dance thing: the second album, *Positive Vibration*, dropped in 1995, surrounded by a handful of singles, and Daniele continues to perform live DJ sets around the world, these days accompanied by Bristol-based vocal phenomenon Celestine Walcott-Gordon, as well as a live percussionist and guitarist.

Black Box's 30th anniversary was celebrated with the release of *Superbest* on their own Groove Groove Melody label – a compilation of remixes that puts a new twist on the Black Box sound across the decades, from *Ride On Time* to 2018's cowbell-hammering epic, *Everyone Will Follow*. It also struck us as the perfect time to grill Daniele and Mirko on the Black Box story, and their particular angle on music and production. We began by asking how the band came to be in the first place.

Daniele Davoli: "It wasn't a clear plan – *Ride On Time* was one of the many records we were making at the time. We were releasing records one after the other, different ideas, different names – we were just trying our luck. Our first record together was *House Machine* (under the name DJ Lelewel which I went by at the time); and the second one was Starlight's *Numero Uno*, which was top ten in the UK as well. That was the record that opened the door to Black Box and *Ride On Time*, really. It was the first record that was snapped up by Beggar's Banquet, who licensed it for the UK.

"At the same time, we also made *Airport* (as Wood Allen), in 1989, which was another record that was well received by DJs and the public alike in the UK. So *Ride On Time* was just another one of those records, and we didn't have big plans – we just wanted to sell 1500 copies, 2000, hopefully, so we could buy a piece of gear for the studio and carry on. We did have a long-term plan, and we knew it wasn't going to be easy and that it would take some time, but within six months of starting, we already had a number one record in the charts!"

cm: *Ride On Time* is a truly seminal dance/pop crossover record. What are your memories of producing it, and did it come together easily?
DD: "*Ride On Time* used sampled vocals, which I used to do already in my DJ sets, on top of other records. I used to play the sampler, just to show the public that I had a bit of an edge over other DJs. I could play the keyboards, although it wasn't really playing the keyboards as a musician would do – I was playing samples and loops. But the public didn't know what a sampler was, so they saw me pushing buttons on the keyboard and they thought I was actually playing it.

> "We thought it would take some time, but within six months, we already had a number one record"

Kit list

HARDWARE

Mackie 8-bus mixer (MM: "For summing only")
Tube-Tech MP1A mic preamp
DudeMusic DM1 mic preamp
BSS DPR-402 compressor
Mackie HR824 monitors
Yamaha NS10 Pro monitors
Apogee Rosetta
Digidesign 192 I/O x2
Metric Halo 2882

SOFTWARE

Pro Tools HD 3
Ableton Live
Propellerhead Reason
VSL Vienna Ensemble Pro
UAD plugins by Softube, Brainworx, Manley, Sonnox et al
Native Instruments Kontakt, Reaktor, FM8, Absynth, Massive, Battery
Sonic Charge Microtonic
U-he Diva
GForce Oddity
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Left to right: Mark/Mirko Limoni, Daniele Davoli plus original BB member Valerio Semplici

"Mirko Limoni came on Saturday night, just to have a drink in my club where I was DJing, and looked at what I was doing. On the Monday, when I went back to the studio, he said, 'There was something that you were doing on Saturday night, with this female gospel vocalist who was going crazy, screaming, and it's very impressive. Bring it in and we'll see what we can do with it'.

"I told him that was a sample I was playing over the record, and gave him the floppy disks of the [Akai] S900 I was using, and we loaded it up and started playing with it. We thought, 'Oh, blimey, this is quality, man'. I had an idea for a piano that went with it, and I sang it to him. Obviously, it wasn't properly accurate, so, being the musician that he is, he put the right chords to it and there you go – we then had the piano line and a few vocal parts.

"Virtual synths are so close to the real thing that we usually go for them, not hardware..."

"After that, we already had the 'woah, woah, woah' and 'ride on time' vocals, because they were already doing it in the club. Everything else was 100 samples all over the keyboard, and we didn't know where to put them, in what sequence. So that took us three days. Then it took us another month to put the vocal sequence in a correct order, as we couldn't figure it out. There were a lot of headaches and sleepless nights, but eventually we managed it."

cm: *Ride On Time* was described by the press at the time as the definitive Italo house track. Would you agree with that categorisation?
DD: "It really isn't defining of the Italo house sound, because Italo house records of the era were rather different. It is obviously a pop record, which it wasn't intended to be. We were trying to emulate *People Hold On*, by Lisa Stansfield – we really liked what Coldcut did in that record, the piano line and the sounds... And although that record sounded ten times better than *Ride On Time* in terms of quality, it's probably because he managed to mix it in a proper studio, which we didn't. For us, that was the ultimate goal. We didn't achieve that, but we thought we had something different and rather quirky, so we took our chances. It was clear from the very first moment we had the idea that it could have been a

Synths old v new

cm: In terms of synthesis, are you now working entirely 'in the box', or do you still prefer the tactility of the hardware instruments you grew up with?
Mark Limoni: "We still make use of some hardware stuff: Minimoog, Korg MS-10, sometimes a Roland Bassline, TR-808 and TR-606. We had a TR-909 – many of our old productions were made with it – but, sadly, it was stolen many years ago. We also have an Oberheim Matrix 1000, a Korg M1, a Yamaha TX802 and a DX7, which was responsible for the *Ride On Time* bass, the *Everybody Everybody (Le Freak Mix)* organ and almost all the Rhodes sounds since the beginning of Black Box.

"The tactile feel actually isn't very important for us – if virtual sounds good enough, we go for it. Of course, when you accidentally get the chance to compare the two very closely with similar sounds, the real stuff still wins, but virtuals today are so close to the real thing that usually we go for them – we don't often switch on the hardware synths."

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winner, but we could have just sold 2000 12"s and that would have been an extreme win for us, a huge win.

"In Italy now, there are producers who make EDM, as well as very underground electronic sounds and German techno, but no one's really making the Italo house that everyone knows. We stopped probably right there and then with the first Black Box album, and changed our sound. We got bored pretty quickly and we wanted to have fun, so we explored other areas and went on to do other things."

cm: So what kind of recording and mixing gear was in the Black Box studio when you made *Ride On Time*?

Mirko Limoni: "We made *Ride On Time* on an 8-track Fostex quarter-inch tape recorder, and used an Atari computer for MIDI sequencing. The Atari was slaved to SMPTE timecode, which was then recorded on one track of the tape. For mixing purposes, we had a very cheap ACES 12-channel mixer, and an even cheaper Yamaha mixer, which also had 12 channels. The only outboard that we had access to would have been an Alesis Midiverb, a Lexicon PCM 60 and a Korg delay unit.

"For the rest of the *Dreamland* album, we bought a 16-track half-inch Fostex machine and a 32-channel Mitec mixer. We also had a quarter-inch Revox 2-track master tape machine to record the mixes to and eventually edit them on by cutting and splicing the tape. Our monitors were Yamaha NS10s, and we recorded the vocals through the Mitec preamps with a Telefunken microphone and a Drawmer compressor."

> "We started *Ride On Time* on Steinberg Pro 24 and finished it on Notator – now Logic"

cm: And what were your sequencer, sampler and synths of choice?

ML: "We started *Ride On Time* on the Steinberg Pro 24 MIDI sequencer, but we finished it on C-LAB Notator – now Logic – both of them running on Atari. For the rest of the *Dreamland* album we continued to work on Notator. We had the Akai S900 samplers – one of them borrowed – as well as Yamaha DX7 and Prophet 5 keyboards. Later on, we then bought an Akai S1000 sampler."

cm: Which DAW do you use these days? Did you stick with Logic?

ML: "We use Pro Tools, as it has a reliable sound and a classic mixer architecture, so it's perfect for recording and mixing. I don't like the road that Logic went down after Apple bought the software from Emagic.

"We also have a second Mac running Ableton Live and Vienna Ensemble Pro, however. The main reason for the two-computer setup is that we have Pro Tools HD 3 with TDM Hardware, and since it still works very solidly, we don't want to upgrade to a newer system. Being 32-bit and running on Mac OS 10.8.5, though, it's a little bit 'yesterday', so to get access to newer software,

Photo by Lorne Thomson/Redferns

Out of the box

cm: What's your take on the seismic changes in music technology that have taken place over the last 30 years?

Daniele Davoli: "We're kind of the living proof that cheap technology has helped people at home, the usual punters, to make music and enter the market. But back when we started, obviously, software was still quite small, apart from the Notator sequencer, which became Logic, and so on. You still had to buy a sequencer, or a sampler, or keyboards and a mixer, but even though they were not really cheap, as software is today, it was still not as expensive as owning a recording studio, with which you'd have to spent hundreds of thousands of pounds.

"So the software became available in the early 90s and that helped a lot of people making music, and a lot of people managed to get to the top of the charts with it. Obviously, the more people entered the market, the more the competition became quite tough, and the problem that we're facing today is that too many people now – thanks to the software – are making music. Now it's not all about competition or the best; now the problem is how you make your music heard, because there are so many records released that even if you have the best record, it might take three years before it gets discovered."

we need a computer running a later OS. And the reason the second Mac is running Live is because it sounds pretty good and it's very good with MIDI clock sync, which is important for slaving it to the other computer. It's also very dance-oriented, which helps, obviously.

"We also use some stuff from Propellerhead Reason in ReWire mode, either with Pro Tools or Ableton – mainly the Dr REX player and mainly for grooves, but sometimes also the synths, usually Thor."

That power vocal

cm: Vocals have always been central to the Black Box sound. What do you look for in a good one?

DD: "It's absolutely true that the trademark of Black Box since *Ride On Time* has been very powerful gospel vocals. They have to be top notch – that's the requirement, whether we're singing something very aggressive as a backing track, or quite melodic, as we have done in the past. For us, a great vocal has to be identifiable straight away, from the first moment. You have to listen to it and think, 'Yes, that's Black Box'."

cm: For your live gigs, Daniele and Celestine are joined onstage by a guitarist and a percussionist. How did that come about as an idea, and how much are they actually contributing to the sound, given that it's essentially a DJ set?

DD: "You're absolutely right in that it is essentially a DJ set, but we didn't want to do what everyone else is doing in the field. Everywhere we go, we play with the other top dance pop artists and they're all doing the same thing: there are two people on stage, whether it's a DJ and a singer, or a singer and a dancer, or a singer and a rapper, and they're all doing the same thing. So we thought, 'We're a bit more than that, let's bring in a guitarist'. We took the guitars and some of the percussion out of our backing tracks, we just left the electronic drums – the kick and snare from the 909, and so on, because obviously a percussionist can't play that live.

"Also, we wanted to be visually filling the stage without having a full band, which would require at least six or seven members, and would become too expensive to travel around the world with. So we tried to find a good compromise, and I think we did. The percussionist and the guitarist are adding a lot, not just to the sound but visually speaking, and judging by the look on the audience's faces, they really think there's something extra going on, and that's what we want."

What's next for Black Box?

DD: "I don't know, really! What's next for anybody? We will keep recording, we'll keep touring with Celestine, and we will release tracks from time to time. We haven't planned an album yet, but we released a collection of the best remixes that we've done and other people have done for us. It's called *Superbest*, and it was released digitally and physically on double CD and vinyl. So there's no rush for another album, but we are writing new material and we are going to release every now and then, and test the waters. If the public appreciate it and want more, we'll give them more; if the public ignore us, we'll stop doing that – we'll just do it for ourselves to play at Christmas under the tree."

Black Box are touring regularly around the UK and Europe and the *Superbest* set of remixes is out on Groove Groove Melody

photo © www.robertocastano.com

"The Black Box trademark since *Ride On Time* has been second-to-none gospel vocals. That's the requirement..."

Black Box have one computer with Pro Tools and a second running Live as "it's very good with MIDI clock sync"

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YOU'RE SO PHY-SI
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How to make a 90s hardcore rave track like Calvin Harris's *Hypnagogic (I Can't Wait)*

We look at how a Bobby Byrd break, an acapella, Korg M1 piano sound and acid house bassline can create the classic sound of early 90s hardcore rave...

> **No stranger to paying homage to certain beloved dance subgenres, Calvin Harris, has most recently turned his attention to that most sacred of styles: hands-in-the-air '92-style hardcore rave – perfect for this issue of *Computer Music* then!**

Having made his name and fortune creating chart-bothering EDM, Harris's latest project, Love Regenerator, sees him taking his sound back to the 90s. In fact, he says that "every synth and sound used is from that time period".

"*Hypnagogic (I Can't Wait)* and *CP-1* are the first tracks from my new project Love Regenerator," says Harris. "I wanted to rediscover how I originally began producing music 22 years ago before I ever thought about how it might be perceived by outside forces. Just pure fun and experimentation...

"The records are inspired by early rave, breaks, techno and house, the music I was obsessed with growing up. In fact, I've done everything I can to make them sound like they've come from a 1991 time capsule."

With breakbeats, heavy bass, sampled vocals and, of course, uplifting piano in full effect, Harris – going under the name of Love Regenerator here – has done a masterful job of capturing the euphoric essence of tracks such as Awesome 3's *Don't Go*, Sonz of A Loop Da Loop Era's *Peace & Loveism* and Aurora's *Sunshine* with his latest track *Hypnagogic (I Can't Wait)*.

Let's take a look at five of the key elements that make *Hypnagogic* a kosher slice of early 90s piano breakbeat, and explain how you can create something similar.

Bobby Byrd's *Hot Pants* break

Arguably the greatest breakbeat in existence, Bobby Byrd's *Hot Pants* (Bonus Beats) will sound familiar to anyone who has spent their fair share of time riding around Los Santos thanks to the original track's inclusion on the soundtrack to *Grand Theft Auto: San Andreas*. Thankfully there's no need to resort to sampling YouTube to get your hands on a 'clean' copy of this break as it can be found in certain older sample libraries.

Here Calvin has sped the break up to a speedy 140bpm, and then – in a slightly anachronistic move, truth be told – pitch-shifted it down three semitones.

This is one of very few anachronisms in the track: timestretching and of course manual beat-slicing were indeed available to Akai-toting producers back in the early 90s, but pitch-shifting breaks only became common during the later 'darkside' era, and even then were predominantly used as an effect; see Origin Unknown's *Valley of The Shadows* from 1993, which features a pitched-down variation of the Lyn Collins *Think* break, and D'Cruze's *Want You Now* (DJ SS & EQ Remix), which features a splendid display of pitch-bent *Hot Pants* action and a familiar vocal sample to boot. More on that subject very shortly...

Calvin's *Hot Pants* break sounds big and brash. You can achieve a similar effect by running breaks through Soundtoys Decapitator. And if you're keen to get that early 90s sampler sound, why not try Inkphonik's excellent Akai S950 AD/DA converter emulation RX950.

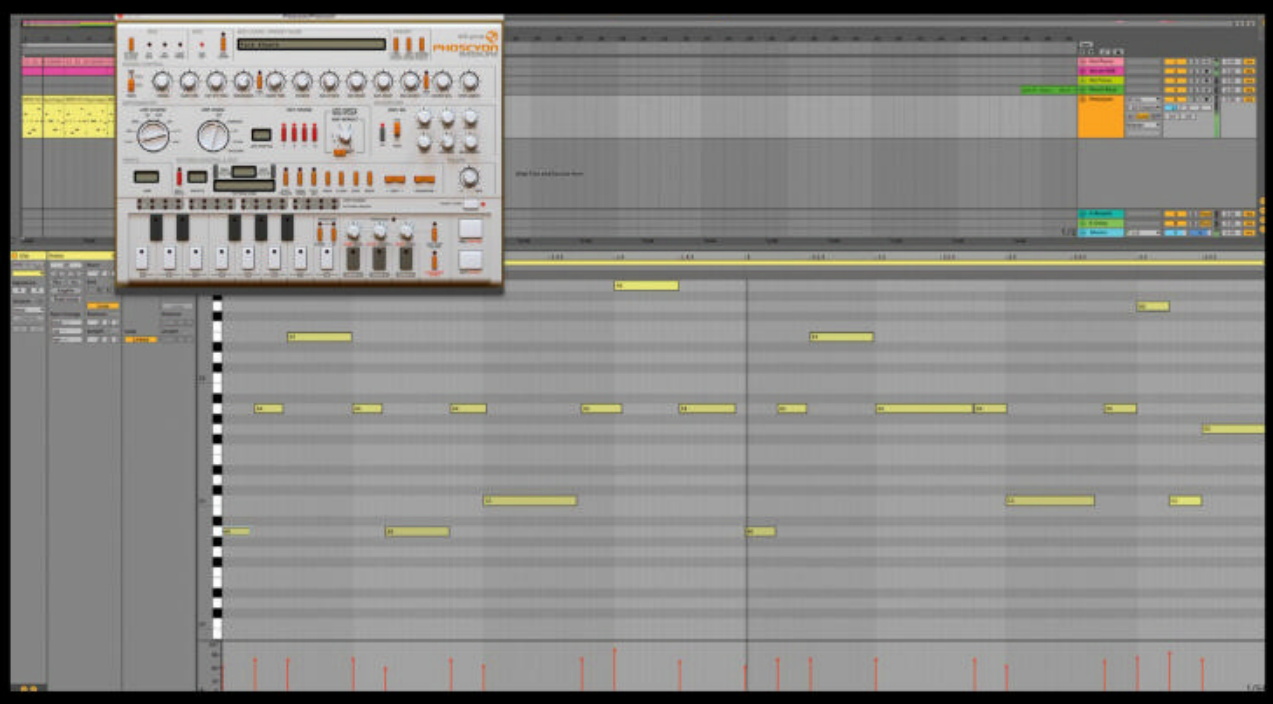
Peech Boys *Don't Make Me Wait* acapella

The acapella version of Peech Boys' electro disco banger *Don't Make Me Wait* was sampled heavily back in the heyday of rave, most famously in Altern 8's *Activ-8*, as well as in a slew of other tracks including Citadel of Kaos's *Ronnies Revenge* and DJ Trace's *Ain't Gonna Wait No More*.

While old-skool hardcore tracks were infamous for speeding up vocals to 'chipmunk' pitch rather than timestretching them, here Harris has timestretched them to *Hypnagogic*'s 140bpm tempo and pitched them up a relatively subtle two semitones, which gives them a slightly more feminine quality.

Lashings of delay have also been applied for an epic feel, and while Calvin is stupendously rich, perhaps he opted to save a little cash with a near-constantly-on-sale delay plug like Waves' H-Delay.

We used www.acapellas4u.co.uk to locate the vocal, which also appears on unauthorised vinyl acapella compilations if you're after that OG sampling experience.



Acid bass

This is where things get a little trickier to discern. The 'acid' warble that kicks off *Hypnagogic* does indeed sound reminiscent of the classic Roland TB-303 and, by extension, the excitingly economical Behringer TD-3. However, the sound in Calvin's track appears to have a filter movement with a slight attack at the start – something that's not possible with either the original 303 or Behringer's clone.

We found that the easiest way to get something similar was to use D16 Group's 303 emulation Phoscyon, which boasts quite a few features not on the original hardware, including an Env Attack knob.

While we can't claim that *Hypnagogic* definitely uses this excellent acid box, it certainly sounds close enough. And at a mere €59, you don't have to be a handsomely-rewarded pop producer to afford a copy either.

House piano

The Korg M1's Piano 8' and Piano 16' patches were behind an astounding number of rave-era anthems – Dream Frequency's *Feel So Real*, Manix's *Feel Real Good* and M.A.N.I.C.'s *I'm Comin' Hardcore*, to name but a few – and while *Hypnagogic* isn't a million miles away from that iconic tone, we got closest using the M1's PianoWith? program, which even includes the same slap delay-esque effect used on the Calvin Harris track.

The Korg M1 plugin is extremely reasonably priced at a mere $50, making it a no-brainer for lovers of rushing hardcore pianos. But if you're after something that sounds a little different, then Korg's later Triton synth has plenty of suitable patches, Roland Cloud features a plugin version of the popular JV-1080 sound module (which has its own pleasing piano tones), and of course reFX Nexus has its own fair share of well-loved piano patches, too.

In the image above you can see the chords used – note the use of harmonies in the bass that will get you that soulful classic house feel.

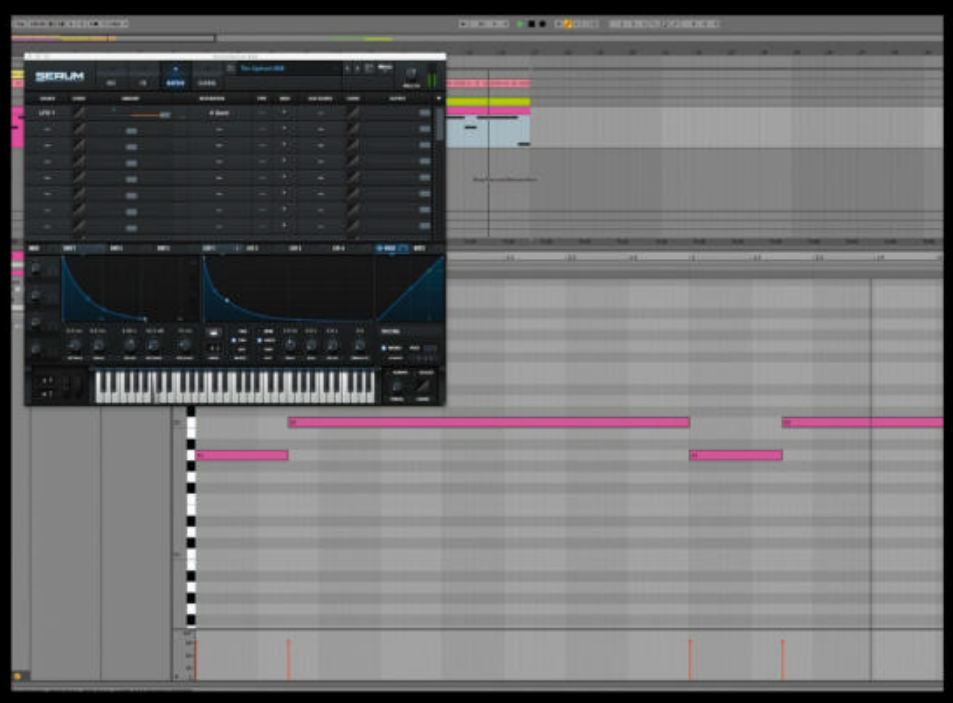
808-style bass

Here, Calvin takes a slight bit of artistic license with the '92 hardcore rave formula.

The classic sound of rave bass is the Akai sine test tone, which was a staple of happier hardcore tunes' low-end, with junglistic 808 bass really only rearing its filthy head in later piano slammers such as Manix's *Alright Wid Me* (Tek 9 Remix) from 1993, and Mercurial's *Feel The Energy* from 1994. However, *Hypnagogic*'s use of 808 subs is tasteful enough to make any criticism feel churlish.

If you're after authentic sampled 808s then GoldBaby's Tape808 is a fantastic choice and extremely reasonably priced at $29, or you can roll your own bass drops by making a sine-based synth patch that uses an envelope to drop the oscillator's pitch.

Hypnagogic (I Can't Wait) and *CP-1* can be heard on the *Love Regenerator 1* EP, available now



FERRY CORSTEN

The Dutch trance master has turned down the strobes, ditched the kick drums and released an ambient album

> **"If people see my name, they think of trance music," admits Ferry Corsten. "That's OK. I love trance and it's a huge part of my life. But when I'm at home or driving in my car, I like to give my brain a holiday. I listen to a lot of drum&bass... I listen to a lot of experimental music. Downtempo music. Nothing to do with the dancefloor. And I think that's where I got the idea for the new album."**

There's no doubt that *As Above So Below* – the recently released album, credited to Ferr by Ferry Corsten – is going to raise a few eyebrows. It contains hardly any beats or basslines. No thrilling synth runs or vocal hooks. This is... ambient. Huge, reverb-soaked pads and delicately-sifting piano pieces. Half-remembered melodies with nothing but the faintest throb to help keep time. Sampled rain and soaring, cinematic strings.

"Life is crazy," explains the Dutch producer and label boss. "And this year it's been crazier than ever. Every day is full of stress and worry. And it seemed like this music was a way of just letting me zone out for a while. To get away from the madness."

Corsten has been at the heart of the trance scene since the very earliest days, releasing hits under a serial of aliases – Moonman, Albion, System F, Gouryella etc. Indeed, System F's *Out of the Blue* and *Gouryella* by Gouryella helped define the sound of the burgeoning 90s trance scene. Understandably, Corsten is quick to point

out that *As Above So Below* is not the end of his dancefloor journey. Evidence of that came earlier on this year via the Purple Haze/Ferry Corsten track *Flanging*. Plus, there's his ongoing live/studio collaboration with Markus Schulz, New World Punx. And not forgetting Corsten's trance-heavy label, Flashover Recordings, which is home to recent top-quality tunes like Dimension's *Origami*.

"I hope this album does surprise a few people because... well, it was a little bit of a surprise even to me. If you really think about it, that's one of the greatest things about music. That's why I started making music all those years ago. To surprise myself and other people. To have some fun in the studio. To find a home for the music that was in my head.

"Right now, dance music seems to have become quite severe. Too exact with the rules. Not willing to bend those rules. 'Ferry Corsten has made an ambient album. That's not allowed! He's using this synth for his basslines. That's against the laws of trance music!'

"But it doesn't matter if it's trance or ambient or techno, there have never been the 10 Commandment that we all have to follow. Dance music has always been about trial and error. What happens if I do this? Wow, that sounds amazing. That's how dance music has always grown in the past... by trying something new. Speeding up a loop or adding crazy side-chaining effects.

> "If producers aren't allowed to step out of their little boxes, then dance music will stagnate. Stand still. Nobody wants that"

"If producers aren't allowed to step out of their little boxes, then dance music will stagnate. It will stand still. Nobody wants that.

cm: You said that the music from this album was 'in your head', but was there a particular incident, song or idea that kickstarted the album process?

FC: "There was never a particular moment where I thought, 'OK, let's make an ambient album'. Like I said, this was an album that surprised me. I kind of made it without knowing I was making it. If we're looking for a starting point, maybe it was about two years ago when I put together a Spotify playlist and suddenly noticed that it was all this kind of music... experimental, with lots of space to clear those manic thoughts. Nils Frahm, Jon Hopkins, Eno. Some soundtrack music.

"Not long after that I was asked to do the soundtrack to a film called *Don't Go*. Because of that, I was diving even deeper into the world of experimental and ambient sound. Music that was very different to what I was used to making. With *Don't Go*, I was looking at an entire album's worth of songs. So, I jumped in and said, 'Let's see what happens. Let's see how these songs actually work as an album'."

cm: You've spent half a lifetime starting songs with kick drums and basslines. How did songwriting work on this album??

FC: "A nice pad is always a good place to start. But I was immediately getting nerdy with the automation... drawing in all kinds stuff. Most of this album was written on the laptop. At the airport and on planes, with no keyboard. All done with mouse clicks. At the beginning, you think that having no keyboard is going to limit you, but, after a while, I started to see it as a new kind of artistic freedom. When you can't play notes on a keyboard, you play them in a different way. Your brain is having to reconfigure how it's going to get the notes you want into the computer. Sometimes, you get it wrong. You're trying to think about music theory, chord structure... but sometimes, you just click on a note and, bang, it works. In some ways, it felt like

Photo: Mark Davis/Getty Images

Markus Schulz and Ferry Corsten perform onstage at the 2015 Coachella festival

The studio represents a place where Ferry 'finishes off' his music

a very natural way of writing music. The music was building and building, coming straight from your mind, like magic.

"Very quickly, I started to lose myself in these songs and they came very quickly. One day, I looked on the computer and realised I'd got a whole bunch of them sitting there. Yes, I took them into the studio to finish them off and add the last few touches, but I'd say that about 70-80% of every song was put down on the laptop away from the studio."

cm: Did the dancefloor version of Ferry Corsten ever try to take over? "What this one needs is a rasping synth top line and a kick-ass vocal?!"

FC: "Yeah, that happened a lot. It's second nature to me. You hear a song and you think 'What can I put here? Do we need more movement in the chorus?' This time, there was no chorus. Instead of being right in the middle of the music, I tried to take a step back. Does this track need anything else? Does it need another hook? If I put in a bassline – a couple of tracks do have basslines – will it take away from what the song is supposed to be doing?

"There are a couple of songs on the album that start with not much more than a pad. But then I go even more quiet. Then a little bit more. Then a bit more. You're always looking for very small changes. Trying to find some extra space. Space for the listener to exercise their imagination. That's where the beauty lies in music like this. That's the art of it... if that doesn't sound too pretentious. This music is supposed to be calming you down. So, as a producer, you

have to stay calm, too. Totally different to writing a trance tune."

cm: Turn the monitors up and see how many of the neighbours complain?
FC: "Ha ha. Not quite. There is emotion in both situations, but creating a club track is all about the gut. Something clicks and you feel all the hairs on the back of your neck. You smile and say, 'If I can feel this, other people will, too'. With this album, it was me saying, 'If this song can relax my shoulders and slow down my crazy brain, it's working!'"

cm: The pads that you've been talking about. Did they come from plugins or did you create your own?
FC: "There were a few that started out as presets, maybe from Nexus or Padshop in Cubase. I have no problem with that. As soon as you put a preset through some serious effects, you're creating something new. The preset was just a starting point.

"But most of the pad sounds came from samples that I recorded... things like a single note on the piano put through a huge reverb or the sound of rain outside the studio. You think, 'Oh, sampled rain for an ambient track. That's been done a million times'. But if you put that through Ableton's Resonator, you start to hear a whole new bunch of textures. You have your own custom sound."

cm: Is Ableton your main DAW?
FC: "Nope! Cubase. I've been using it since the Atari days. I had a small side-step into Logic around about Logic 5, because it seemed to be a few steps ahead in terms of the audio. Unfortunately, I never seemed to be able to get my head around it. And then they decided it was going to be Apple only. At the time, my whole setup was PC-based and I didn't have the energy for a complete change of studio. I went back to Cubase and immediately felt much happier. I am on Apple now, but I was very loyal to my PC.

"It always makes me laugh when I look on the forums and see people arguing about the different DAWs and different computers. Logic is better than FL Studio. FL Studio is better than Cubase. Ableton is better than Logic. PCs sound better than Macs. Does it really matter? The music you'll make at the end of it isn't going to change by 100% just because you switch from Cubase to Ableton.

"OK, I admit that some DAWs do certain tasks better than others. That's why I use Ableton alongside Logic. If I'm putting together a mix, I go to Ableton. If I want to start creating all sorts of strange effects by bending and stretching the sound, it's also Ableton. And time-stretching is still a little bit tricky on Cubase, but it's super-quick on Ableton."

cm: And you moved over to Mac?
FC: "About five years ago. I think the one in the

Kit list

HARDWARE
Apple Mac Pro
Barefoot Micromain27 monitors
Roland JP-8000
Alesis A6
Nord Rack 3

SOFTWARE
Cubase 10
Ableton Live 10
Native Instruments Reaktor/Kontakt/Guitar Rig/Battery
LennarDigital Sylenth1
Reveal Sound Spire
reFX Nexus
Sonic Academy Kick 2
ArtsAcoustic Reverb
iZotope Alloy 2/Nectar/Ozone 5
Vengeance Sound Multiband Sidechain3

Ferry Corsten performs during the Electric Zoo 2013 event in New York

Photo: Daniel Zuchnik/Getty Images

MIDI just ain't tight enough!

"When it comes to drums, I always work with audio. I take my kick and my snare, and I place them right there on the timeline. Why? Because MIDI is MIDI... it's wobbly. It moves around. Believe me, there is latency. You won't hear it at first, but try this. Put your drums in something like Battery, programme your loop and render it out. It will sound great. You've got some cool drums there.

"But if you zoom in – and I'm talking about zooming in right to the very start of the bar – you will notice that some of the drums miss the start point. It's not by much, but when your kick drum isn't hitting its mark, it makes a big difference to certain types of dance music. Just as an experiment, cut your rendered drums in to chunks of audio and manually quantise them until they're locked in. Now play that loop again. You see? I told you it would make a difference!"

studio is from a couple of years ago, but I'm already looking at the latest black one they've brought out. Mine is beginning to struggle."

cm: You very kindly sent over some pictures of your studio and I couldn't help but notice the monitors. Barefoot Micromains? That's a few grands' worth!

FC: "I had a pair of Dynaudios which I had trusted for years. I'd used them for so long that I trusted them blindly. If it sounds OK on the Dynaudios, it'll sound OK anywhere. But then I started getting calls from the guy who does my mastering. 'Hey, your highs are getting a bit peaky. And there's a dip around 200-500Hz'. Maybe they were getting tired, I don't know what it was. All I can say is that the Micromain27s are absolutely unbelievable!"

cm: Is there much done at the mastering stage or are tracks more or less finished by the time they leave the studio?

FC: "All it needs is a bit of levelling. Apart from that, it's ready to go. If I wanted to take a track and play it out in a club tonight, it would sound OK. That's how far I go... I want to have complete control over how the track sounds. I don't want any surprises.

"Mastering is an art, but it's not my art. I can create the track, but a good mastering engineer will wrap that track in silk."

cm: Again, looking at the studio pictures, there is a bit of hardware in there... Alesis A6, the Roland JP-8000. Ah, one of the classic trance synths.

FC: "I was one of the first people in Holland to get the 8000. That helped me make *Out of the Blue*... the legendary Supersaw sound. Sadly, it hasn't been used for a while and none of the hardware got used on this album. I've only recently got those synths patched into the studio. Messing around with them has always been fun, but I couldn't live without plugins. Being able to work on the laptop 10,000 miles from my studio allowed me to make this album. The time and place where I switched on the laptop would have filtered through into songs...

Nicky Romero Kick and Sylenth 1

The Alesis Andromeda A6 and (below) Roland JP-8000... but for this album, the laptop was king

to the feel and the emotion. Hardware wouldn't have worked for me. I could not have made this album in the studio."

cm: Which plugins did all the hard work?
FC: "A lot of the Native Instruments stuff. Reaktor, Kontakt, the Guitar Rig for crazy effects. Some of the presets on Nexus, Spire came up with some cool sounds and Sylenth, of course. I guess I'm not the only producer mentioning Sylenth these days! Nicky Romero's Kick and Battery for the drums.

"On the effects side there's the whole Waves package, FabFilter, iZotope and ArtsAcoustic handled most of the reverbs."

cm: Like your trance tunes, this album has got some sizeable 'spaces'.
FC: "For me, reverb is absolutely central to trance music. If you haven't got some big, big reverbs in there, the tracks sound kind of... amateurish. It sounds like dance music for kids. And delay, of course. Don't be shy with the reverbs and the delays. They can add so much to a trance tune and an ambient tune.

"And I've really got into side-chaining my reverbs. We all know about side-chaining to the kick drum, but what happens if you side-chain to other random elements of the song? The main tool for this is the Vengeance Sound Sidechain3, the multiband one. You can trigger it with MIDI notes or audio, like one of the synth notes in the main hook. Suddenly, the reverb is ducking and reeling in strange ways, but it still fits with the music."

cm: This isn't a trance album, but it seems odd not to ask you about trance's current commercial high.
FC: "People are saying that trance is back, but, as far as I'm concerned, it never went away. Yes, there are waves of success in dance music... trance was huge, then something comes along to take its place. Electronic music is forever splintering, and certain sounds move in and out of fashion, but there was always a hardcore audience that was following trance. You pick any big festival from the last 20 years and you'll find a trance stage.

"With all due respect to EDM, I think people have got tired of that type of song. Sure, it does the job. Hands in the air and the crowd goes off. You can't argue with that. But, c'mon, where are the great tunes. A melody that will stay in your head for 20 years.

"I'm not just saying this because I'm an old trance guy, but I genuinely think that the reason people are listening to trance again is because melody is the key.

"That's what you always get with a great trance tune... big emotions and big melodies. That will always connect with people."

The album *As Above So Below* is out now. Look out for details of Corsten's planned 'What the F!' live shows

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TRANCE

Come with us to a hypnotic, trippy dimension and produce a track in one of the 90s' best genres...

> **Despite having been around for at least three decades, trance remains a bafflingly divisive and controversial genre. To some, it's a hypnotic, euphoric style of music with deep, spiritual roots. To others, it's a naff, cliché-ridden sound which repeats the same tired old formulas ad nauseam (or, as Dave Clarke memorably put it, "watered-down techno").**

Here at *Computer Music*, we're nothing if not open-minded. While there's no doubt that the distinctive stylistic tropes of trance make it easy for producers to fall into the trap of cliché, it can be joyously vibrant and exciting when done well.

Since emerging as a distinct genre in the early 90s, trance has waxed and waned in popularity, spawned countless subgenres – which we'll get into – and provoked some strong reactions of love and hate.

To the hardcore few, trance never went away, but in the last few years, the style has gone through something of a critical reappraisal, with a new wave of producers introducing trance elements to their sound and exploring the genre's potential.

How are we defining it? As a genre it's quite varied, but easily spotted by its key characteristics. Broadly speaking, it's a four-to-the-floor offshoot of techno, typically between 130 and 150bpm. More importantly, though, there's almost always a certain epic quality to the sound, based around repetitive melodies, minor-key chord progressions, dramatic build-ups and breakdowns.

We'll show you where it came from, how it's done and how you can go full-on trance – or just introduce a few subtle elements to include in your own productions and genres.

10 TRANCE MAINSTAYS

There are a range of elements that might be best described as 'trance tropes'. These are not essential to all trance tracks, but have come to be known as signifiers of the genre. Here are the main ones...

01 SUPERSAW SYNTHS

At this point, the supersaw synth is probably the single most recognisable sound of trance, dominating everything from psytrance to EDM. The Roland JP-8000's supersaw sound is the granddaddy of them all, essentially an attempt to replicate the fuzzy, thick sound of seven sawtooth oscillators detuned against each other. The sound quickly became a staple of dance music generally, but trance producers adopted it as a mainstay, using it for pads, leads and even bass. The original point of the supersaw was to achieve something that would be difficult on a true analogue synth (you'd need dozens of oscillators to play a truly analogue supersaw pad). Nowadays, in software, that's not a problem; most synths can do multi-oscillator supersaw-style sounds, whether via a dedicated supersaw oscillator or an oscillator detune/unison option. The closest thing to the 90s virtual analogue original comes in u-he's Diva, courtesy of the digital oscillator, modelled on the original Roland sound.

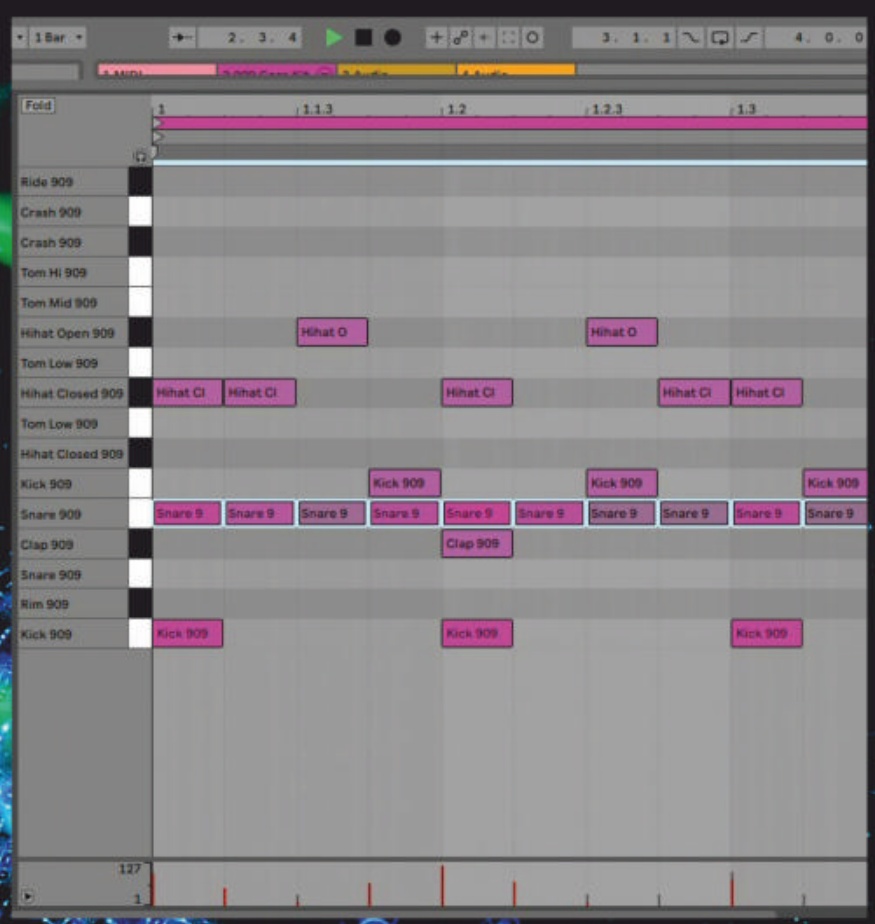
u-he's Diva does the supersaw better than most

02 BUILD-UP/ BREAKDOWN

Speaking of the arrangement, trance is all about the slow build and sudden breakdown. It's a common formula across plenty of other genres, but trance does it better than anyone. Some subgenres emphasise the drop, where the reintroduction of a heavy kick drum and bassline is the focal point, but in other styles it's almost the exact opposite, with the hands-in-the-air breakdown being the key moment, and the reintroduction of other elements being downplayed by comparison. Ebb and flow, tension and release: trance celebrates the contrast.

03 PADS AND CHORDS

Minor key progressions and synth pads are the bedrock of trance's epic sound. Although plenty of trance tracks could be described as two-chord wonders, there's also room to get a lot more complex than you typically might in house or techno, with constantly changing chords, contrasting verse and chorus sections. But you shouldn't be scared to experiment, even if you're not extremely clued up on music theory. Anything goes.



04 TRANCE DRUM RUDIMENTS

The 909 is a staple of trance, thanks to the genre's late 80s/early 90s roots. A simple four-to-the-floor kick and offbeat hats will get you started, but long snare rolls are also common. 16th- or 32nd-note rolls are good but will sound robotic without some variation in velocity and/or pitch, so try building up or emphasising beats to avoid a machine gun effect. Once you've cracked the technique with a 909 snare, experiment with layered acoustic hits, other drum machines and even white noise.

05 ARPS

One of the best ways to add interest and movement to those epic chord progressions is by playing them using arpeggios. These can be used to provide relief from the thicker, slower pads or sit on top of them, filling in other areas of the frequency range. Of course, lots of soft and hard synths have built-in arpeggiators, but you can use MIDI effects in most DAWs to create arpeggios without having to play or program them manually.

06 OFFBEAT BASS

With the relentless four-to-the-floor kick drum pounding away throughout most trance tracks, it's easy for the bottom end of the mix to get overloaded when bass is added. One of the common solutions in trance is to play the bass notes in the offbeats, ie every 'and' of a "one-and-two-and-three-and-four-and..." count, with the kicks sitting on the 'one', 'two', 'three', 'four'. By placing the bass notes in between the kicks like this, they naturally find their own space in the mix without having to EQ heavily or use sidechain compression to duck the bass.

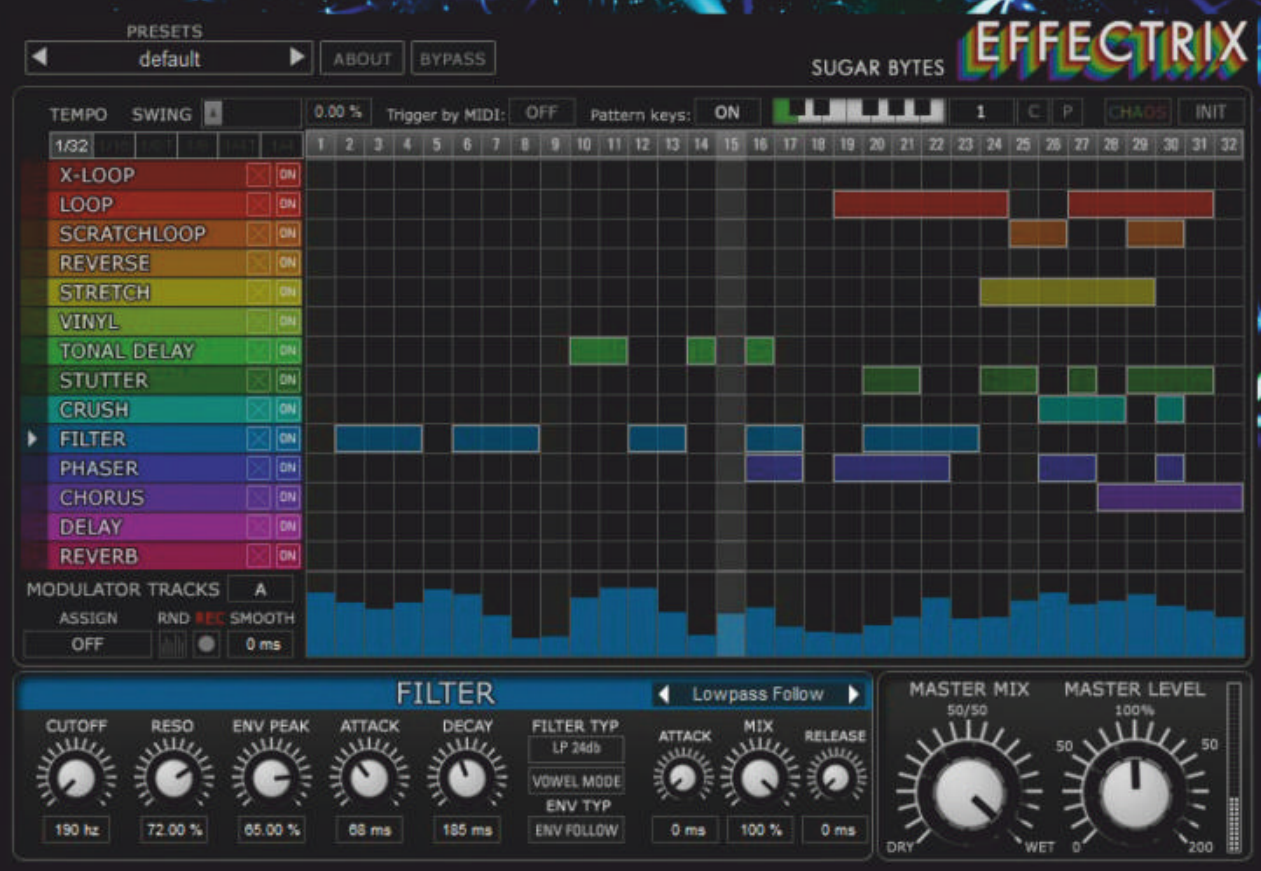
07 TRIPLET BASS

A staple of psytrance is the triplet bass, named after the simple musical theory that defines its rhythm: three notes (triplets) per beat (or sometimes two beats). It sounds more confusing on paper than it does to the ear; the interaction of the straight 4/4 kick drums and off-kilter bass notes provides an almost woozy, lilting feel to the rhythm, almost as if the track is slow and fast at the same time, regardless of tempo. There are people who think the trick has become a bit tired and overdone, but it's so effective that it doesn't seem to be dying out just yet.

08 DELAYS

The use of effects varies from one trance subgenre to another, with some going in for big and bold reverb (even on kick drums), weirdo filters and modulation. What you'll tend to find, even in the sparser styles, is liberal use of delays on simple melodies and arps in particular, adding complexity and rhythmic interest to otherwise quite basic elements. Spot effects on specific sounds can also be hugely effective, whether to emphasise changes in the arrangement or smooth transitions between one section and the next. We prefer delays with a bit of character to the sound, like Valhalla DSP's ValhallaDelay.

Try pitchshifting fed back into itself for wild vocal FX



09 GATED SOUNDS

Since the early days of trance, one of the most common tricks to liven up pads, leads and samples has been to feed them through a tempo-synced gate. There are quite a few different ways to achieve the effect. Some synth instruments contain a built-in gate, but you can apply similar principles to any other sound. The manual approach is to set up an aux with a noise gate on it, then use a muted channel as a trigger to feed into the gate's sidechain. It's much easier to use an effect sequencer such as Sugar Bytes Effectrix, which allows you to program interesting tempo-synced patterns with gates (and much more). Alternatively, for a basic but extremely quick version of the sound, you can use a simple tremolo plugin or something like Cableguys' VolumeShaper.

10 MIXDOWN

Early trance was largely a rough-and-ready affair, following the house and techno of the era with ramshackle arrangements and slightly clunky mixing by modern standards. Over the years, though, things have generally got much cleaner, louder and more polished thanks, in part, to the technology used, but perhaps more importantly down to an improvement in production techniques. More commercial trance styles generally follow the modern trends for frequency separation and heavy compression, but there's still a lot to be said for a slightly more retro, lo-fi approach if that's what you prefer. The sound of the mix can define the track, so don't be afraid to experiment until you find the approach that works.

Classic trance tracks

From the earliest trance through to modern takes on the sound, we trace the evolution of the genre through ten classic tracks

THE AGE OF LOVE – *THE AGE OF LOVE (JAM & SPOON MIX)*, 1990

A strong contender for the title of first proper trance track. A lot of the key elements here had been used before, but Jam & Spoon's remix combined many of the components which we now take to be staples of trance: lush pads, relentless melodies, gating effects, pounding kick drums... an instant classic.

PAUL VAN DYK – *FOR AN ANGEL*, 1994

Undoubtedly a high point of trance's mid-90s heyday, from one of the masters of the genre. Simplistic piano riffs and pulsing synths are underscored by propulsive bass and drums, somehow ending up simultaneously blissed-out and energising.

JOSH WINK – *HIGHER STATE OF CONSCIOUSNESS*, 1995

Is this techno or is this actually acid house? Maybe neither. *Higher State* can stake a claim to various genres, but it's certainly indebted to the loopy repetition of trance, showing that acid can be trancey too. There's a subtle dividing line between the styles (and many people would probably file anything with a 303-style acid line under house or techno) but there are huge similarities in terms of structure, builds and breakdowns.

ATB – *9PM (TILL I COME)*, 1999

Late 90s commercial trance is where things start to get a bit dubious. The sound was huge across Europe for a few years, but things soon turned stale. To some, the slightly childish melodic hooks and vocal samples of tracks like *9PM (Till I Come)* are the turning point. It has a certain charm, but there's no doubt things were starting to get tired around this era.

SASHA – *XPANDER*, 1999

The perfect antidote to cheesy commercial trance came in the form of *Xpander*, which signalled something of a dividing line between progressive trance and the progressive house sound with which Sasha became associated with. Eleven minutes of rolling, wistful magic.

INFECTED MUSHROOM – *BUST A MOVE*, 2000

Weird and wonderful stuff from the Israeli trance veterans. Acoustic percussion and guitars meld with synths and slamming kicks, proving that trance doesn't just need to be about the obvious sounds. If anything, the genre is always at its best when breaking away from the rules and conventions.

NATHAN FAKE – *THE SKY WAS PINK (JAMES HOLDEN REMIX)*, 2004

On a similar note, Fake and Holden's left-field trance classic showed there was still huge creative potential in a genre that some had already written off. Oddball melodies. Sidechained noise. Wonky beats. Glorious.

MAGNETIC MAN – *I NEED AIR*, 2010

OK, it's certainly not straightforward trance as we know it, but there's no denying that on tracks like *I Need Air* and *Anthemic* the dubstep supergroup brought trancey stabs, arps and sawtooth synths to their bass-heavy sound, proving the huge crossover potential. It's hard to think of any genre that couldn't be fused with some of the broader ideas of trance, from repetition and structural tricks through to specific sounds.

LORENZO SENNI – *THE SHAPE OF TRANCE TO COME*, 2017

Senni's 'deconstructed' trance experiments explore the extreme, minimalist limits of trance's potential. On *The Shape Of Trance To Come* he fuses hardcore punk attitudes with classic JP-8000 supersaw synths. One of the artier takes on trance, no doubt, but deeply engaging and uniquely comforting in its own way.

BICEP – *GLUE*, 2017

The duo are dance music scholars, open to a bit of everything. On tracks like *Glue* and *Orca*, they flirt heavily with trance, bringing the classic sounds to new generations. With the resurgence of more mainstream interest in trance, house and techno audiences are once again receptive to what might have been written off as cheesy a few years ago.

MOBY – *GO (WOODTICK MIX)*, 1991

You can argue until you're blue in the face about what constituted trance back in '91 but, whatever, Moby's *Go* brought the genre – or a version of it – to the mainstream. Indeed, with just a couple of sampled vocals and a chord progression lifted from *Twin Peaks*, it arguably shaped that entire decade of repetitive beats.

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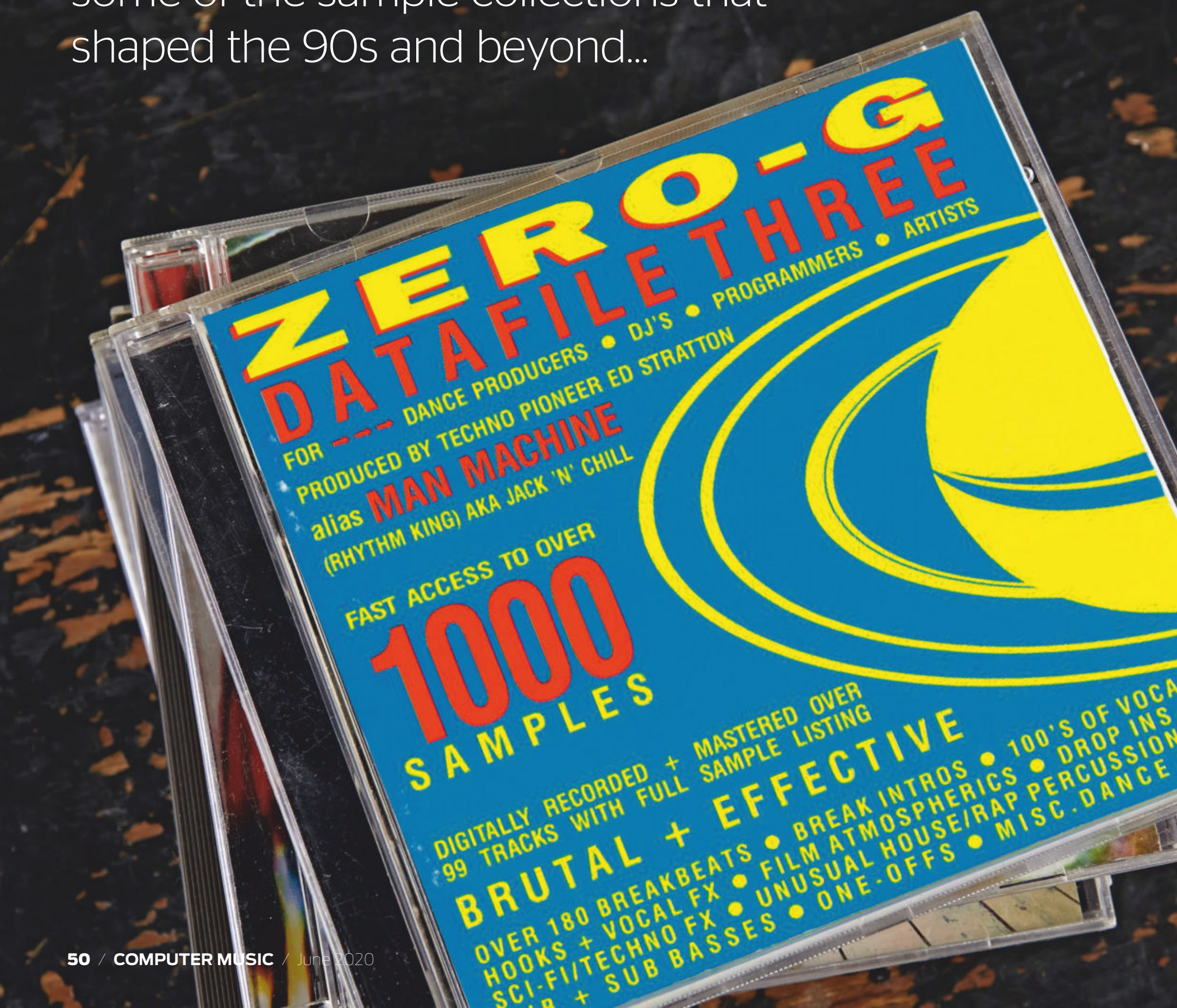
NATIVE INSTRUMENTS

THE FUTURE OF SOUND

10 classic sample libraries that changed music

From jungle breaks to genre-defining club sounds, *Computer Music* celebrates some of the sample collections that shaped the 90s and beyond...



> Despite being an essential staple for everyone from bedroom beatmakers to world-famous producers, sample libraries aren't exactly considered high art.

This is something of a pity, because many of them have had a substantial impact on how contemporary music sounds, especially in the early days of affordable hardware samplers when soundware wasn't so abundant.

Those old enough to remember making electronic music in the early 90s will recall that sample CDs cost upwards of £60 (a lot of money in those days, you whippersnapper!) and varied wildly in quality. Spend your budget on a dud and you'd have a much harder time making decent-sounding music. Pick the right one though, and you'd be rolling in inspirational (though often uncleared) sounds, making your hefty investment more than worthwhile.

As the world of music production has evolved, sample libraries are much less likely to feature copyright-infringing material, and are arguably less interesting as a result. In fact, many of the best and most popular libraries from the early days have been discontinued, which only goes to make them more mysterious and desirable.

That said, there are a number of soundware developers who continue to create innovative, game-changing libraries. So, in tribute to these unsung heroes and as a celebration of this underappreciated artform, here are our pick of the 10 most influential sample libraries of all time...

01 ZERO-G DATAFILES 1-3

The Datafiles series was created by Zero-G founder Ed Stratton, who used sounds from his personal sample collection, many of which were likely taken from records.

Despite being rumoured to be full of uncleared samples, the Datafiles were enormously popular, and became the de facto source of breakbeats, bass and vocal samples for the dance music scene in the early 90s.

In fact, it'd be hard to overstate the importance of the Datafiles on the sound of early UK house and DnB, but thanks to the dubious legality of their content they're no longer available. If you happen to spot any of them in the wild, buy on sight!

02 POLESTAR MAGNETICS THE X-STATIC GOLDMINE

Another potentially copyright-infringing masterpiece, Polestar Magnetics' The X-Static Goldmine was a 2-CD monster.

While arguably less useful than the Datafiles thanks to the fact that some of the samples (particularly vocals) were manipulated in a less than desirable manner, it was still a fantastic source of sounds, from classic hip-hop breaks and synth stabs to weird lo-fi instruments and vocoder loops.

Polestar Magnetics went on to become eLab, then Equipped Music, producing a slew of top notch libraries, including the much-loved Smokers Delight series.

03 ZERO-G AMBIENT

With chart success for rave acts like The Prodigy and SL2, and The Orb reaching number 1 in the UK album charts, 1992 was undoubtedly the heyday of feel-good electronic music. Darker times were around the corner, however, making Zero-G's weird and wonderful Ambient library a timely release indeed.

Haunting and mysterious rather than blissed-out, Ambient was jumped on by producers seeking to distance themselves from the lovey-dovey vibes that dominated the raves and chillout rooms of the time, and many of its sounds can be heard in the emerging darker, more 'intelligent' strain of hardcore that eventually evolved into DnB.

04 SPECTRASONICS DISTORTED REALITY 1

You may not have heard the name Eric Persing before, but you've almost certainly heard his sounds thanks to his tenure as Chief Sound Designer for Roland and founding of Omnisphere developer Spectrasonics. They made a big splash with their early releases, Distorted Reality 1 and 2 in particular, thanks to their originality and unparalleled production values. The range has been discontinued, but like various other Spectrasonics libraries, it lives on as part of Omnisphere's gargantuan sound source library, and still sounds as fresh and usable as it did in the mid-90s.

05 CREATIVE ESSENTIALS JUNGLE FRENZY

Produced incognito by a legendary DnB production duo, Jungle Frenzy was the budget-priced follow-up to the enormously popular Jungle Warfare library. Despite its low price, Jungle Frenzy had a better and broader array of sounds than its predecessor, including some great quality versions of classic breakbeats, pristine drum hits, and luscious keys and pads.

Unlike many of its contemporary sample libraries, Jungle Frenzy is still available, and at a jaw-droppingly low price to boot. If you have even the vaguest interest in breakbeat-oriented dance music you absolutely need to grab it while you still can.

06 ZERO-G PLANET OF THE BREAKS

Despite an absolutely bonkers CV (and being responsible for some of the greatest cover versions of all time) beatsmith Shawn Lee is somehow not a household name, unless you live in a particularly groovy household.

In 1998 Shawn unleashed his debut sample library on the world – a selection of new drumbeats inspired by classic breakbeats. Impeccably produced, without a hint of copyright infringement, Planet of the Breaks was a taste of things to come, spawning three sequels and becoming a bona fide classic.

Those who enjoy the sound of splashy cymbals need to check this one out without further hesitation!

07 UEBERSCHALL HOUSEWORX!

Produced by none other than Mousse T. of *Horny* fame, Houseworx! is a collection of mid-tempo beats, basslines and samples culled from a career so glittering that Mousse's Discogs credits page takes about three days to load.

Housework! was arguably the first great house music library, thanks in particular to its funky loops played by session musicians. The fantastic vocals, bumping beats and useful multisamples only sweetened the deal, and it's a real shame that Houseworx! is no longer available, because it's an absolute corker.

If you make any kind of organic-sounding dance music, this one's well worth keeping an eye out for.

08 BEST SERVICE HORNY CLUBSOUNDS

Unlike Houseworx! the cheekily-titled Horny Clubsounds didn't have a big-name producer to market itself with, and its content wasn't quite as original, with familiar sounds cropping up all over the shop. Nevertheless, it still constituted a cracking collection of samples overall, boasting a massive selection of housey organ stabs and character-packed electric piano chords.

Many of the noises featured in this library have come back around into fashion, and it's not quite as hard to find secondhand as some of the other libraries on this list. As such, deep and funky house producers would do well to trawl the web – and, you never know, the odd car boot sale – for a copy of their own.

09 VENGEANCE ESSENTIAL CLUBSOUNDS VOL. 1

The 00s wasn't exactly a vintage decade for soundware, until Manuel Schleis' range of Vengeance libraries appeared on the scene. With the world in the thrall of bangin' electro house, producers needed big, beefy drum hits, and Vengeance Essential Clubsounds Vol. 1 provided them in bulk.

Processed to within an inch of their lives, VEC1's one-shots took the time and heartache out of building up a mix-ready library of kicks, hats, claps and snares, and included some excellent loops, vocals and FX as well.

Sadly unavailable now, Vengeance Essential Clubsounds Vol. 1 will go down in history as a library that changed the sound of dance music.

10 GOLDBABY TAPE808

The drum machine that wouldn't die, Roland's TR-808 seems to be more popular than ever these days, both as hardware and software. There are also tonnes of libraries that feature its simple but slammin' sounds, though none can rival Goldbaby's Tape808, an epic selection of 808 drum hits recorded with various levels of Ampex tape saturation.

If you're after authentically analogue-sounding versions of those classic Roland TR kicks, snares, claps, hats and percussion sounds, Tape808 is, it must be said, utterly essential, and at a measly $29 it's certainly much cheaper and a lot less hassle than acquiring and sampling your own TR-808 and Ampex hardware would be. **cm**

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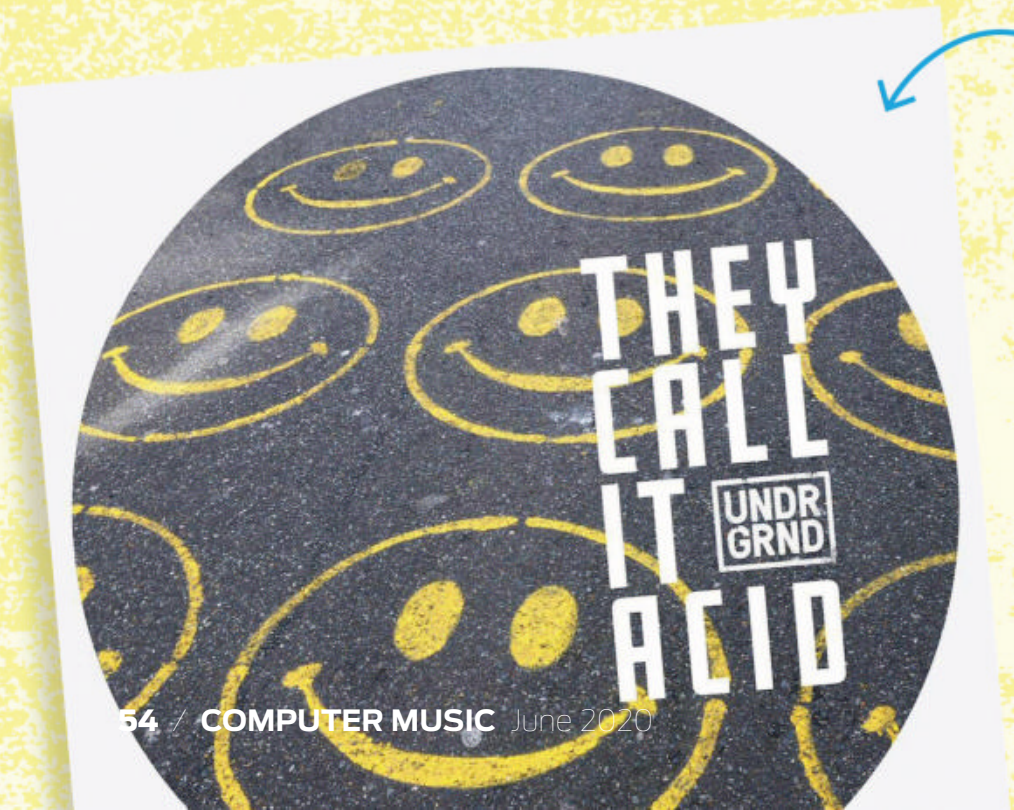
korg.com

E-mu in software

from £free

E-mu were one company that had the hardware sound module market sewn up in the 90s. Sadly they just seem to make headphones now, but there are several ways to get the E-mu sound in software including the E-mu Systems Proteus VX sample player, Luxonix Ravity Windows ROMpler and Digital Sound Factory E-mu Proteus Pack, and all pretty cheap (or free) options too!
digitalsoundfactory.com, sonic-cat.com



UNDRGRND SOUNDS

They Call It Acid

£34.95

Of course, there are loads of other sample options but this one especially caught our eye. Described as a "trippy, euphoric and mind-altering collection of loops and samples" this collection has plenty of original beats, basslines and loops to help produce a variety of 90s genres, not 'just' acid house, although you will find an entire folder dedicated to the sound of the 303. You could also use our cover samples this month too, of course...
undrgrndsounds.com

Roland Cloud
£18.95/month 8/10 cm280

Korg's Triton gives you a sound-packed softsynth, but how about every Roland synth from that period and earlier? The company's Cloud has everything from 808s and 909s through to more 'modern' digital JVs and XVs. We said: "£18.95 a month (with the option to keep one instrument for every year you subscribe) might seem a small price to pay for such impressive portions of Roland nostalgia."
rolandcloud.com

Loopmasters Loopcloud
£free to £17.99 9/10 cm275

Loopcloud gives you access to Loopmasters' massive sample collection and allows you to search by, and home in on, all those 90s collections, should you wish. It even matches samples together by pitch and tempo and there is full-on editing, recording and even instruments, making this more like a DAW with each update. "Loopcloud continues to innovate," we concluded.
loopcloud.com

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We said we'd give you modern equivalents, but when you can pick up an original Korg Prophecy for £200, a Roland JV-1080 for £150 and an E-mu sampler for £300, why would you not? Well, for the very simple reason that you can do it all in software, that's why! Now wipe those rose-tinted spectacles clean...
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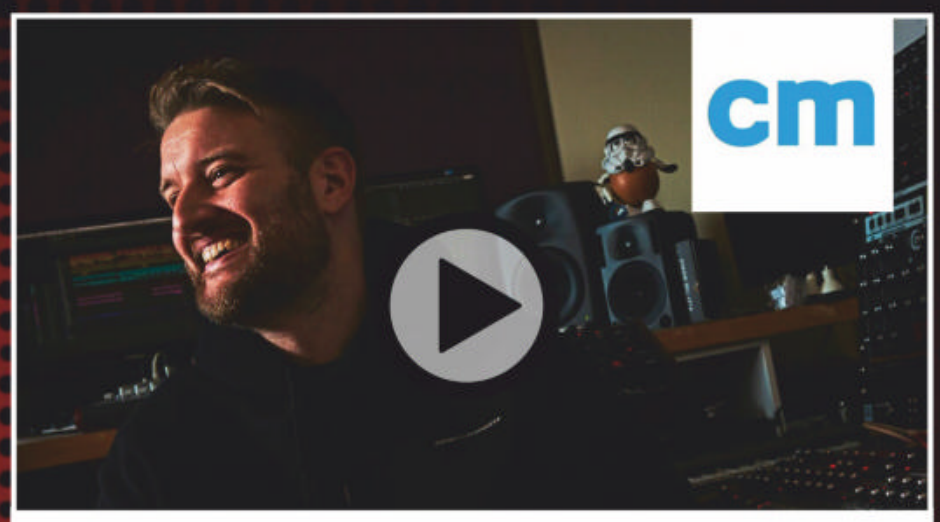

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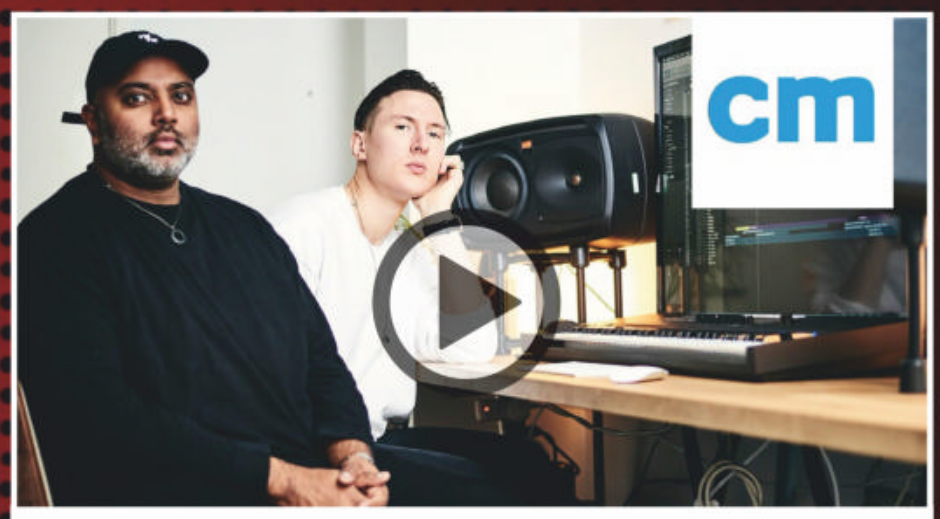

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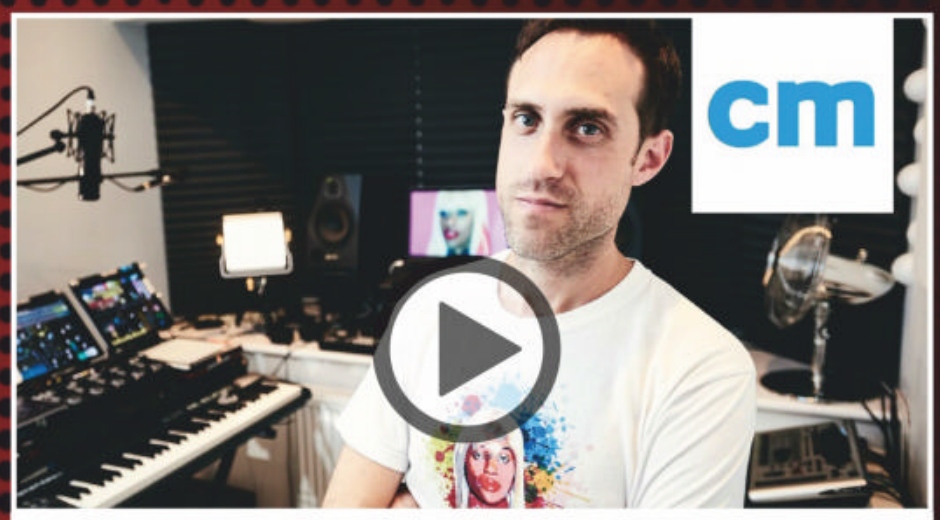

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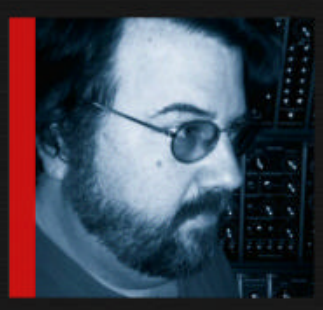
Easy Guide
Songwriting
with *Dave Clews*

60 Breaking the loop

The biggest question of DAW production answered: how to break out of that 8-bar loop!



Modular Masterclass
Monthly synth work
with *Scot Solida*

62 Oscillators Part 2

Scot continues his tour of the modular synth with not one but two oscillator tutorials

#2

Breaking the loop

This month, Dave shares some tips on how to shake off 'cycle syndrome' and turn a 4 or 8-bar loop into a finished track

> How often have you sat down at your studio desk to start a new track, come up with a great 4 or 8-bar loop and then... got completely stuck as to where to go next?

It happens a lot more often than you'd think, with that initial burst of creativity lasting only for as long as it takes you to complete one short section of your song. It's easy to get so lost in the groove as your initial idea cycles round endlessly, that your brain then flat-out refuses to entertain the concept that it might turn into anything else!

So in this month's songwriting process column, we thought we'd turn the spotlight on this common issue, hopefully giving you a few useful tools to get things moving again next time you find yourself casting around for ideas to finish your track.

In last month's issue, we looked at ideas for coming up with melodies over a particular set of chords, winding up with three or four different ideas that might potentially work for separate song sections.

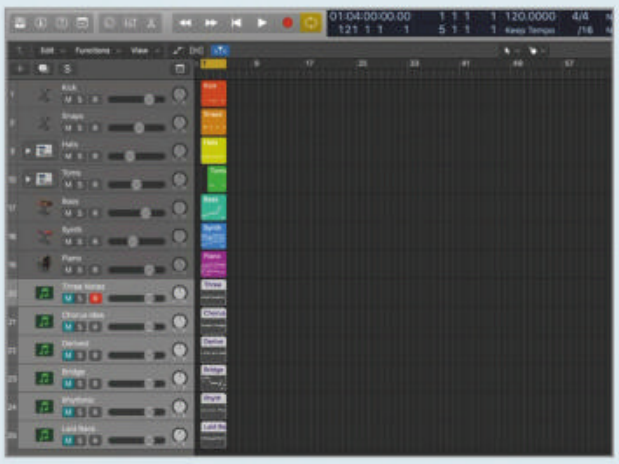
To follow on, therefore, we're going to demonstrate a few methods whereby these disparate melody ideas can be arranged into a full song, giving you the impetus you need to actually finish the track off properly.

So let's dive in and see if we can come to some sort of arrangement!

>Step by step

Turning a 4-bar loop into a complete song

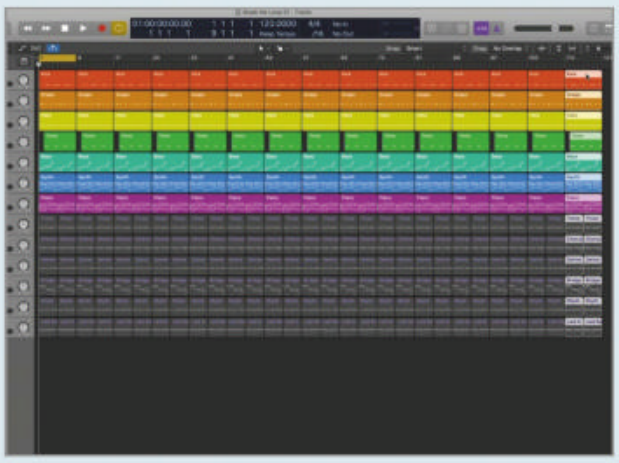
1 > At the end of last month's tutorial, we finished up with a four-bar loop containing drums, bass, synth and piano, plus several different melody ideas that we picked out with a piano sound. Each melody has its own track at the bottom of the screen, and these are all muted for the time being, leaving just the backing track.



2 > It may sound obvious, but if you've been working on your looped section for a while, the chances are that it's filling your screen, so the first thing to do is zoom out. This will refresh your perspective and let you look at your project as a whole, rather than just those few bars.

3 > Next step is to double the looped section, including the muted melody regions, out to eight bars in length. There are a few ways to achieve this, either with your DAW's repeat/duplicate commands, by copying and pasting, or by Option (Alt)-dragging the parts into their new positions to copy them.

4 > Use your DAW's join/glue tool to join the four-bar sections together into eight-bar chunks. This is because with your song fully zoomed out, eight-bar regions are much easier to work with and look less confusing than loads of tiny four-bar regions scattered about.



5 > Here, we've repeated the section out again to a length of four minutes – about average for the kind of pop song we're looking to create. At our tempo of 120bpm, this creates a 120-bar sonic block of stone that you can chip away at like a sculptor, muting or deleting regions until your song takes on a bit more of a discernible shape.

6 > Now we can start defining our song sections, where they'll be placed and how long they'll last for. Let's say that we want an eight-bar intro section to kick off our song. Get your DAW's mute tool ready – we're going to be needing it! Use it to mute all the regions in the first 16 bars.

PRO TIPS

USE AN ARRANGE TRACK

Try making use of any nonlinear compositional tools your DAW might have. If you're an Ableton Live user, for instance, you can fill a session with clips in Session view, trigger them in a sequence and record a live performance straight into Arrangement view, great for spontaneous arrangements that can be tweaked after the event. Cubase and Logic Pro X both have special Arrangement tracks to swap sections around and experiment with, while Reason has the Blocks system. These all allow you to build song sections on the timeline, then specify a non-linear order in which they're played back as a song sequence – such as intro, chorus, verse, verse, pre-chorus, chorus, intro, for instance. This way, you can try out virtual arrangements, without any copying, pasting or shuffling around, before committing to a final version.

FINE TUNING

Once you've emerged out of that eight-bar tunnel vision and got a more structured framework to build on, you can really focus in on the details of your arrangement by adding breakdowns, transitions, builds, drops and random one-bar drop-outs. With your melody, go beyond the scale tones and chuck in a chromatic note – one that's not in the scale – here and there. For variety, make the chords in the verse and chorus parts slightly different, or use a separate sound for each part. Make a breakdown. Swap whole sections around. Randomly remove some – or even all – of the drums in a section. Add a rap verse. The more you add to the arrangement, the more inspired you'll be to finish it. Once you've broken free of that eight-bar loop and have a screenful of song, the only limit now is your imagination. Go for it!

Dave Clews

In a studio career spanning more than 25 years, Dave has engineered, programmed and played keyboards on records for a string of artists including George Michael, Kylie Minogue, Tina Turner and Estelle. These days, he writes articles for cm and other magazines and websites, and is the author of Avid Pro Tools Basics. Follow him on Instagram @electricdave67

7 > Unmute parts one at a time with the first eight bars looping until you hit upon a part (or combination of parts) that sounds good on its own – we reckon the synth and the toms work well together to begin with. For the second eight bars, we add the kick and the fingersnaps to create a verse section.

8 > The link section between the verse and chorus is known either as the bridge or the pre-chorus, depending on which part of the world you're from. To give the chorus plenty of impact when it starts to come in, we'll strip this part back to the synth, toms and snaps by removing the kick.

9 > For the chorus or ('drop') section, we're going all-in with the kick, snare, hats, bass and synth, with the piano part introduced in the tag section that comes after the chorus. So we construct a 16-bar chorus section that includes all the elements we need, and add the piano part in for eight bars afterwards to make the tag.

10 > Time to make some choices from our muted melody tracks. For each song section up to this point, audition melodies one at a time until you find one that suits that part of the song, then move onto the next section, building up until the end of the tag. You should end up with something that flows nicely throughout.

11 > After the tag, chip away more parts for a duplicate of the whole verse, bridge and chorus sections. Most songs usually have some sort of breakdown or change after chorus 2, known either as the middle-8 or bridge. We'll make ours an eight-bar section of kick, fingersnaps and synth, with a so-far unused melody idea.

12 > Following our middle-8, we'll use a couple of repeats of the 16-bar chorus part again to make an outro. We have a spare melody part left over that we've not used – one we derived from the upper notes of the synth chords last month – so we give this a new sound to make an extra synth part just for the outro... cm

#03

Oscillations, pt 2

In this third instalment of our synthesis tutorials, we take a harder look at the oscillator and make not one, but two new patches

> Last month, we looked at the basic functions you'd find in an oscillator: the signals they generate, how they can be manipulated and modulated and what the signal looks like.

This month we'll go back in and look at oscillator sync. Not to be confused with, say, MIDI or clock sync, oscillator sync is a function whereby one oscillator's waveform cycle is forced to reset to that of an incoming oscillator's waveform. Consider that a waveform is periodic, and that the period determines the frequency. Two wave cycles with different periods won't match up, so forcing one to 'restart' whenever the master completes its cycle produces an irregular waveform that can be sonically interesting and more complex than either waveform on its own. Even more so when you add modulation to the mix – see tutorial 1, below.

In tutorial 2, we'll go on a more experimental foray into an esoteric oscillation source: the sequencer. Yes, you read that right – we're using a sequencer as an oscillator.

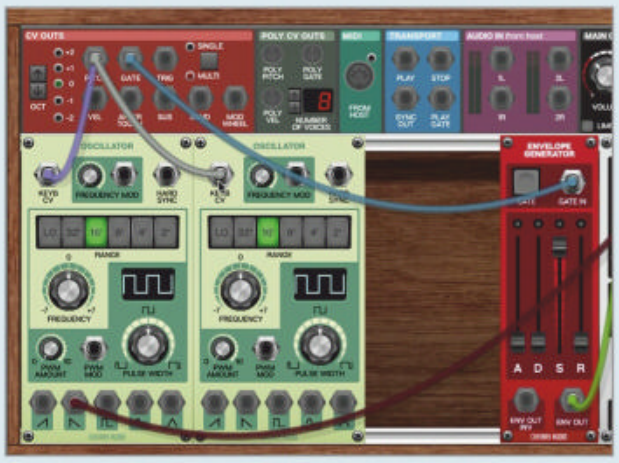
Modular synth heads are well aware that – like that of certain LFOs – the rate of some sequencers can be be cranked up into audio ranges. Therefore their output can be tapped to provide an audio signal, with the various step settings determining the final wave shape. A little esoteric? Maybe. Interesting and inspiring? Most definitely!

>Step by step

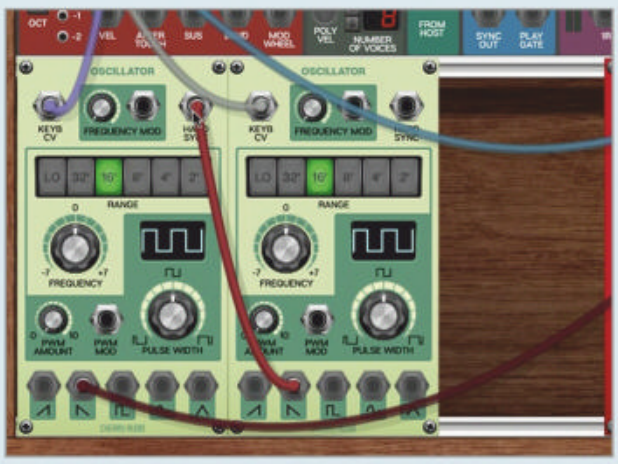
1. Creating a classic 'oscillator sync' sound

1 > In this first brief walkthrough, we'll be using Voltage Modular Nucleus to create a classic oscillator sync sound of the sort made famous by bands like The Cars. As ever, we'll begin by clicking that New button in the upper-left to start with a clean slate. To control volume, we add an Amplifier module, patching its Output into the 1L(M) jack in the Main Outs panel.

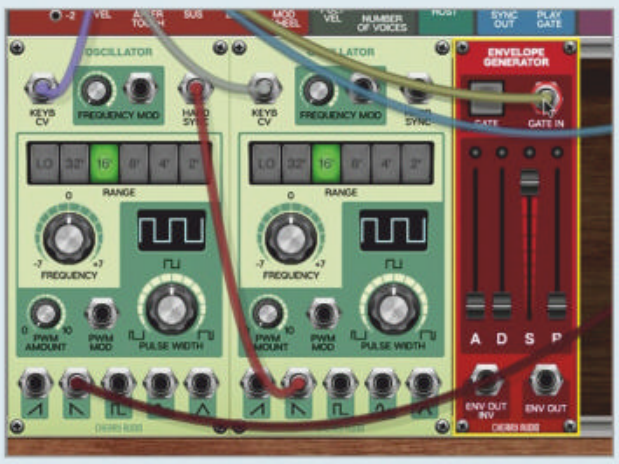
2 > We're going to need an Envelope Generator to control the Amplifier, so add one and route its Env Out jack to the Amplifier's CV In. Go to the CV Outs panel and run a cable from its Gate jack down to the Envelope's Gate In to provide MIDI control. Now, it's time to add an Oscillator, routing its Sawtooth output to the Amplifier's Input.



3 > Add a second Oscillator, but don't connect it to the Amplifier module's input. Back in the CV Outs panel, run a cable from its Pitch jack down to both Oscillators' Keyb CV jacks for MIDI control over their pitch. At this point, you should be able to 'play' the first Oscillator, and hear its sawtooth waveform.



4 > Now, let's get our second Oscillator in on the action. Run a cable from the second Oscillator's Sawtooth output up to the first Oscillator's Hard Sync input. This will lock the first Oscillator's waveform cycle to reset every time the second Oscillator completes a cycle. Don't worry if you don't understand how it works – you'll know it when you hear it!



5 > At the moment, our second Oscillator is having no effect at all on the sound, though it would do if you 'played' its Frequency knob. However, rather than doing that, we're going to employ another Envelope Generator. Add one and run a cable to its Gate In jack from the CV Outs' Gate jack.

6 > Route the new Envelope's Env Out jack to the 1st (audible) Osc's Frequency Mod jack and crank the adjacent knob to 73%. Next, set the new Envelope's A(ttack) slider to around 30ms, and its D(ecay) to around 6000. Normally, this causes a pitch shift over time, but instead gives a characteristic timbral shift as Osc 1 'resets' to the frequency of Osc 2.

PRO TIPS

ALTERNATIVE OSCILLATIONS

The sequencer aside, there are a few more sound sources to be found among a synth's circuits – virtual or otherwise. For instance, last month, we discussed using our Oscillator module as an LFO by reducing its frequency. The same trick can be applied in reverse – cranking an LFO's frequency up into the audio range. Mind you, if the LFO lacks the ability to modulate its rate, you'll be stuck with a fixed frequency tone. These can, however, be useful. Additionally, many filters can self-oscillate. This is achieved by cranking up the resonance (also called Q or Emphasis), and using the filter's Cutoff knob/slider to control the pitch of the resultant waveforms (invariably a sine wave). If you're lucky, the filter in question can be modulated and scaled by incoming keyboard voltages, resulting in a playable – if simple – sound. We should also mention the obvious alternate sound source: the humble noise generator. That deserves a full tutorial of its own!

HOW LOW CAN YOU GO, REDUX

Last issue, we used an Oscillator module as a modulation source, cranking its frequency down to the sub-audible range. This had the effect of transforming our seemingly simple Oscillator into a super-powered LFO, or low-frequency oscillator. Used in this way, the Oscillator module is far more flexible and powerful than the dedicated Mini LFO module that ships with Voltage Modular Nucleus. One thing that makes the Oscillator module so powerful is, as earlier, oscillator sync. Used in the audio range, this is the source of a familiar sound, but when using an osc in the sub-audio range, it becomes a powerful tool for synchronisation. You can, say, use it to sync multiple sequencers and LFOs to the same clock source – the rate of which itself can be modulated by some other incoming signal. Using it thusly, any slaved LFOs, sequencers, and more can be freed from the tyranny of strict tempo, giving a more human feel. With attention to programming, it can even suggest swing.

Scot Solida

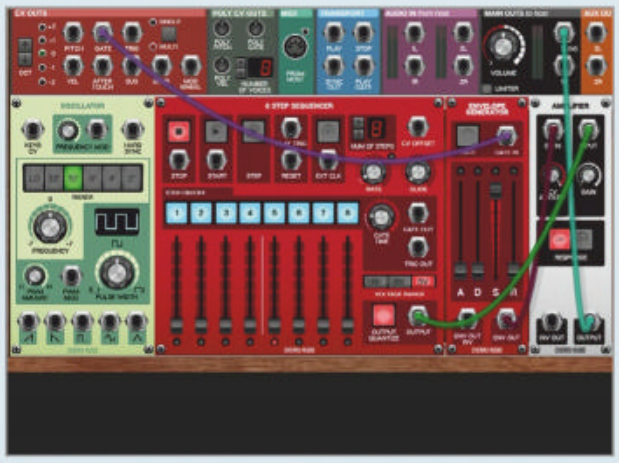
Scot is a synthesist, sound designer and audio engineer of international repute, and has provided factory presets for many of the music software industry's most acclaimed synths, samplers and drum machines, not to mention plugins from the cm Studio. On rare occasions, he manages to find time to make records for Beta-lactam Ring Records under the name Christus and the Cosmonaughts.

>Step by step

2. Using a sequencer module as an oscillator

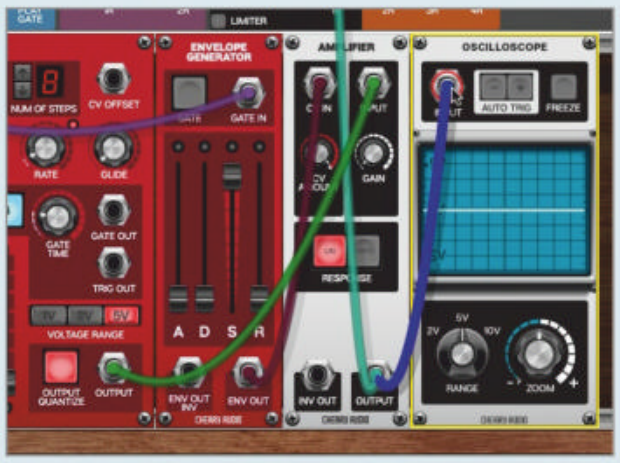
1 > Now for something a little unusual! In this tutorial, we'll be calling upon a Sequencer module to act as an oscillator. As you've probably already guessed, it all starts when you hit that New button in the upper-left. There's now an empty rack into which you'll install an Amplifier module, the Output of which will be patched to the Main Outs' 1L(M) jack.

2 > As is often the case, you'll want an Envelope Generator. Add one and then go to the CV Outs panel and patch its Gate jack into the Envelope's Gate In patch point. Route the Envelope's Env Out to the Amplifier's CV In. Now, at last, add an Eight-Step Sequencer module.



3 > Route the Sequencer's Output to the Amplifier's Input. Most sequencer-based patches use a sequencer to control the pitch of one or more oscs. This patch does it the other way round, using an osc to control the pitch of the Sequencer's output. You'll see what we mean in a moment. For now, add an Osc to the left of the Sequencer module.

4 > Run a cable from the Pitch jack in the CV Outs panel down to the Osc's Keyb CV. Next, patch that Osc's Sawtooth output to the Sequencer's Ext Clk jack and click the Ext button to lash the Sequencer's clock to the Oscillator's frequency. Go ahead and click Play on the sequencer to get it started.



5 > You won't hear anything yet. For that, you'll need to create a waveform using the Sequencer's sliders. For the moment, push the first four all the way up. Now, if you play some notes from your keyboard controller, you should hear something like a square wave. Add an Oscilloscope module and connect the Amplifier's Output to the Oscilloscope's Input.

6 > You might notice that the sound sort of "falls apart" at some frequencies. You can get slightly different results by using the Oscillator's Pulse Wave to drive the Sequencer. Try setting its width to 95%. Now, looking at the 'Scope, experiment with the Sequencer's sliders to produce different shapes. cm

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cm/reviews

The latest computer music gear tested and rated!

66 EAST WEST HOLLYWOOD SINGERS

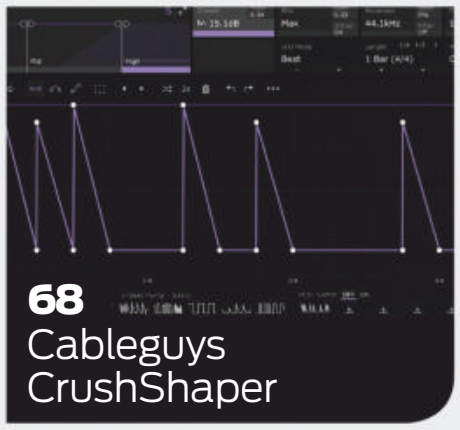
Need some of the best vocalists in the business on your tracks? Here's how to add a bit of Hollywood glamour...

Our promise

We bring you honest, unbiased appraisals of the latest computer music products. Our experts apply the same stringent testing methods to all gear, no matter how much hype or expectation surrounds it.

What the ratings mean

- **1-4** A seriously flawed product that should be avoided
- **5** This product's problems outweigh its merits
- **6** A decent product that's only held back by a few flaws
- **7** Solid. Well worth considering
- **8** Very good. A well-conceived and executed product
- **9** Excellent. First-rate and among the best you can buy
- **10** Exceptional. It just doesn't get any better than this!



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Computer Music Innovation Award — Awarded to products that challenge existing ideas and do something entirely new

Computer Music Performance Award — A product has to really impress us with its functionality and features to win this one

Computer Music Value Award — If the product exceeds expectations for its price, it will receive this gong

Computer Music Editor's Choice Award — In the opinion of the Editor, the best product reviewed in the magazine this month

EastWest / Quantum Leap Hollywood Backup Singers $299

PC MAC

Need backing vocals and need them fast? Then this backing vocal focused pack from EastWest / Quantum Leap could be for you

> Building complex vocal arrangements is an enormously rewarding process. However, recording, editing and compiling the required vocal sessions can be an arduous and time-consuming task. Thankfully, sampling giants EastWest/Quantum Leap and their resident production gurus Doug Rogers and Nick Phoenix feel your pain, and to that end have over the years built a number of libraries tailored precisely for this task. Award-winning packages such as Symphonic Choirs and Hollywood Choirs have raised the bar for large group and choir sounds. Meanwhile the 'Voices' series provide solo or harmony voices with more targeted styles. Their latest endeavour, Hollywood Backup Singers, sees the return of CC White, who featured on last year's Voices Of Soul, and she is joined by Durga and Lorelei McBroom. All three are experienced performers with credits that include Pink Floyd, Lenny Kravitz and Jason Mraz.

Hollywood Backup Singers was recorded in Studio 3 at EastWest's Sunset Boulevard base by Mark 'Spike' Stent and Chris Kahn using the Trident A Range desk. A vast array of classic mics were used and the vocals were captured from three positions: Close, Rear and Room. The library uses EastWest's Play instrument (AU, AAX, VST, Standalone) and supports Windows 7 or later and Mac OS X 10.7 or later, and is available as an individual purchase or as part of EW's Composer Cloud Subscription.

Core sounds

Hollywood Backup Singers has a 9GB library that comprises 87 individual patches (Instruments). In addition to vowel and consonant patches, which were recorded in unison by all three singers, there are 588 recorded solo adlib phrases and 222 categorised preset WordBuilder phrases. Core instrument patches are categorised by type – Vowels, Consonants and Solo Phrases – so if you're after specific sounds such as 'Ah' or 'Mm' mapped across the keyboard, that's where you'll find them. There are 13 'pitched' consonant patches where the consonants are sung and mapped across the keyboard. There is also one 'unpitched' patch where individual sounds such as 'k' and 'ch' are mapped one per key. Vowel and consonant patches include two or three dynamic layers, controlled using the Modwheel (CC1), which is handy, while MIDI CC11 (Expression) controls volume.

The 12 Solo Phrases Instruments are grouped by root note and the modwheel switches between full phrase playback and the second

> "WordBuilder is a powerful too that can create genuinely usable bespoke backing vocals"

half of the phrase only. This works really well when jamming on the keyboard and trying different phrases. The phrases themselves are lyric-free (ah, oo, yay and so on) and are soulful in style.

Finally, you have both Combo and Keyswitch patches. Combo patches combine two sounds in one patch and the modwheel either switches between them or blends between them (the latter are in the Xfde folder). Keyswitch patches group multiple sample sets together into more complex instruments. In the case of consonants and vowels the keyswitches simply change which sound is mapped across the keyboard. For solo phrases, the keyswitches select different banks of phrases. Throughout the patches there are also examples that have been processed via a Leslie speaker, which adds a panning chorus effect.

Digging In

Hollywood Backup Singers is pretty easy to use and existing EW users will recognise the patch system and use of MIDI CCs to aid programming. What's more the three mic positions – Close, Rear and Room – provide considerable tonal flexibility. The close mic setting has a bright upfront sound and narrow stereo image, while the Rear option provides a dark, distant and very wide effect. The Room option, captured using three Neumann M50s in a Decca tree and a spaced pair of U67s, has a lovely rich stereo sound. You can of course blend all three to taste or enhance things with Play's excellent convolution Reverb. Meanwhile, on the mixer page, there's further Instrument-specific effects including amp simulation, multiband dynamics, delay, ADT doubler and an excellent SSL channel strip and bus compressor.

WordBuilder (see box out) is without a doubt one of the most powerful and attractive aspects of EW's vocal libraries. Nevertheless, its success rests upon communicating how you want the words to sound, and digging into the Phonetic and Votox modes really helps. A good starting point is to load one of the preset phrases, looking at how the various words are achieved. Beyond this, other tricks include repeating the vowel sound so that you can play mid-word note changes properly, or adjusting the consonant lengths so that words transition from one to the next properly. It can be fiddly at times, but is still achievable if you think about the vocal phrasing rather than just the words. The results don't sound as human as the specially recorded solo adlibs; however, when used as backing vocals, which is the remit of the instrument, they can sound very good.

The Mixer page includes an extremely impressive selection of processing

Verdict

Overall, Hollywood Backup Singers is an excellent female backing vocal toolbox for pop, R&B and lighter rock tracks. It has lots of depth and via WordBuilder can create genuinely usable bespoke backing vocals. It's equally capable of delivering gorgeous pad style Ahs, Oos and beyond. And with well-programmed patches and a choice of mic positions, it sounds excellent and is great fun to use. **cm**

Web soundsonline.com
Info Included in Composer Cloud subscription

WordBuilder allows you to construct words and phrases from their component sounds

WordBuilder

WordBuilder's phrase generator interface is incorporated in Play and with the corresponding patch (WB Multi) loaded, the WordBuilder button in the top left activates the window. The interface is split between word-specifying aspects at the top and a time editor at the bottom. WordBuilder uses three concurrent word modes, English, Phonetic and their own Votox alphabet. Once you type in a word or phrase, or load one from the library, switching the Text Editor mode lets you adjust things in different ways, creating vocal sounds that may not conform to regular words. The same system allows you to create and save words that aren't in the dictionary, or create custom pronunciations of existing words.

In use, each word responds to one MIDI note message. With further spaces between letters in the Text Editor, sounds can also be triggered in a more piecemeal way – handy for specifying timing. Words highlighted in the Text Editor can then be further modified using the Letter and Syllable options and in the Time Editor at the bottom, where overall expression can also be finessed using MIDI CCs, and MIDI 'Note Off' timing adjusted. All told WordBuilder is a powerful tool with a correspondingly steep learning curve that repays the time you invest in it.

Alternatively

Soundiron Voices of Gaia
$249
A massive selection of solo voices including vowel and consonant patches

EastWest/Quantum Leap Voices Of Soul
cm277 » 9/10 » $199
An excellent collection of soulful sounds and recorded phrases

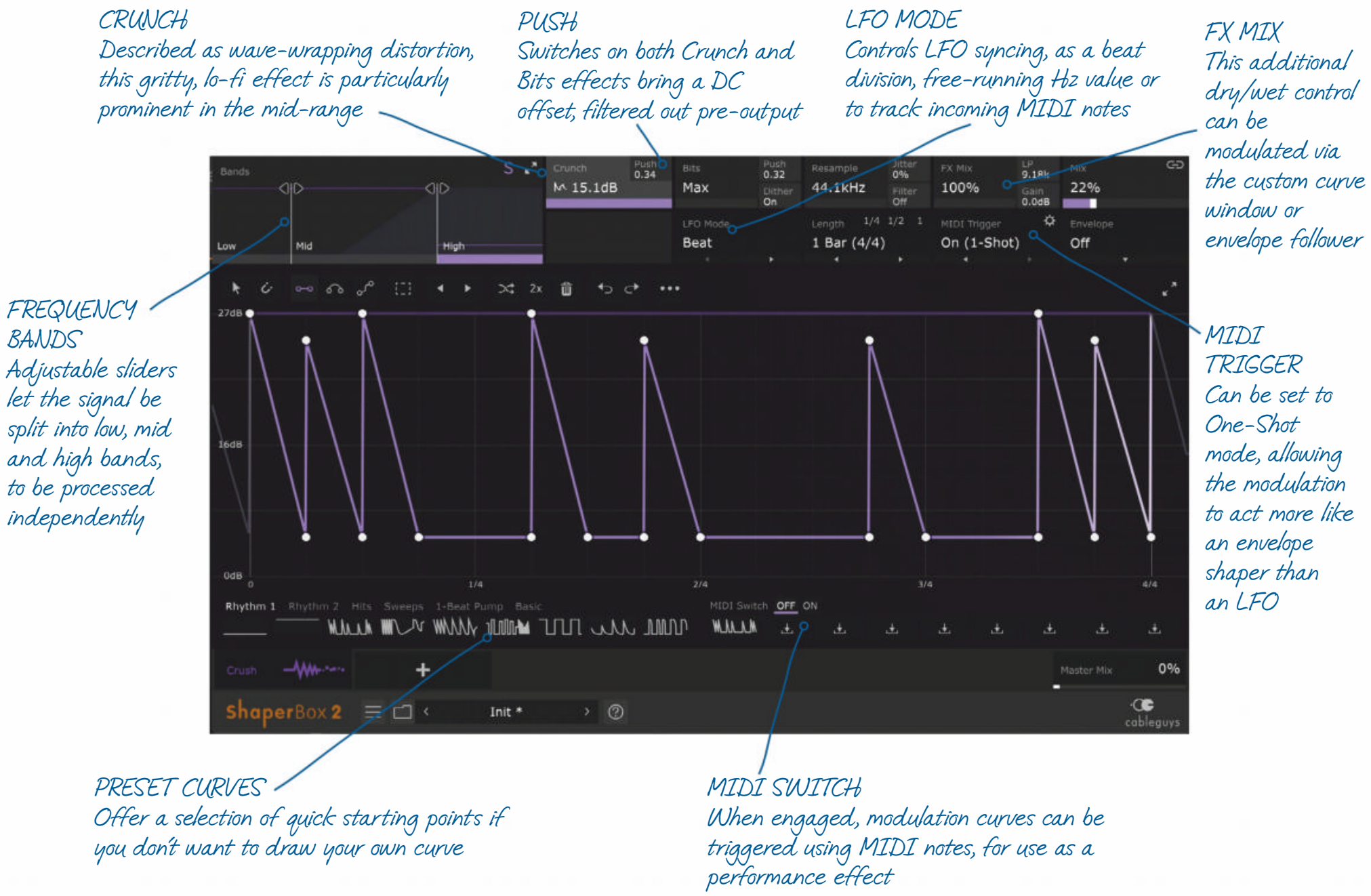
Verdict

For Excellent core sounds
Good patches for quick programming
Word/phrase creation in WordBuilder
Three different mic positions
Good onboard processing

Against WordBuilder requires mastery

EastWest/Quantum Leap Hollywood Backup Singers is a flexible and great-sounding sample instrument that's ideal for pop, R&B and lighter rock applications

9/10



CableGuys

PC MAC

CrushShaper €39/$44

CableGuys add a bitcrush effect to their ShaperBox collection. So what has this crusher got to offer that others don't?

> CableGuys updated their modulation-focussed multieffect tool ShaperBox towards the end of last year, and now the developers are adding a new processor into the mix. CrushShaper is a bitcrusher designed to make use of the same customisable modulation tools as the rest of the 'Shaper' family. It runs within ShaperBox 2 and comes as part of the full ShaperBox bundle, but it's also available as a standalone purchase.

Seasoned producers will, no doubt, be fully familiar with the general principles of bitcrushers. These digital distortion effects reduce the resolution and bandwidth of the target audio to achieve effects ranging from a subtle lo-fi quality to full-on destruction. It's a common effect, achievable via the stock plugins in most DAWs, so what does CableGuys' take have to offer that others don't?

CrushShaper is housed inside the same ShaperBox container as its sibling effects and, as with those tools, the emphasis here is on modulation as much as it is the effect itself. The UI's focal point is the central grid in which users can shape their own custom LFO/envelope used to control the depth of the effect. ShaperBox itself offers an assortment of tools to make this possible. There are pens, curve generators and a selection of editing tools that allow for deep, yet easy refinement of the automation curve.

However, there is also a selection of pre-designed curves that can act as a ready source of starting points. There's plenty of control over the speed at which CrushShaper cycles through its modulation curves too. These can be sync'd to the project tempo at a host of different beat-divisions, set at a free-running Hz rate or set to track the pitch of incoming MIDI notes.

Crushingly simple

There are four different elements that can be modulated within CrushShaper. The first of these is a parameter labeled Crunch, which CableGuys describe as 'wave-wrapping distortion' recreating the overflow effect of early digital gear. In practice this creates a digital 'clipping'-like distortion effect that is especially prevalent in the mid-range. There is a parameter labeled Push here too, which introduces a DC offset (filtered out before the output) for asymmetrical distortion.

The next element that can be modulated is Bits, which reduces the bitrate of the incoming audio from 16 down to 1-bit at its most extreme. Again, a Push parameter allows users to dial in a DC Offset here. There's also a simple on/off Dither switch for preserving the dynamic range of the original audio. Next to this is the Resample parameter, used for reducing the sample rate, and also controlled via a custom modulation curve. The range available here runs from 44.1kHz down to 8.82Hz. An adjustable Jitter parameter lets users add some unpredictability

> "CrushShaper is considerably more powerful than your average bitcrusher"

to the sample rate – replicating the unreliability of vintage digital gear – while an on/off low-pass filter can be used to reduce aliasing.

Better Shape up

The final element controllable via modulation curve is a global FX Mix (ie dry/wet) parameter. This is in addition to the standard non-modulation-controlled Mix parameter, as well as ShaperBox's overarching Master Mix control. While having three independent dry/wet parameters might seem like an odd case of overkill, it's actually very handy in practice. Having a separate modulation-controlled Mix function means you can sequence the depth of all bitcrusher elements together making it easy to, say, apply extreme distortion to certain beats in a drum loop, or have things fade in and out for a drifting, Boards Of Canada-like lo-fi effect. The addition of a separate static Mix means you can still have simple control over the wet/dry balance without needing to touch your carefully calibrated modulation. The FX Mix section also adds output gain and a low-pass for taming any harsh hi-frequencies. The Master Mix, finally, comes into play when more than one Shaper is being used within the plugin.

As with other ShaperBox devices, the flexibility of CrushShaper is expanded thanks to its ability to be applied separately across three frequency bands. As with sibling devices, these are set freely using a pair of slidable dividers, and, once designated, all parameters can be set and modulated separately for each of the low, mid and high bands.

All these factors combined make CrushShaper considerably more powerful than your average bitcrusher. The effect itself is, in most cases, one that can get old rather quickly – heavy-handed use of digital lo-fi can sound a tad naff, particularly when applied across multiple track elements. CrushShaper's ability to apply the effect precisely, and sparingly, makes it a much more nuanced and useful tool though. It's great for, for instance, adding subtle elements of lo-fi character to a synth part, or punching up certain hits in a beat pattern.

In all, it's a truly inspiring take on a common effect. Our only major criticism? We wish we could have a few extra distortion types to use with ShaperBox's sequencing tools. DriveShaper can't be too far behind, right? Come on CableGuys... **cm**

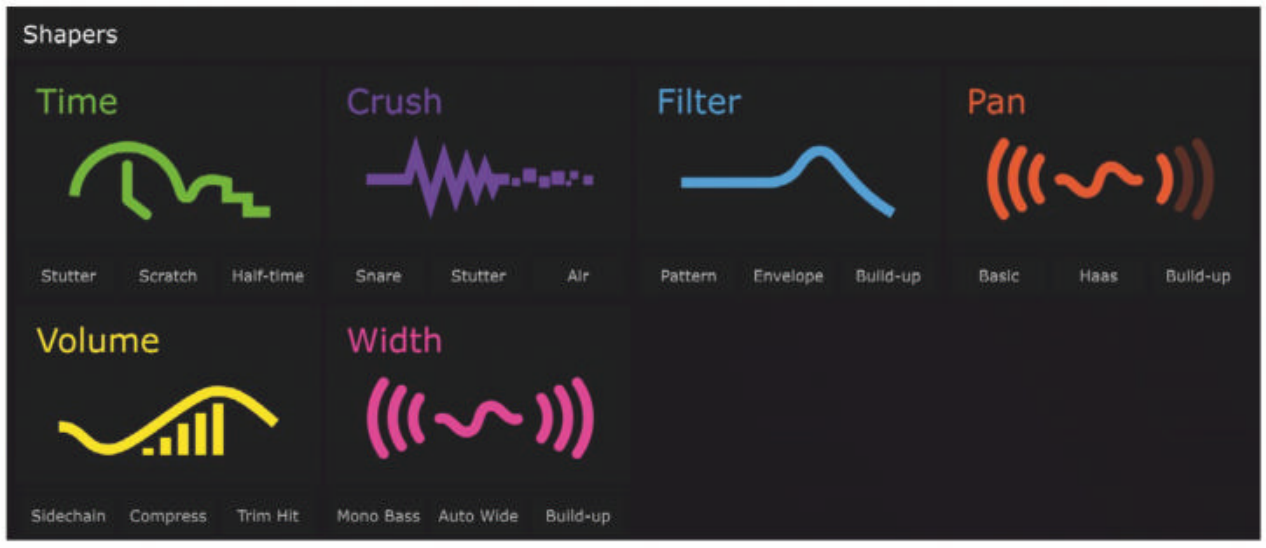
Web cableguys.com

ShaperBox's envelope follower can work in tandem with the custom LFO, for highly dynamic results

Track and trigger

ShaperBox 2 added envelope followers for several of its processors, and that feature is carried across to CrushShaper 2. This tracks incoming audio, either from the main input or a sidechain routing, in order to apply the selected effect depth in a dynamic manner. There are individual envelope followers for each of CrushShaper's four modulation-controlled parameters, each with attack, hold, release and threshold parameters for shaping the response. These can operate in a mixed manner with the custom LFOs too, allowing users to draw a modulation curve on the grid and then use an incoming audio signal to dictate the overall modulation depth. Envelope followers adhere to the effect's multiband structure too, so can operate separately for the low, high and mid bands.

Another winning feature of the ShaperBox design is the ability to trigger modulation curves via MIDI. Multiple custom modulation curves can be stored in the User Wave bar toward the bottom of the UI, allowing up to nine curves to be triggered using MIDI notes C# to A, with C used to restart the current curve. This is a great tool for using ShaperBox as a performance effect – especially cool for live jamming.



ShaperBox's opening window displays all available tools. Those not owned will run in demo mode

Alternatively

Softube OTO Biscuit 8-Bit
cm245 » 9/10 » $199
An emulation of the excellent, sequencer controlled hardware bitcrusher – a very creative effect

Native Instruments Crush Pack
cm261 » 9/10 » £59
A bargain bundle offering bitcrushing along with ring mod, overdrive and more

Verdict

For Subtle lo-fi to extreme destruction
Can be applied across three frequency bands independently
Drawing tools are easy to use

Against Stereo width or M/S control would be a nice touch

ShaperBox's customisation tools make this a more powerful and nuanced take on the bitcrusher than any rival on the market right now

9/10

Steinberg Cubasis Add-ons from $4.99

iOS

Cubasis for the iOS just gained a v3 update, with additional iPhone compatibility. But there are many more optional extras to be had...

> We recently looked at Steinberg's Cubasis 3.0 update and, one or two niggles aside with pinching and editing, concluded that it is still one of the best iOS DAWs around. It's also one that now runs with some ease on an iPhone, delivering one of the most pro DAW experiences out there, on a device that fits in your pocket. However, while reviewing the update we became very aware of a multitude of optional extras that Steinberg are punting in various parts of the software, so it's time to look at all of the various Cubasis options now available.

Not just Steinberg

There are several updates and options available, and not all of them produced by Steinberg. A Waves Plugin Bundle ($7.99 each or $19.99 for all three), that originally arrived with Cubasis 2.3, comprises the Waves L1 Ultramaximizer, AudioTrack and the Q10 Equalizer.

L1 Ultramaximizer is a slick plugin for mastering and features simple controls and options for Input, and can be very transparent in use. Q10 is a lovely multiband EQ that delivers a lot more precision than the Cubasis' own EQ, featuring, as it does, up to 10 bands of equalisation so you can get in there and really tweak on a surgical level. AudioTrack, meanwhile, is a full-on channel strip that offers a neat 21st century take on Cubasis' own Channel Strip. Where that features traditional 'knobs' for Gate, Compressor, Filter and Saturator, AudioTrack has a handy graphic 4-band EQ and simple gate and compressor with more up-to-date controls that each incorporate levels. You could probably get away with Cubasis' included outboard rather than purchase this one, but overall, the Waves Bundle still represents great value, especially for that prestigious Waves name, with the EQ and L1 delivering particularly pro results for an iOS device.

Steinberg's own

FX Pack 1 ($6.99) is Steinberg's bundle of six delays and reverbs, and features everything from the vintage-style Tape Delay to a couple of simple reverbs. The latter are surprisingly effective given their basic operation, while Tape Delay is the most fully-featured delay unit, with very useful Head controls and a Vintage dial for controlling flutter and colour. Again, this is a useful bundle, especially for the price.

FX Pack 2 ($6.99) is full of more creative, vintage effects including more obvious rotary and wah effects and less obvious, but no-less useful, TalkBox and Bit Reduction boxes, all of which are great for more dramatic effect layering. Many of these really can take your sound into some more unexpected arenas than FX Pack 1, if that's what you wish.

We cover the Arp add-on in the box below, so that just leaves Classic Machines ($6.99), which is 10 drum machines, based on classic beat boxes, each essentially a ROMpler playing back classic beats, with additional MIDI files and beat repeat note options. As with Arp, these really do add a great electronic edge to Cubasis, rounding it up nicely into a do-it-all DAW.

These are all worthy upgrades to Cubasis, especially if you want to take the DAW into more electronic directions, although the Waves Bundle is also an especially good pro buy. Get the lot, and you'll expand the iOS DAW's capabilities immensely, for an outlay of just over 40 bucks. **cm**

Web steinberg.net

Going EDM with Cubasis

Well, we admit that we hoped the Micrologue Arp ($4.99) add-on might be Steinberg's take on an ARP synth, but the 'Arp' here stands for 'arpeggiator', and very decent this one is too. Essentially it's a mini 16-part arpeggiator which you can apply to any preset sound to create instant electronic melodies and patterns for that *Stranger Things* vibe. While the device itself is very hands-on and easy to get to grips with – you can adjust pitches of the 16 parts with your fingers, choose from nine patters, select triggers, keys, tempos and scales, along with useful dials for Swing and Gate Scale – it might be the Arp Factory Presets folder that you visit first. This is jam-packed with arpeggiations that cover different sounds, different timings and feels, and really does give a great taster of what this new device adds to Cubasis. The bottom line is that it turns Cubasis into an electronic marvel, so is well worth the small outlay, especially if EDM is your thing.

Alternatively

Fabfilter iOS plugins
cm278 » 10/10 » £29–£39 each
Expensive, yes, but just about the best iOS effects out there

Georgi Georgiev Vatanator
$7.99
Not tested, but this iOS drum machine has 140 presets and emulates a lot of vintage hardware

Verdict

For Good value updates
The Waves Bundle has lots of pro sheen
The Arp is a great and easy EDM update
And the drums add needed electro beats

Against Some of the UIs are basic
Some effects already in Cubasis

Some great bundled options take Cubasis into very different sonic directions – making it one flexible iOS DAW

8/10

Audient EVO 4 £99

PC MAC

COMPUTER music VALUE Award

Audient might have a history of big mixing desks, but they now also have one of the most compact interfaces available. Is it EVO so good?

> Audient made their name with huge mixing desks, which found their way into many high-end recording studios, but more recently have been gaining a great reputation for their small-to-medium sized interfaces – the ID range. These utilise some of the technology from those big desks – notably the ASP8024 preamp – for their high quality sound. At this year's NAMM show Audient announced the EVO range of interfaces which are not designed to replace the ID range, but more to be a completely new and compact interface solution. Audient ask (rather than claim): is this 'the world's smartest audio interface?'. Maybe we can answer that for them...

EVO more

We have the 4 in on test here – the larger 8 (which doubles the inputs and outputs to four each) is currently streeting for another 60 quid. Those connections aside, they look to be pretty similar concepts, that is having 'one focus in mind, to make recording easy!'. And on the face of it, that claim looks correct as there's nothing here to complicate issues. There are two combi mic/line inputs around the back of EVO 4, and one instrument level input at the front for connecting guitar or bass (which then overrides the first input around the back). Two speaker outs around the back complete the connections and a central main dial controls the level of that output plus a number of other levels determined largely by which buttons on the top of the panel you press, these being 1 and 2 (for the input levels), and output (bottom right) plus a final button that means the dial adjusts the mix between the input and DAW. Using the headphone socket means the main dial controls this level.

Slightly unusually in this plug 'n' play world is the need to download the latest driver and software which allows you to update the firmware (required for the test) which after a few rounds of LED blinking took less than a minute.

Logic then picked the interface up straight away for some very crisp playback (indeed it is comparable with the ID44 that we also have in the studio). We also tested the unit with an optional camera connection kit using Cubasis on an iPad for similarly crystal clear results. Input recording is also exemplary, helped a little with a Smart Gain feature that helps you set levels, although to be fair you don't really need it as such (see below for more on this). More of a help is the Monitor Mix switch that allows you to easily blend your input signal with your DAW output so you can play along and record with your songs (made all the more enjoyable with near zero latency).

The one-dial-fits-all solution is beautifully implemented and clearly designed from the ground up to help make EVO a clever, compact desktop solution. We're not quite sure about the box design, though. We have our interfaces set fairly far back on our desks to keep wiring at bay, so the dial and surrounding info is lost because it's facing upwards. A more angled top would have suited us more, but then the ID range never had this so it's curious as to why EVO brings this to our attention!

You can pretty much forget any criticism when you look at the price and hear the results, though. Less than £100 for an Audient interface is great value, and for one of the simplest yet most prevalent of recording situations this is one of the simplest – and, as they say, cleverest – solutions we've come across. **cm**

Web audient.com

Smartgain Mode

Out of the Box EVO comes with enough instructions to get you going – just a small piece of paper, really, as it's that easy. Much of it is dedicated to the Smartgain feature which keeps your recording signal levels in check so that you don't end up recording distorted audio. (You really don't want to do this as there is very little you can do about it later.)

Smartgain is implemented by pressing the green button on the top of the unit. Do this and then it flashes, awaiting your choice of input to measure the input signal. Choose either 1 or 2 and you're ready to go.

Pressing Smartgain again then starts the process and the green button starts flashing as it 'listens' to the input source. Now you play your input instrument or start singing and Smartgain sets a decent input level to avoid said distortion. It's a clever enough feature and gives you decent results but remember to use your eyes to see signals go into the red and, more importantly, your ears...

Alternatively

SSL 2
cm281 » 9/10 » £179
More robust, bigger and expensive, but with an SSL 'sound'

Focusrite Scarlett 2i2
£120
Almost identical specs, bar an Air button for an extra top-end sheen (and an extra 20 quid)

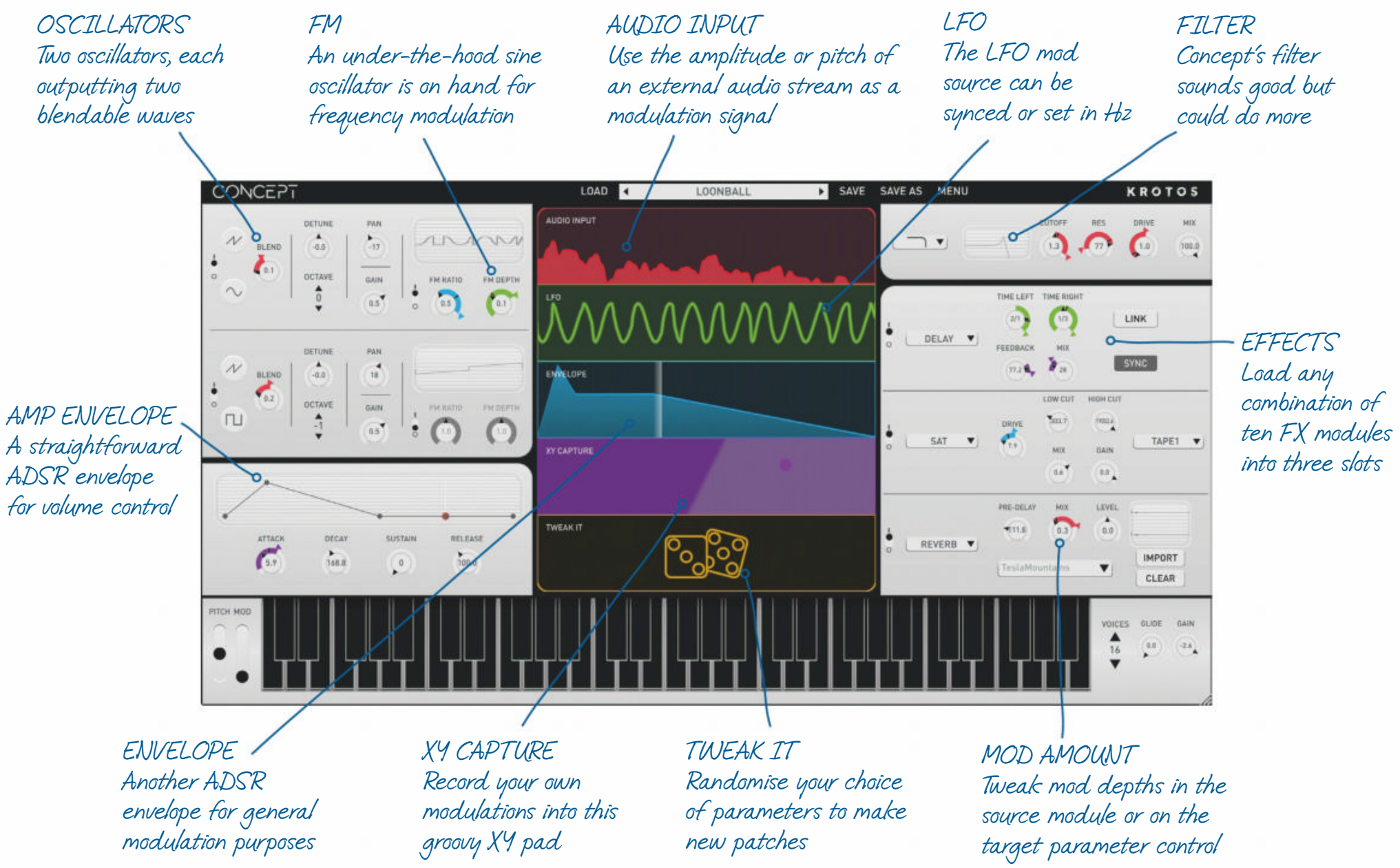
Verdict

For Great, clean sound
The one-dial-fits-all fix works a treat
Like the Monitor Mix solution too
Robust and solid build

Against An angled front would have suited us better

We're seeing bigger recording names on cheaper and cheaper interfaces, and Audient's is a great entry to the market

9/10



Krotos Audio Concept £119 PC MAC

For their first ever plugin synth, these Scottish developers have focused on acrobatic modulation and fast, efficient workflow. A good concept?

> Edinburgh-based developers Krotos Audio are among the first ports of call for movie and videogame audio producers looking to create dynamic, 'playable' sound design elements. Thus far, however, their plugins – including Reformer Pro (Foley effects, animal noises, etc; 8/10, cm258), Weaponiser (gunfire and associated noises; 9/10, cm256) and Igniter (real and sci-fi vehicles and engines; 9/10, cm 269) – have been largely irrelevant to musicians, so it's with no small degree of excitement that we fire up Krotos' first ever softsynth: a two-oscillator virtual analogue going by the name Concept (VST/AU/AAX).

Think tank

Concept's interface makes it immediately apparent that this is an instrument that wants to be your friend, no matter what your level of experience. Apart from the fold-out modulation controls, every parameter (two oscillators, amplitude envelope, filter and effects) is accessed from the front panel; and while any prospective user will, naturally, need to wrap their head around the basics of synthesis to get anywhere, Concept is as unintimidating as we can imagine a not-dumbed-down synth being.

Each oscillator outputs a user-adjustable mix of two waveforms (sine, triangle, saw up, saw down, square, noise), and FM Ratio and Depth knobs apply frequency modulation (FM) via a separate sine wave oscillator, for metallic tones, hard basses and the like. After shaping with the ADSR amplitude envelope, the oscillators feed into a simple resonant ladder filter that only offers high- and low-pass modes, and 24dB/octave roll-off, but can be overdriven and variably mixed with the input signal.

Big ideas

The smoothly animated central red, green, blue and purple displays are the visualisers for Concept's four modulation sources, showing LFO waveforms, envelope shapes, etc, and expanding to reveal the controls for said devices when clicked. Each source slot can be loaded with any one of five signal generating modules, and almost every parameter can be modulated, including those of the effects and the modulators themselves.

The LFO (bipolar only) and Envelope modules present no surprises, the former outputting the same six waves as the oscillators, and running at up to 30Hz unsynced, or 8/1 to 1/64 synced; the latter an ADSR with the Attack, Decay and Release times maxing out at 20s each.

The Audio Input module is very 'Krotos', enabling the amplitude or pitch of an incoming audio signal on one of four sidechain inputs to be exploited as a modulation source. The Smoothing control is used to reduce glitchiness with fast moving signals, and pitch modulation can be constrained to a specific frequency or

"It's powerful stuff, opening up a world of rhythmic and tonal control"

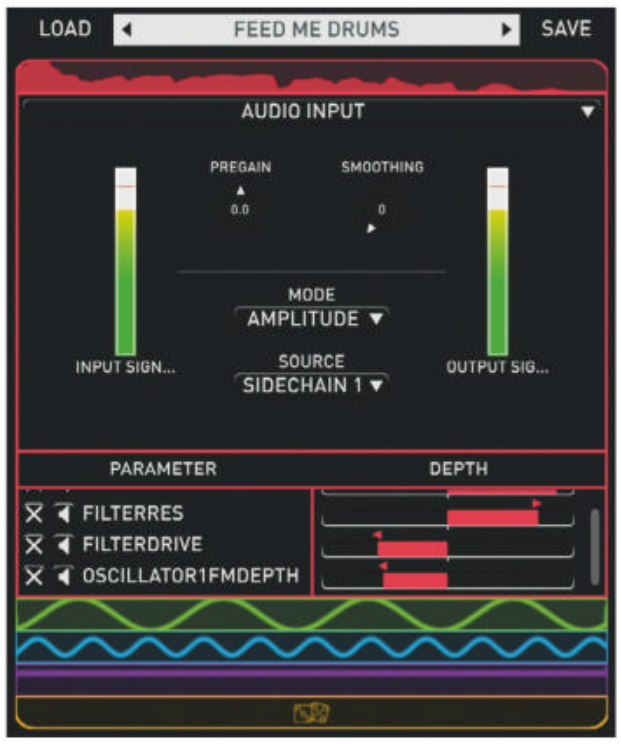
note range. It's powerful stuff, opening up a world of rhythmic and tonal control.

The XY Capture module is an XY controller into which you can record a looping or one-shot movement path up to eight bars long (or as long as you like when not synced to host) for use as a bipolar modulation signal. The speed of automatic playback is adjustable, and in manual mode, a slider (host-automatable but, disappointingly, not internally assignable as a modulation target) is used to fly backwards and forwards through the path as you see fit.

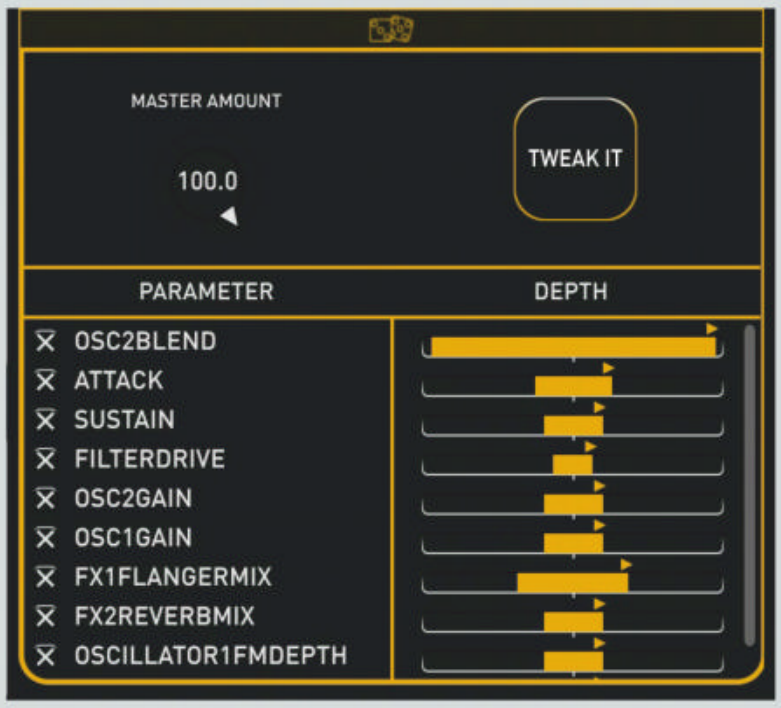
The Mod Wheel module simply points MIDI CC1 at its targets, with the input/output mapping shaped using an editable curve.

Modulation assignments are made by dragging target parameters onto sources (XY Capture offering separate 'X' and 'Y' axis fields), and assignments are maintained when the source module in a slot is changed. Each source's targets are listed in its panel, with modulation amount sliders and mute buttons for each; and adjustable mod amount collars also appear around the controls in the front panel, providing an at-a-glance assignment overview. There's no limit to the number of parameters a modulator can be routed to, but – ouch! – each parameter can only receive one source input at a time, so you can hook an LFO *or* an envelope into the filter, say, but not both. This is a real issue for deep programming, and we can only hope it gets addressed in an update.

Finally, Concept's effects rack gives you three slots to fill with any combination of ten processing modules. These include EQ, Compressor, Delay, Saturation, Ring Mod, Filter (a repeat of the main filter) and a convolution reverb stuffed with factory impulse responses and able to import external WAVs.



Impose the rhythm or pitch of any sound on Concept's synthesis parameters using the Audio Input modulator



Click the Tweak It button to randomise the listed parameters

Tweak this

Below the four mod source displays sits a fifth, yellow fold-out panel, with a central 'dice' button suggesting some kind of randomising functionality. And indeed, that's what the Tweak It system does, albeit with user input required.

Like the modulators, Concept parameters are assigned to Tweak It by dragging their names into the panel, whereupon they're added to the assignment list and given Depth sliders. Clicking the button then randomises all assigned controls around their set values, within their Depth ranges.

The Master knob scales the randomisation globally, and it's worth noting that randomisation is bipolar only. The obvious omission is the inability to trigger the randomise button via automation or a dedicated MIDI note, and/or have controls transition to their new values over a period of time, which would turn Tweak It into more of a sound-morphing performance tool.

It'd also be cool if you could drag entire sections in at once – all four amp envelope parameters, or the full control array of an oscillator, say – rather than only individual controls. As it stands, though, Tweak It is a helpful system for instantly calling up variations on existing presets.

High Concept

Krotos Audio have developed a fine synth here, and there is a lot to love in Concept's relaxed, intuitive GUI, solid 'analogue' sound and nifty modulation setup. And while the XY Capture and Audio Input modules are the more obvious headline makers –facilitating artful automation, creative experimentalism and dynamic 'fusing' with other mix elements – the rest of the components come together pretty seamlessly around them.

Concept has not made a flawless debut, though. That one-mod-per-parameter limit is not great, and we don't massively enjoy having to pop open a display every time we just want to tweak an LFO or envelope – surely the modulators could be integrated into the main interface without compromising their excellent visualisers. We'd also like to see the filter become more versatile, and the LFO and XY Capture given a unipolar mode and Tweak functionality. It's potential to be realised. But those wishes aside, as we say, Krotos Audio have built a productive, fun instrument that delivers the goods across the gamut of analogue instrumentation, but is particularly effective and individualistic as a source of contextually responsive pads, FX and textures. **cm**

Web krotosaudio.com

Alternatively

Rob Papen Predator 2
cm239 » 9/10 » £124
A far more complex synth, but also features a recordable XY pad

u-he Hive 2
cm273 » 9/10 » €149
We'd guess this hybrid monster synth was the inspiration for Concept's mod visualisation

Verdict

For Intuitive and well designed
Audio Input mod and XY Capture head up a powerful modulation setup
Dual-wave oscillators with FM
Tweak It randomiser and FX are great

Against Limited filter modes
Only one mod source per parameter
Modulator access is a bit faffy

An inspired addition to the Krotos catalogue, Concept is a modernist breath of fresh air with a few fixable flaws

8/10

cm/the 6 best...

Drum and perc plugs

We've tested some very wide-ranging drum and percussion plugins recently. Here are six of the very best...

Sugar Bytes DrumComputer

€119 8/10 cm281

DrumComputer is an eight-engine drum machine with onboard step sequencing, and a synth at its core which gives it mighty percussion power. We concluded: "With its unique, deep architecture, wild sounds, superb sequencer and inspiring parameter and pattern randomisation, this won't disappoint."

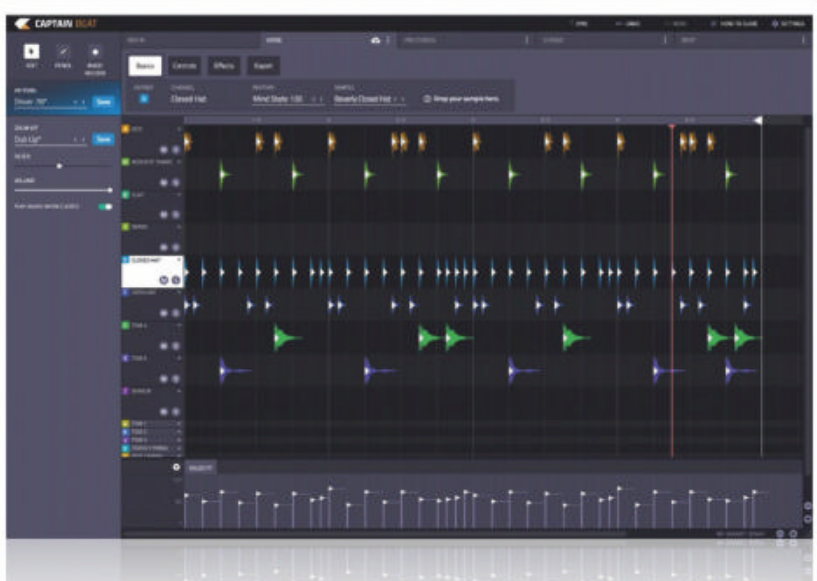
sugar-bytes.de

Accusonus Rhythmiq

$149 8/10 cm280

Rhythmiq is a loop deconstruction and rearrangement instrument that "allows you to instantly jam with your beats". It can even generate variations on imported audio loops all by itself and we found it a highly creative tool. "For genuinely live 'remixing' of drum and percussion loops, Rhythmiq is a productive, musical and very user-friendly solution."

accusonus.com



Mixed In Key Captain Beat

$50 8/10 cm279

Captain Beat is a sample-based drum machine aimed primarily at newcomers to music production. It includes a sizeable library of ready-to-go sequences and one-shot samples and is pretty easy to use. "A little more in the way of sample manipulation and processing wouldn't hurt, but given the price, we'd cheerfully recommend Mixed In Key's tidy virtual beatbox to any aspiring producer."

mixedinkey.com

Auddict PercX Pro

$299 **9/10 cm280**

PercX Pro is a multitrack percussion ROMpler currently aimed at soundtrack and media producers. It combines one-shot triggering and MIDI sequencing in a hybrid interface, alongside real-time performance and recording. "An incredibly flexible tool for the design of big, bombastic percussion lines, then, PercX is a triumph, with an ambitious hybrid approach that succeeds on almost every level."

auddict.com

Toontrack Kicks & Snares EZX

£52 **9/10 cm280**

This Toontrack expansion adds 31 quality kicks and 43 snares to your EZdrummer 2 or Superior Drummer 3 library. OK so it's not a complete standalone plugin per se, but the quality of what you do get warrants its inclusion here and we concluded: "Kicks & Snares EZX gives you a truckload of bona fide classics."

timespace.com

Audiomodern Playbeat

€49 (PC/Mac); £7 (iOS) **8/10 cm278**

This drum and percussion sequencer has randomisation and AI features built in to help generate patterns. "It is," we said, "at its best when used for generative percussion (as opposed to drum kit) patterns, and even off-kilter bass and melodic lines. It's also very quick and easy to use and well suited to the iOS platform."

audiomodern.com

musicradar.

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musicradar.

YouTube

cm mini reviews

A rapid-fire round-up of sample libraries, ROMplers and music gear

ROLI

Songmaker Kit Studio Edition

£599.95

Songmaker Kit Studio Edition is essentially a ROLI 'best-of'

Web roli.com
Format Mac/PC, iOS

It's hard to believe that ROLI have been making their unique touch-controlled hardware and software for over a decade now. In that time they've moved in price and size from super-expensive 'five dimensions of touch' Seaboard controller keyboards right down to the Block system that uses the same MPE touch system for some different ways to compose and play.

The Songmaker Kit Studio Edition is like a 'best of' covering all of the above, including the Seaboard Block keyboard – a much reduced in size version of the original Seaboard – and both the Lightpad and Live Blocks. In truth it's a bunch of already-present technologies all held together in a neat-ish magnetic 'Snapcase'. It is, supposedly a package that is more than the sum of its parts – which is just as well, as the bundle price *is* more than the sum of its parts – because it comes with significant software aimed at making it a 'complete kit for creators'.

To give you a quick overview of the tech, you can play the Seaboard Block like a keyboard but it comes with extra touch dimensions that let you really twist, strike and slide your notes for some very expressive playing, especially with the bundled Equator synth. The smaller, square-shaped Lightpad Block is for creating more effect and beat-type sounds while the yet smaller Live Block lets you put performances and tunes together with some ease.

The best bit is the software bundle though, which includes ROLI Studio, which unites – with some success – the now too-many strands in the ROLI eco-verse. That alone features both Studio Player Drums to make the most of more than 500 preset sounds and beats. Further titles include three synths and versions of Tracktion and Ableton Live, but much of this is included with the individual elements of this bundle. As we say, those street for less, so *really* you're paying for that Snapcase and some cool linkage.

7/10

WA Production

Babylon $13.80

Web waproduction.com
Format VST, AU, AAX

There's a burgeoning market for budget hardware synths and it seems to be going that way for the softsynth too. Babylon is new but is already seeing its price cut from an already reasonable $69 to less than $14. It's a relatively easy and basic concept – a decent synth with lots of presets – and despite its rather dull appearance, it does have some outstanding hidden, and not so hidden, flourishes.

First a quick overview. You get three oscillators, each with 257 waveforms to choose from, it has a 'one-page wonder' design where everything is supposedly within reach on a single layer on the UI. This is not *strictly* true if we're being pedantic as the bottom section has four options to access modulators and keyboard options – but we get where WA are coming from. Most of the controls are on display, right?

This bottom part of the UI also features the tuning section, which WA are very proud of, saying that not many softsynths feature its microtonal abilities that also access '23 standard and 34 traditional scales and modes from the Middle East'. We're more excited by the filter options which include additional drop-down effects like Overdrive, Bit Rate Reduction and Distortion which have varying impacts, depending on the sound. Additional effects are also a bonus, including EQ, Filter, Reverb and Delay that you step through to switch on and off and adjust levels. Not all are shown at the same time but they are decent enough and can add or subtract a lot from the sound.

Talking of which, there are more than 2,300 preset sounds in Babylon – that's just over half a cent a sound! Since reviewing a couple of preset-stuffed synths over the last few months we're really erring towards more manageable amounts and the quality over quantity philosophy. That's not to say there are many bad ones here – in fact there are a lot of good ones (some *very* good ones); it's just a lot to go through.

Babylon is a very capable synth with (certainly) more than enough sounds to get you going and lots of on-board flexibility, meaning you can throw it at a lot of tasks. And at its current price it's certainly in that 'grab it while you can' category.

8/10

cm mini reviews

FireSonic
FirePresser €99

Web unitedplugins.com
Format PC/Mac, VST/AU/AAX

The latest plugin release from tripartite development coalition United Plugins is an innovative dynamics processor based on a serial chain of four legendary analogue compressor emulations – Urei 1176, Empirical Labs Distressor, dbx 160 and an unspecified vari-mu model – the relative 'depths' of which are blended using a central XY pad. The global threshold and ratio settings are input-dependent, with extra oomph dialled in using the gain-compensated Turbo knob and 'analogue' distortion applied separately via the Saturator control; and Attack and Release times are adjustable (as percentages, not in milliseconds, annoyingly). Sidechain filters enable exclusion of low and/or high frequencies from the detector circuit, and the Dry/Wet mix knob facilitates parallel compression at the final output.
Handily, the four compressors can be reordered within the processing chain by dragging their nameplates under the XY pad left and right, and although this doesn't remap their corner locations on the pad, each can be bypassed individually. Thus, it's possible to achieve any conceivable blend of four, three or two compressors, or use any one of them in isolation; and the four compression amount meters around the XY pad give a constant overview of their action.

Obviously, the lack of dedicated threshold and ratio controls is a point that must be raised, but actually, we didn't really find it an issue in use, as we could always get the intensity of compression we wanted using the Turbo knob. More of a problem for some will be the inability to switch the four compressors out of their serial chain configuration to a parallel setup, but again, this isn't a showstopper as far as we're concerned. Ultimately, FirePresser's well-judged ease of use, powerful blending of four classic character compressors, and warm, fabulously authentic analogue sound come together beautifully in a studio tool that's much more versatile and 'high-end' than appearances might suggest.

9/10

Kilohearts
Dynamics €29

Web kilohearts.com
Format PC/Mac, VST/AU/AAX

Working as a Snapin module for their Snap Heap and Multipass host systems, as well as a plugin in its own right, Kilohearts' new effect is a simultaneous upward/downward compressor with two independent thresholds defining the points above and below which downward compression (upper) and upward compression/expansion (lower) are applied. In a nutshell, Dynamics lets you make loud components of the input signal quieter at the same time as making quiet components even quieter or louder.

Thresholds and ratios are adjusted by dragging visually representative handles in the graphical display, the latter ranging from 1:1 to 1:30 or 30:1, while the knobs below set the Attack and Release times (as percentages again!), the angularity of the transfer Knee, and the dry/wet Mix.

Thanks to its intuitive, highly graphical interface, Dynamics makes an architecturally complex take on volume processing supremely user-friendly; and it sounds great, too – transparent and responsive. Providing surgical control of dynamic range in all directions, Dynamics is a fine addition to the Snapins line of plugins, at a price that can't be argued with.

9/10

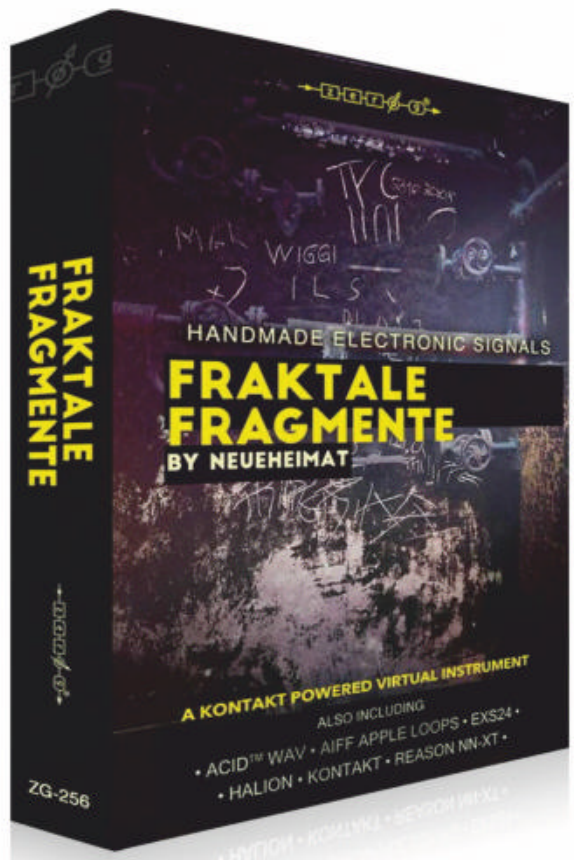
InSession Audio
Drumatic Creator $140

Web insessionaudio.com
Format PC/Mac, Kontakt/Kontakt Player

When we reviewed InSession Audio's Taiko Creator Kontakt Player instrument in cm265 (9/10), we praised not only its stunning sample library, but also the power and polish of its 'Creator' Kontakt engine. Drumatic Creator is the exact same thing again, but with a 2.7GB library of 40 deeply multisampled bass drums, snares, toms, tenor toms, rototoms, frame drums and surdos, 16 'percussion' elements and 97 'auxiliary' sounds (atmospheres, booms, cymbals, etc), rather than taiko drums. 15 two-key Groups can each have up to nine sounds stacked on them, for potentially vast ensembles, with individual auxiliary sounds mapped to 18 further keys. You have total control over all mapping assignments, as well as the pitch, volume and panning of every sample layer, 'human' timing variation within Groups, four mic positions, EQ, reverb, Group randomisation and more. The Creator engine is as awesome as we first thought (though it still needs a Group mixer), and Drumatic Creator is a grand source of epic, cinematic ensemble percussion, and the perfect western partner to its Japanese predecessor.

9/10

Soundware round-up



Zero-G

Fraktale Fragmente £38

This iconoclastic 1.4GB sample collection by German duo Neuheimat could be described as genius or lunacy, depending on your musical 'thing'. We opt for the former, as Fraktale Fragmente's unpredictable lucky dip of 500 spectacularly heterogeneous and length-variable mechanical, electronic, aquatic, found, environmental and other noises makes for one of the most exhilarating soundware listening experiences we've had of late. The included Kontakt instrument puts the samples into a rudimentary interface with adjustment of start point, amp and filter modulation, and a bank of effects, adding to the value. Radio rental!

timespace.com

9/10

Drum Depot

SiNTH DRoMS €15

Sound designer Marco Scherer's affordable new sample library folds 382 drum one-shots captured from a variety of hardware synths, including the Waldorf Blofeld, Novation Nova, Elektron Analog RYTM and Dreadbox G-System, into 25 premapped 16-pad kits for Live, Maschine, Battery, Kontakt and Geist. The diversity of kicks, snares, hats, cymbals, toms and percussion is broad. You also get 142 MIDI files with which to trigger the kits, and 87 excellent 'bonus' drum loops, and our only criticism is that the samples are just numbered within each kit rather than named to reflect their drum types.

drumdepot.marcoscherer.de

9/10

Ghost Syndicate

Nostrum £20

This straight-up 172/174bpm DnB library delivers a generous helping of loops and shots at a very reasonable price. 30 lovingly crafted stemmed (kick/snare, hi-hats, percussion and tops) drum loops get things going – bright, punchy and 'classic' in their styling, generally speaking. The 36 stemmed bass loops are the highlight, comprising Mid and Sub layers (as well as mixed bounces) and writhing with modulation, while the 21 synth lines are mostly of the incidental rather than 'lead' variety. A tonne of one-shot drums, percs, basses and FX seals the deal.

loopmasters.com

9/10

Sample Magic

Deep House Soul £15

"Weaving together authentic classic house and soul", SM's 420MB 'white label' draws on vintage hardware synths, drum machines and samplers in its deliciously dusty production; and although the fusion of the aforementioned styles isn't exactly groundbreaking, the execution of it here is flawless. 20 stemmed beats (100 files) swing along at 123 and 127bpm, 28 basslines veer from jackin' to garage-y via points in between; the soul angle comes into play with the cut-up vocal and smooth synth loops, and 12 melodic mini construction kits provide song-starting inspiration. Tasty.

samplemagic.com

9/10

UNDRGRND Sounds

Ghetto Tech £30

UNDRGRND certainly love their old-skool, and this nostalgic offering aims to encapsulate the filthy sound and attitude of the 90s ghettotech scene. As per, the authenticity is unquestionable, with vintage drum machines, analogue synths and vibey keys all rinsed to riotous effect. And crucially, no compromises have been made with the vocal loops, which are appropriately inappropriate. With 287 loops (80 drum stems, 20 merely bounced mixes of related loops from the main library) and 50 one-shots onboard, though, It's not the most amazing value.

undrgrndsounds.com

7/10

Soundware round-up

Ilio

The Fame Series: Classic Sounds for Omnisphere 2 £30

The first in Ilio's new range of preset libraries for Spectrasonics' über-synth, created with UK producer Reverb machine, comprises 66 recreations of classic synth sounds from a series of explicitly named 70s/80s/90s hits ('Madonna Prayer', 'MJ Billie's Bass', 'Bush Running Hill', 'Joy Will Tear Us', etc). Every one brings a smile to the face, and the integrated info texts are interesting and informative. An entertaining, useful and slickly presented package, but we'd have liked to see a few more patches for the money.

timespace.com

8/10

Loopmasters

Voyage – Chilled Trip Hop & Electronica £35

Finding a well-judged balance of lo-fi grit and polished lustre, Voyage's 2.4GB library of loops, one-shots, multisamples and Serum presets makes rich pickings for producers of all contemporary downtempo styles. The beats are phat and controlled, and sit well under the sequenced percussion lines and live breaks, while the synth and synth bass loops cover plenty of ground. The real treat, though, are the sublime acoustic, electric and bass guitar loops, bringing a real human dimension.

loopmasters.com

9/10

Earth Tone

Azerbaijani Violin £25

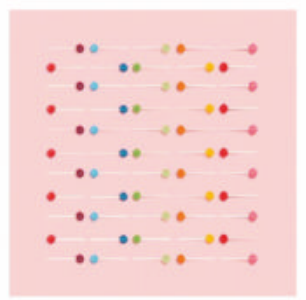
180 consummately performed violin loops at 90, 110 and 130bpm, supplied completely dry and in 'wet' effects-processed versions. The tunes are folky and ear-catching, and vary in pace, mood and eastern/western flavour; and while it's a shame the producers weren't more adventurous with wet loops, which all use the same EQ, compression and reverb settings, the dry originals are the main attraction anyway, ripe for processing however you like. Hauntingly beautiful and emotive, Azerbaijani Violin is a first-rate source of solo violin lines for music and media production.

loopmasters.com

9/10

SoftGlitter

Candy Coated EDM $40 or subscription



Eschewing the more flamboyant excesses of EDM, SoftGlitter's first contribution to the Noiiz sample catalogue is cheerful in disposition and understated from a production perspective. Crisp drums – regular and half-time – showcase the producer's keen ear for a groove; solid basses and subs prioritise simplicity over wild modulation; bright synths, keys and vocal cut-ups nail the melodics; and a decent show of one-shots should keep the sampler busy. The price and a couple of naming errors aside, an impressive debut.

noiiz.com

8/10

Rhythmic Robot

Dark Machine €40

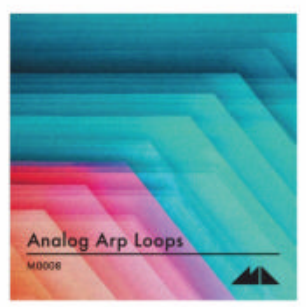
How did they obtain the messed-up transistor-based ex-Soviet synth that provided the 1GB sample library for their new Kontakt instrument? We don't know! But the result is an edgy one-off that producers of moodier electronic music need to hear. The original hardware monosynth has been transformed into a three-osc poly with six simultaneous waveforms per oscillator, powerful unison detune, amplitude, pitch and filter modulation, stereo spreading and effects specialising in drones, pads and textural oddities. Crackling with character.

rhythmicrobot.com

8/10

ModeAudio

Analog Arp Loops £6



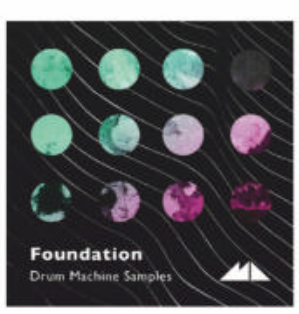
Our first *Soundware Reviews* entrant from Mode's new super-budget Mini Pack range consists of 50... well, analogue synth arpeggio loops, plus tail samples for 41 of them. The naming reveals that the arps are actually extracted from mini construction kits of two or three loops each – 'Arp', 'BassArp' and 'TrebleArp', say – and their sound design and melodic/harmonic patterning are of the laid-back, airy, synthwave-y kind, as those familiar with the label will expect. Second-tier in numbers only, Analog Arp Loops is well worth the paltry asking price.

modeaudio.com

9/10

ModeAudio

Foundation £16



70MB of one-shot drum samples, sourced from three vintage drum machines – LinnDrum, Alesis HR16, MPC2000 – and the much more recent Behringer DeepMind 12 synth. The 337 expertly recorded raw kicks, snares, claps, hats, cymbals, toms and percs would be worth the price alone for those not already overstocked with classic beatbox hits, but you also get just shy of 100 more colourific processed and layered (utilising three or four samples) alternatives, as well as 13 mapped kits for Live, Logic, Reason and FL Studio. Bangin'.

modeaudio.com

8/10

Organic Loops

String Cadence 2 £35

Seven lavish chamber string ensemble construction kits – five eight bars long, one each four and 16 bars long – in a range of styles and tempo from 102-152bpm. You get full multitracks, stems and underscores, plus alternative pizzicato and/or sustained kits. The composition, performance and production are first class, but the target audience is more the media producer in need of instant (/short!) mixable string passages than the musician, who may not find much to do here beyond remixing the kits for the sake of it or plundering the odd line/stem.

loopmasters.com

7/10

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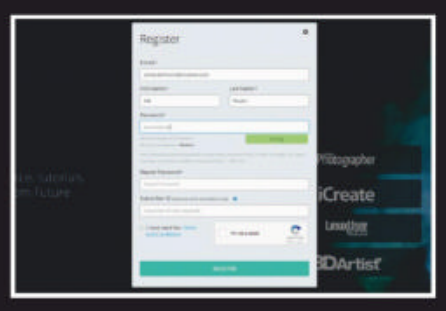

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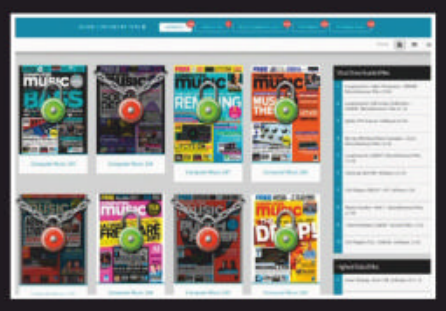

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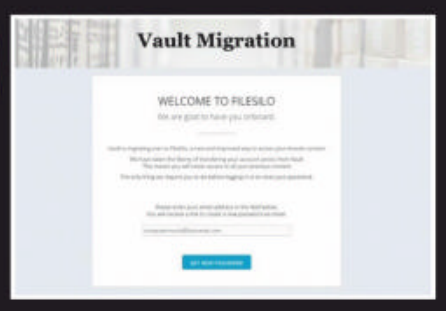

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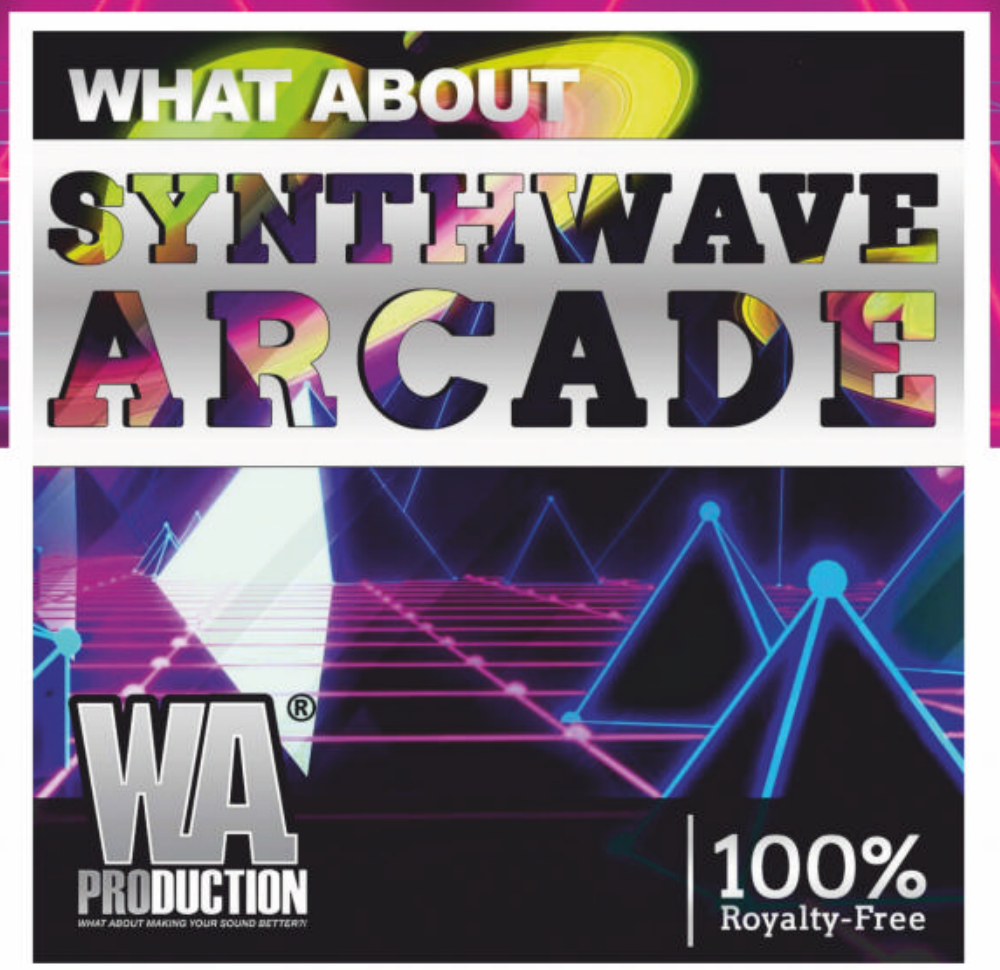
Download WA Synthwave Arcade for free!



How to get your free Pro Sample Pack worth $19.99!

This month in *Computer Music*, we have a fabulous set of pro samples for every reader worth $19.99!

Synthwave Arcade is an incredible 4.4GB collection of drum and melody loops, hits, effects and construction kits designed for EDM, house, pop and synthwave. Sample experts WA Production have described the collection as "a modern fusion of old-school classic sounds blended together in a way that has never been done before. We've got the funk of nu-disco, the past future atmosphere from the 80s, and rhythmically thumping retro wave synths giving you this inventive hybrid spin on synthwave."

The download includes an extraordinary range of sample plus 40 Xfer Serum Presets, five templates for Ableton Live and five construction kits that include over 160 WAV, MIDI, and presets.

"Don't settle for being on top of the game: make the rules and lead it," say WA of the collection. "With the precise amount of robotic, futuristic, and spacey melodies driven by a constant, strong, funky bassline that you feel within the depths of your soul, your mix will turn heads and grab attention."

PACK DETAILS

- **5 Construction Kits that include over 160 WAV, MIDI, and Presets**
- **5 Templates for Ableton Live**
- **40 Xfer Serum Presets**
- **20 Melody Loops**
- **20 Synth Shots**
- **20 Drum Loops**
- **20 Kicks**
- **20 Percussion**
- **30 Claps & Snares**
- **10 Cymbals**
- **15 FX**

Unzipped size: 4.41GB

How to download your free sample pack

The Synthwave Arcade collection normally costs $19.99 but as a *Computer Music* reader you can download it for free!

1. Head over to waproduction.com and search for Synthwave Arcade or go direct to **https://www.waproduction.com/sounds/view/synthwave-arcade**
2. Click on Buy (the first of the four black-tab options)
3. Click on the Shopping Cart icon at the top of the page. Remove any free collections that might appear.
4. Enter **WACM8695** as the discount code and hit the Add Discount icon. Checkout and enter your email.
5. Complete Checkout and find the collection under "My Orders" on your profile page. Download it here or wait for an email and click the download link.

cm/video

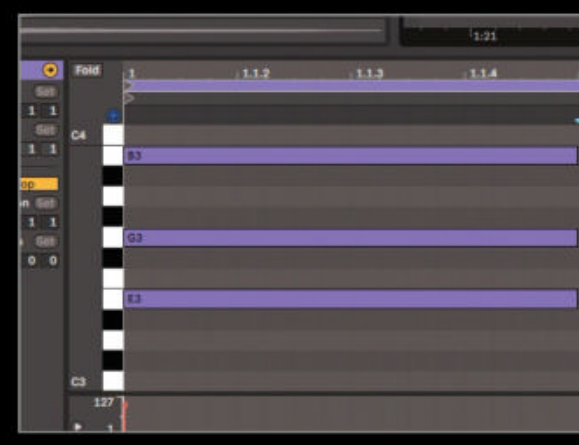
Download this month's videos: **filesilo.co.uk/computermusic**

MAKE A RAVE TRACK

Check out these three videos on creating a slice of classic 90s rave...

Read the full article on p18

1 > Beat creation



3 > Rave piano stab

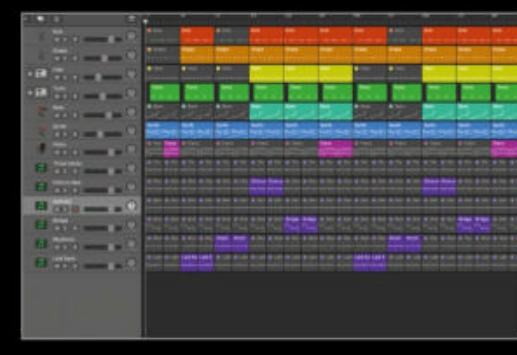
5 > 808 Distortion Using RP-Distort CM

cm/experts

Our resident music production gurus walk you through their specialist field every month

COMPOSING

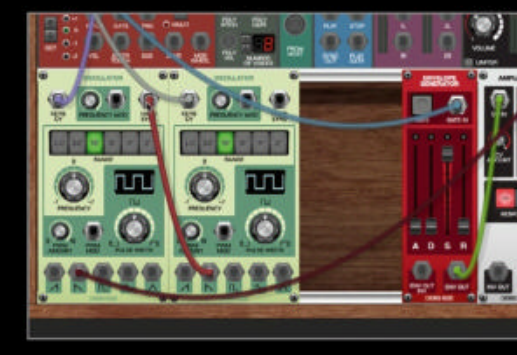
BREAKING THE LOOP



Read the full article on p60

SYNTH MASTERCLASS

OSCILLATIONS PART 2



Read the full article on p62

All-new free samples

There's a great selection of all-new 90s samples this month, from both Cyclick Samples and Groove Criminals. Get them on the DVD or at **filesilo.co.uk**

Cyclick 90s Collection

For our 90s special, our collection focuses on the dance sounds that emerged via acid house and rave in that decade. Robbie from Cyclick talks us through the tempo folders (for the gear he used, see below right):

Arps "A set of arp runs and single 16th-note filter sweeps all created with the BassStation. The synth was run into the two Moogerfooger pedals, the XVive Memory delay and TC Hall Of Fame reverb pedal before hitting the dbx 166XL and JDK Audio R24 EQ. The pedals were tweaked for changes in tempo and source sound. The arps were created in MIDI in Nuendo and the sweeps controlled via automation sent to the BassStation."

Bass "BassStation all the way, mostly working from the Program 10 (12 and 13 too) TB-303 emulation and tweaking it a little bit."

Beats "Programmed using a combo of Kontakt 5 and Arturia Spark. The Beats samples are the drum machine patterns in varying layered states, and the Breaks are sliced-up acoustic drum loops which have been processed to mix together in the BeatMix loops."

Synth "We focussed on the string pads, DX organs, piano/string combos and the hard lead/pad stab patterns."

Novation Bass Station rack monosynth

dbx 166XL compressor/limiter

Aphex Dominator II multiband peak limiter

JDK Audio R24 EQ

AMS RMX16 500 series

Kurzweil K2600r synth/FX

Yamaha SPX1000 multi effects

Focusrite ISA828 8-channel preamp

Eventide Modfactor

Moog MF-101 Lowpass Filter and MF-102 Ring Mod

TC Electronic Hall Of Fame reverb pedal

Xvive Memory analogue delay pedal

NI Kontakt 5

Plugins from: Arturia V Collection, UVI Workstation (DX patches), UAD, Soundtoys, Eventide, LiquidSonics (Seventh Heaven), iZotope (O8N2)

90s Style by Groove Criminals

Groove Criminals produced this next set of samples, again inspired by our 90s theme. Oli Bell from Groove notes:
"Focusing in on some key styles and sounds of the 90s, we've dusted off our Korg M1 and rinsed a couple of its more prolific patches. Other hardware that hit the spot included our Roland M-DC1, a JV synth dance expansion card in module form that was put out in the 90s and pretty much covers all of those iconic dance sounds from that decade. We have a couple of 303 clones but used the Roland TB-3 to cover some gritty acid squelches, because we love the user interface and it sounds pretty damn good to us."

FROM THE cm VAULT

Aquatic Adventures 2

In this new section, we plunder the cm Vault to bring you classic sample collections from our 21-year history. Time to go underwater once more...

Welcome to a new inclusion in *Computer Music* where we bring you some classic samples from the mighty cm Vault, a huge hard drive stuffed full of all the audio that we've given away over the last two decades. Last month, we brought you the first half of Aquatic Adventures, so here's part 2, a 1.37GB collection of loops, atmospheres, drum hits and more.

Robbie from Cyclick Samples put the collection together... "This may be the most idiosyncratic of sample collections to date. It is made up of 15 multisampled instruments (in SFZ format for the Alchemy Player CM and anything else that can load SFZs), five drum/percussion kits, loops and lines across four tempos, EFX loops/one-shots, and a set of Water Pad chords. The beats were made from layered hits which have been culled from various analogue and digital drum machines and synths over the years. These have been processed and mixed to make sure that they don't get all modern and blown out, but instead possess the requisite 'skippy lightness' that would have kept feet tapping throughout the innumerable levels of the games of yesteryear.

"Accompanying the beats are looped lines from a set of sine wave basses, plastic pianos and blippy leads, with some arpeggiated loops from the basses and leads too. The Water Pad Chords are a set of seven chord shapes (major, minor, 6th, 7th, 9th, sus4 and minor 6th) in three keys (A,C and E) across four super-chilled pad synths. Real water was involved in these as the convolution reverb impulses that help smooth the pads out are in fact recordings made in water using a hydrophone (I have a collection I made for a soundtrack).

"What gaming sample set would be complete without EFX. Most of these loops and one-shots were made from LFO modulated self-resonating filters processed through a variety of reverbs, modulation effects and delays (the aquatic reverb impulses were put to work here as well). There is also a whole heap of Sample & Hold filter control going on to fit in with the gaming theme."

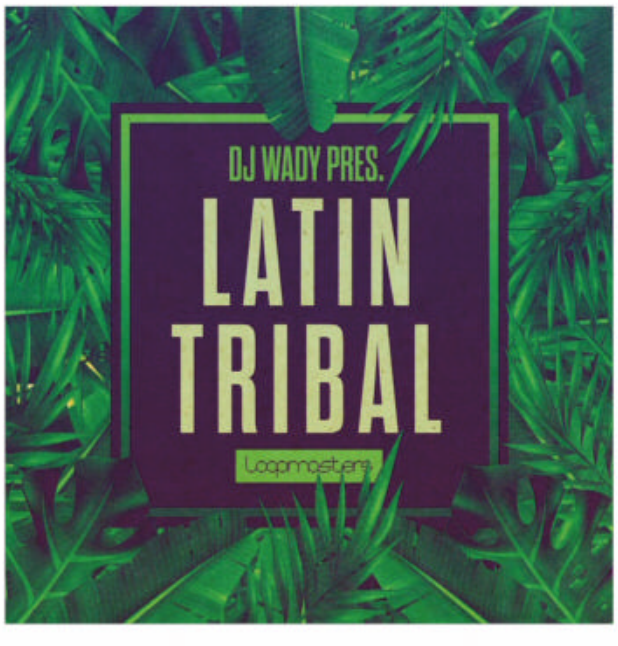
INCLUDES...

- **15** Instruments in .sfz format
- **5** Percussion kits
- **26** EFX Loops
- **86** EFX One Shots
- **220** Loops 'n' Lines
- **360** Multisamples
- **85** Water Pad Chords

GEAR USED
Kurzweil K2600r synth/sampler
Cyclick Samples library
UAD-2 Quad
Focusrite LiquidMix
Arturia softsynths
TAL softsynths
u-he Zebra
NI Kontakt 4
Steinberg Nuendo
Antelope Audio Orion 32
Lavry DA10 converter
Event Opal monitors

Loopmasters cm282 samples

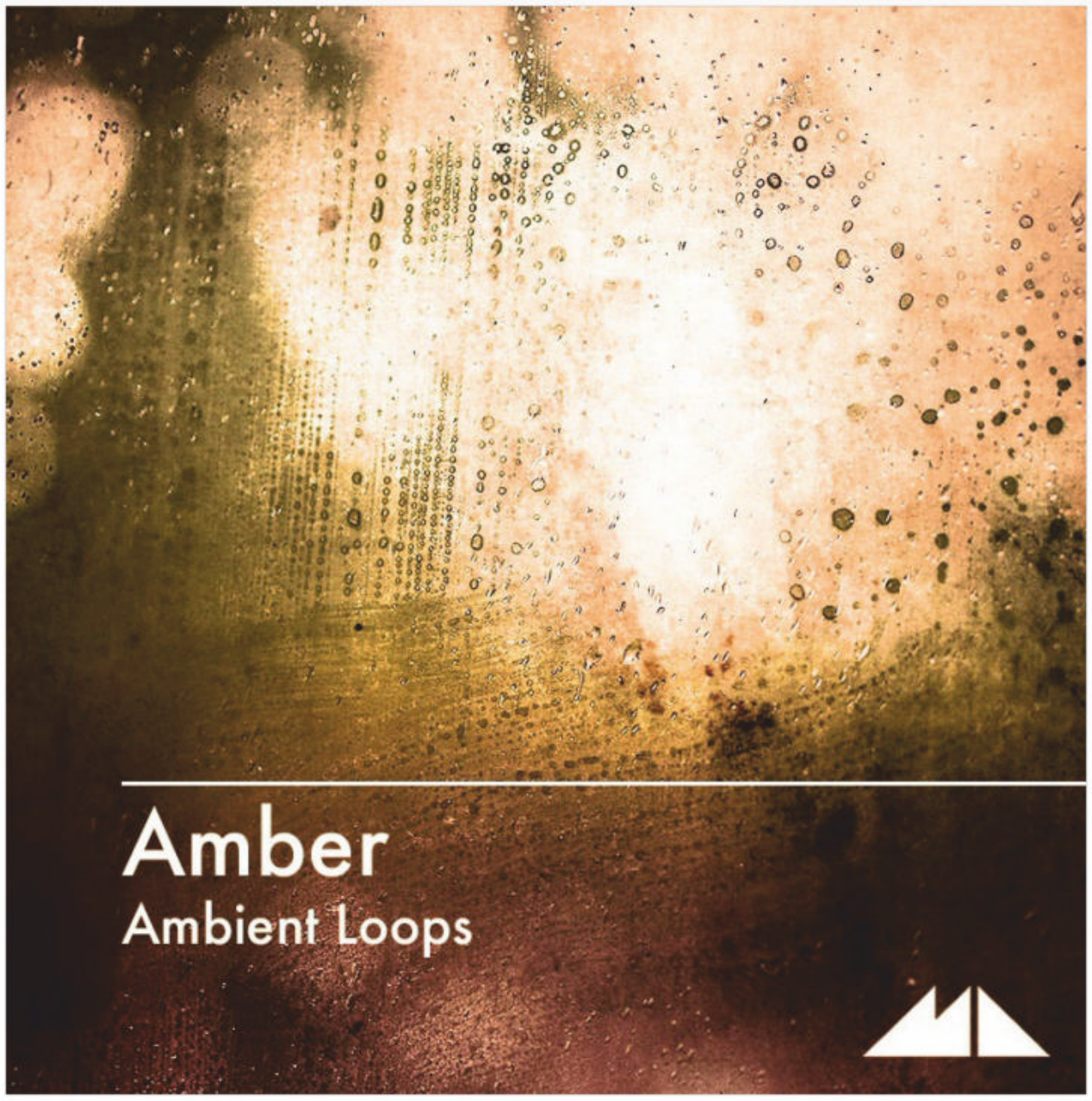
01 **Singomakers** Psytrance Resurrection
02 **Blind** Ascension – Melodic Hip Hop
03 **Sharp** Kings of Tech House
04 **LM** Exmoor Emperor - Celestial D
05 **Loopmasters** Original Jungle Breaks 2
06 **Industrial Strength** Old Movie Clips
07 **Loopmasters** Neo Soul 3
08 **Loopmasters** DJ Wady Latin Tribal

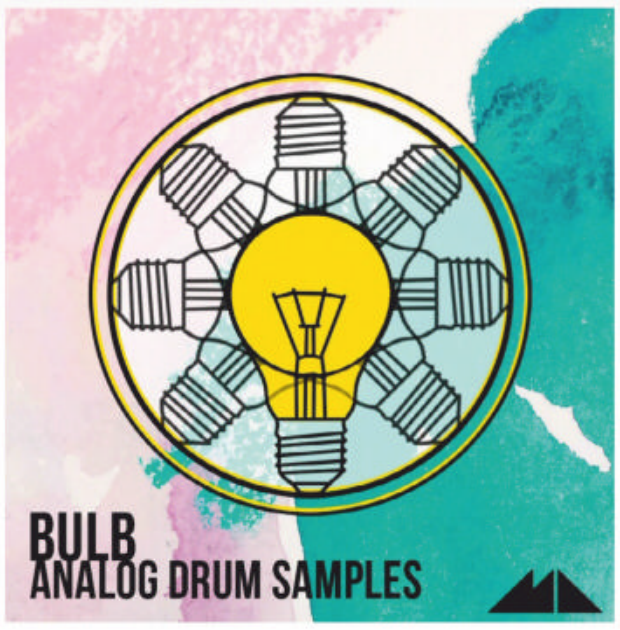


MODE AUDIO

Mode Audio cm282 samples

This month's amazing sample selection from Mode Audio includes a fine set of ambient samples, loops and atmospheres (from Amber, Particulate and Relic), some analogue drum samples and much more. There's also a 15%-off code for cm readers.





BONUS DIGITAL CONTENT WITH EVERY ISSUE

INCLUDES **OVER 3 HOURS OF VIDEO** AND **EXCLUSIVE ROYALTY-FREE SAMPLES**

Available on the App Store

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.

cm PLUGIN SUITE

The cm Plugin Suite is world famous for delivering the instruments, effects and utilities you need to make music, and you get it free with every issue! Here's your complete guide...

> The cm Plugins collection is a suite of complete, limitation-free instrument and effects plugins. It's an incredible resource, boasting more than 90 pro-quality Mac and PC plugins that, in most cases, you won't find anywhere else, all in VST and AU formats. The included software is created exclusively for us by respected commercial developers such as D16 Group, u-he, AudioRealism, Ohm Force, KV331 Audio, Cableguys, XILS-lab, AudioThing, Vengeance-Sound, Rob Papen, zplane and more.

FREQUENTLY ASKED QUESTIONS

Enough talking! Where do I get these plugins?
You can grab them all on the cover DVD with our print edition, or as a download from FileSilo (see **p80** for instructions on how to access).

How do I install cm Plugins?
It depends on the plugin. Some have dedicated installers, while others just drop into your plugin folders. There's a bit more info on p111, and there are specific installation instructions for each in the **How To Install** file in the **CM Plugins** folder.

What do I need to use them?
A PC or Mac and a music program (aka DAW) to host them. You need a DAW that can host VST or AU plugins, such as Ableton Live, Reaper, FL Studio (PC), Cubase, Sonar (PC), Logic (Mac) or GarageBand (Mac). A gratis option is Tracktion Waveform Free.

What happened to...?
As of cm209, almost all cm Plugins are 64-bit compatible. The few older cm Plugins that remain 32-bit-only – such as Amplifikation CM, Rhino CM and KR-Delay/KR-Reverb – are now included in the **32-bit only** subfolders. These plugins require either a 32-bit host or a suitable 'bit bridge' (eg, jBridge) for use in a 64-bit DAW.

Still got questions? See the full FAQ at bit.ly/cmpluginsfaq

THE cm SUITE

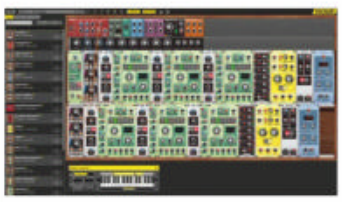
Mac OS Catalina **Updates**

We're working on getting as many of our Mac plugins in the cm Suite updated to run in the latest Catalina OS. Unfortunately, not all will make the transition as many smaller developers simply don't have the resources. Please check the notes we have supplied next to each plugin to check the current status before updating to Catalina if you haven't already, as, because of circumstances beyond our control, you may lose your favourite plugins. We will, however, update as many as possible, so bear with us!

INSTRUMENTS

HYBRID SYNTHS

Our synths have been created by the best software developers in the world to bring you a suite of sound-making tools for all music production scenarios



Cherry Audio Voltage Modular Nucleus
- Eurorack-style modular environment
- 22 modules
- As sold for $29
- PC/Mac, AU/VST/Standalone

cherryaudio.com

u-he Zebra CM
- Blendable oscillator waveforms
- Super-programmable step LFOs
- Slick delay, reverb and chorus
- Original synth designed just for CM
- AU/VST, 32-/64-bit

macOS Catalina ready!

u-he.com

u-he Bazille CM
- Patchable modular synthesiser
- Sequencer and Mapping Generator
- Audio-rate modulation, Fractalizer
- Huge how-to guide in cm232
- AU/VST 32-/64-bit

u-he.com

Dmitry Sches Thorn CM
- Dual spectral oscs/analogue/harmonic filters/spectral/real-time effects/glitch sequencer and arp
- VST/VST3/AU/AAX, 32-/64-bit

macOS Catalina ready!

dmitrysches.com

Synapse Audio Dune CM
- VA and wavetable oscillators
- Powerful per-voice modulation
- 12-slot modulation matrix
- Based on the full version of Dune
- AU/VST/RTAS, 32-/64-bit

synapse-audio.com

Seaweed Audio Fathom CM
- Monster modular polysynth
- VA, FM, wavetable, additive + more
- Envelopes, LFOs and sequencing
- Tons of filters and effects
- AU/VST, 32-/64-bit

fathomsynth.com

PLUS

Enzyme CM
- Scanned synthesis instrument
- AU/VST, 32-/64-bit

humanoidsoundsystems.com

Klevgränd Enkl CM
- Fun, quirky one-osc monosynth
- AU/VST, 32-/64-bit

klevgrand.se

Cableguys Curve 2.6 CM
- Design-your-own-waveforms synth
- Phat 16-voice Unison mode
- AU/VST/RTAS, 32-/64-bit

cableguys.com

KV331 Audio SynthMaster CM
- Dual wavescanning oscillators
- Multimode filter and built-in effects
- FM/AM synthesis modes
- Based on SynthMaster 2.5
- AU/VST, 32-/64-bit

kv331audio.com

Psychic Modulation Phonec CM
- Retro-inspired four-voice synth
- Two oscillators, noise osc and sub
- EchoShifter, Chorus and Melt
- Four envs, two LFOs, Arp and Seq

psychicmodulation.com

VIRTUAL ANALOGUE SYNTHS

Get the sounds of sought-after circuits with our classic collection

LinPlug Alpha CM
- Dual oscillators with wave blending
- Mod matrix, slick chorus effect
- Polyphonic glide between notes
- Based on the commercial Alpha
- AU/VST, 32-/64-bit

linplug.com

XILS-lab PolyKB II CM
- Models the ultra-rare PolyKobol
- Packed with mix-ready presets
- Assign knobs to main parameters
- Based on XILS-lab's PolyKB II
- AU/VST/RTAS, 32-/64-bit

xils-lab.com

Madrona Labs Aalto CM
- Unusual oscillators with FM
- Intuitively patchable modulation
- Onboard reverb • Step sequencing
- Based on the full Aalto synth
- AU/VST, 32-/64-bit

madronalabs.com

XILS-lab XILS 3 CM
- Modelled on the EMS VCS 3 modular
- Authentic circuits of the original
- Pin matrices to 'patch' signal flow
- AU/VST, 32-/64-bit

macOS Catalina ready!

xils-lab.com

DRUM MACHINES

Get heads nodding and design better beats

DopeVST Beat Machine CM
- 50 ready-mixed royalty-free kits
- 50 MIDI beats included
- Kick, Snare, Hi-hat and Misc parts
- Level, Pan, Pitch and Reverb
- AU/VST, 32-/64-bit

dopevst.com

XILS-lab StiX CM
- Drum synth with sequencer; load preset kits/grooves; apply effects, mix sounds; polystep modulation and more; AU/VST, 32-/64-bit

macOS Catalina ready!

xils-lab.com

Thenatan Trax CM
- Sample-based drum machine
- 20 awesome preset kits
- Noise layers and distortion
- Pitch, Filter and Reverb
- AU/VST, 32-/64-bit

thenatan.com

PLUS

brunsandspork Grooove CM
- Load in two samples per sound
- 50 built-in cm Micro Kits to play
- AU/VST, 32-/64-bit

brunsandspork.com

AudioRealism ADM CM
- Old-school-style drum machine
- Emulates Roland's TR-606
- Also contains custom cm samples
- AU/VST, 32-/64-bit

audiorealism.se

SAMPLERS

Import, slice and loop your audio files with these creative and highly customisable instruments

Expert Sleepers XFadeLooper CM
- Creative crossfade-looping sampler
- Hard Sync mode and modulation
- Saturation section, flexible looping
- AU/VST, 32-/64-bit

expert-sleepers.co.uk

Loomer Cumulus
- Granular sampler with sequencing
- Scenes function to sequence slices
- Not based on an existing plugin
- AU/VST 32-/64-bit
- RTAS/Standalone 32-bit

loomer.co.uk

OTHER

HY-Seq Collection 2 CM
- Analogue-inspired sequencer
- 16-step MIDI instrument
- Up to 12 global snapshots
- Three reorderable FX modules
- AU/VST, 32-/64-bit

hy-plugins.com

DopeVST Bass Engine CM
- 45 authentic hip-hop bass patches
- Three eras of faux-sampled bass
- 50 MIDI riffs included
- Envelope and note controls
- AU/VST, 32-/64-bit

dopevst.com

Kirnu Cream CM
- Get more out of plugin instruments and master arpeggios with this tool
- Program and store complex patterns
- Musical controls for rhythm/notes
- AU/VST, 32-/64-bit

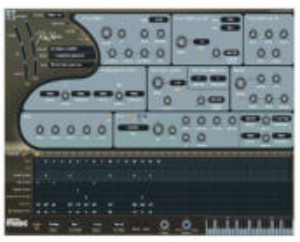
kirnuarp.com

zplane vielklang 2 CM
- Pitch-correct and retune audio
- Harmonise melodies with ease
- Level and pan harmony voices
- Algorithms by zplane's experts
- AU/VST, 32-/64-bit

zplane.de

Eisenberg Einklang CM
- Morph between a trio of oscillators
- Envelope and timbre controls
- Modulate tone with the LFO
- Based on the full Einklang synth
- AU/VST, 32-/64-bit

eisenberg-audio.de



Rob Papen RG-Muted CM
- Create realistic funk guitar grooves
- Onboard sequencer
- Effects and modulation options
- Based on Rob Papen RG
- AU/VST, 32-/64-bit

robpapen.com

AudioThing miniBit CM
- 15-waveform chiptune synth
- Envelope and LFO modulation
- Bit-depth/sample rate reduction
- Based on the commercial miniBit
- AU/VST, 32-/64-bit

audiothing.net

RF Music Scale Player CM
- Play scales in new, creative ways
- Set a 'home' note and scale
- Play other keys to alter settings
- Based on the full Scale Player
- AU/VST, 32-/64-bit

rfmusic.net

AutoTonic CM
- Always stay in key with this MIDI app
- White keys play notes while black keys select the scale you're in
- Choose from a variety of scales
- Standalone, acts as your MIDI input

autotonic.net

PLUS

Monoplugs B-Step CM
- Step sequencer for beats and chords
- Easily creates chord progressions
- Seven pages of controls to dial in
- Based on the commercial B-Step
- AU/VST, 32-/64-bit

monoplugs.com

Squaredheads Nora CM
- Input up to four notes, output chords and arpeggios
- Program velocities & store patterns
- Mac users require macOS 10.8+
- AU/VST, 32-/64-bit

squaredheads.com

cm PLUGINS TUTORIAL BANK

To help you get the most out of our immense plugin collection, we've assembled the **cm** Plugins Tutorial Bank, containing over 100 guides and tutorials for our **cm** Plugins, specially selected from past issues. You'll find *Getting Started* PDFs and videos for most of the individual plugins, along with tutorial PDFs and videos on using **cm** Plugins for sound design, mixing, and even creating entire tracks. You'll find all of this as a handy download from FileSilo – go grab it now and start getting more out of your plugins!

filesilo.co.uk/computermusic

EFFECTS

DYNAMICS

Check out this huge collection of processors – from classic compressors to modern digital creations, we've got everything you need to shape your signals

eaReckon CM-COMP 87
- Slick, punchy compressor
- Mix knob for parallel compression
- Limiter to keep the output in check
- Clear VU- and LED-style metering
- AU/VST, 32-/64-bit

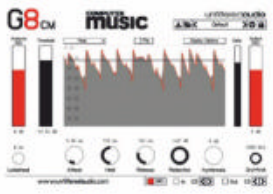
eareckon.com

Acustica Audio Violet CM
- Three-band multiband compressor
- SHmod to shape attack response
- Impart analogue-style valve tone
- Ideal for mixing and mastering
- VST/AU/AAX, 32-/64-bit

acustica-audio.com

Audiority TS-1 CM
- Flavoursome transient shaper
- Set attack and sustain gain
- Blend control for parallel processing
- Based on the full TS-1 plugin
- AU/VST, 32-/64-bit

audiority.com



Unfiltered Audio G8 CM
- Get tight dynamics or creative FX
- Includes advanced gating controls
- Real-time waveform display
- Use MIDI as a trigger or output
- AU/VST, 32-/64-bit

unfilteredaudio.com

WA Production Outlaw CM
- Gain-rider plugin
- Set an RMS Target level
- Razor-sharp metering
- Gate and wet/dry Mix
- AU/VST, 32-/64-bit

pluginboutique.com

HoRNet DrumShaper
- Instant EQ & compression for drums
- Dial in effect amount & in/out gain
- 7 algorithms: kick, snare, loops, etc
- Based on HoRNet TrackShaper
- AU/VST, 32-/64-bit

macOS Catalina OK – see folder notes

hornetplugins.com

WA Production Puncher CM
- Three-pronged mixing multieffect
- Boost transients for punch
- Four-band multiband compressor
- Weighty parallel compression
- AU/VST, 32-/64-bit

waproduction.com

PLUS

Toneboosters Sibalance CM
- Pro de-esser and de-harsher
- Four modes for different use cases
- Reduction and Attack parameters
- (AU/VST, 32-/64-bit)

toneboosters.com

LVC-Audio Transector CM
- Transient tweaking and saturation
- Define and process envelopes
- Useful metering and visualisation
- (AU/VST, 32-/64-bit)

lvcaudio.com

HoRNet Fat-FET
- FET-style compressor
- Similar to the classic Urei 1176LN
- Ultra-fast attack as low as 0.02ms
- Based on HoRNet MultiComp
- AU/VST, 32-/64-bit

macOS Catalina no update coming

hornetplugins.com

audioD3CK SunRuys CM
- Characterful bus compressor
- Dry/wet mix and blend controls
- Advanced options to go deeper
- Based on the full SunRuys plugin
- AU/VST/RTAS/AAX, 32-/64-bit

audio.d3ck.net

D16 Group Frontier
- Superb mixing/mastering limiter
- Set Threshold and Output
- Choose detection and release styles
- Soft Clip control for drive/distortion
- AU/VST/AAX, 32-/64-bit

d16.pl

Ignite VST Vice One
- Talented compressor sold for $49
- Choose between analogue or digital response characteristics
- In/out and gain reduction metering
- AU/VST, 32-/64-bit

ignitevst.com

Toneboosters Barricade CM
- Intelligent mastering-grade limiter
- Dynamic response controls
- Stereo options, versatile metering
- AU/VST, 32-/64-bit

toneboosters.com

SKnote Snap
- Boost or tame transient brightness
- Brighten or dull a sound's sustain
- Uses two intelligently-linked filters
- Not based on any existing plugin
- AU/VST, 32-/64-bit

sknote.it

ANALYSIS

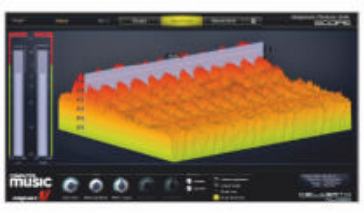
Rule the waves and make your music come alive before your very eyes with the help of these pro-visualisation tools

Blue Cat Audio FreqAnalyst CM
- Pro-quality, feature-packed analyser
- Numerous customisation options
- Based on Blue Cat FreqAnalyst
- AU/VST, 32-/64-bit, RTAS 32-bit

bluecataudio.com

Photosounder Spiral CM
- Musical, note-based analyser
- Useful for figuring out notes in audio and grasping music theory
- Based on the full Spiral plugin
- AU/VST/AAX, 32-/64-bit

photosounder.com



Vengeance-Sound Scope
- Spectrum for frequency analysis
- Oscilloscope for waveform view
- Stereo phase and level metering
- Tons of advanced analysis options
- AU/VST/AAX, 32-/64-bit

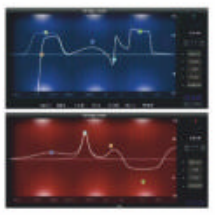
vengeance-sound.com

EQ/FILTERS

From basic clean-up filters to juicy, analogue-style EQ units and creative effects, get your spectrum sorted with these virtual signal-sculptors

Acustica Audio Pink CM
- Analogue-modelled API-alike EQ
- Four EQ bands, two with shelf toggle
- Output adjusts to match Input Trim
- Cut from the full Pink channel strip
- AU/VST/AAX

acustica-audio.com



DDMF CM EQ Pack
- Two superb equalisers
- IIEQ Pro CM: 19 filter types
- LP10 CM: Linear phase EQ
- Based on commercial DDMF plugins
- AU/VST, 32-/64-bit

ddmf.eu

Vengeance-Sound Philta CM
- Dual high- and low-pass filters
- Four slope settings: 12/24/48/96dB
- Resonance and width controls
- Link function and notch mode
- AU/VST, 32-/64-bit

vengeance-sound.com

AudioThing The Orb CM
- Morphing vowel formant filter
- Choose five vowels from a list of ten
- Move the dot to change the sound
- Smooth, Gain and Mix to refine
- AU/VST, 32-/64-bit

audiothing.net

OverTone DSP Program EQ CM
- Pultec-style vintage EQ emulation
- Dual bass boost/attenuate knobs
- Tube amplifier circuit-only option
- AU/VST, 32-/64-bit

overtonedsp.co.uk

AudioThing ValveFilter CM
- Gorgeous filtering and drive
- Low-pass filter circuit emulation
- Vintage valve saturation section
- Based on Valve Filter VF-1
- AU/VST, 32-/64-bit

audiothing.net

Overtone DSP AF2-10 CM
- Four-band EQ with ten filter types
- Band gains adjustable +/-24dB
- Flatten and clear curve, resize GUI
- AU/VST, 32-/64-bit

overtonedsp.co.uk

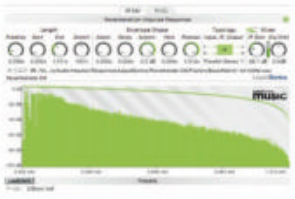
PLUS

eaReackon CM-EQUA 87
Three-band EQ with high/low shelves (AU/VST, 32-/64-bit)

eareckon.com

DELAY/REVERB

Add space and ambience, or throw your sounds into a completely new dimension



LiquidSonics Reverberate CM
- Convolution reverb with real-world presets and processing controls
- Import your own impulse response
- AU/VST, 32-/64-bit

liquidsonics.com

PSP Audioware cmDelay
- Modulatable delay with LFO
- Dial in delay time, filtering and width
- Feedback and ping-pong operation
- Based on the full stompDelay
- AU/VST/AAX/RTAS, 32-/64-bit

pspaudioware.com

JMG Sound/United Plugins Hyperspace CM
- Algorithmic reverb
- Three modes, nine parameters
- Edit using a Character XY Pad
- AU/VST, AAX, 32-/64-bit

unitedplugins.com

PLUS

Acon Digital CM Verb
- Based on Acon Digital's Verberate
- AU/VST, 32-/64-bit

acondigital.com

Ignite VST Areena
- Beautiful algorithmic reverb
- AU/VST, 32-/64-bit

ignitevst.com

Surreal Machines Microfuse
- Delay/reverb hybrid plugin
- AU/VST, 32-/64-bit

surrealmachines.com

MULTIEFFECTS

Get your creativity all in one place with these all-purpose plugin effects

Subsonic Labs Wolfram CM
- Pitchshifting, distortion, phase-shifting, panning, delay and filter
- Flexible modulation
- AU/VST, 32-/64-bit

subsoniclabs.com

LVC-Audio T-Chain CM
- Take your choice of six effects
- DynoPhuzz CM distortion effect
- Two dynamics processors to try
- EQ, ClipShifter and filter effects
- Customisable waveform display

lvcaudio.com

HY-FX CM
- Choose one of 22 processors
- LFO, Envelope Follower and Sample & Hold modulators
- Wet/dry mix for parallel processing
- PC/Mac, AU/VST/VST3

hy-plugins.com

PLUS

Inear Display Eurydice CM
- Stutter, buffer and edit signals
- Buffer override, repeat, delay, bitcrusher and filter with modulation
- AU/VST, 32-/64-bit

inearddisplay.com

Tek'it Audio CrossDr CM
- Three independent bands of drive
- Drive, Warp, Crush and Clip signals in three parallel bands
- AU/VST, 32-/64-bit

tekit-audio.com

EFFECTS *Continued*

DISTORTION/SATURATION

Warm up your signals with these saturators, waveshapers, clippers, guitar amp/cab sims and more

Klevgrand Stark CM
- Guitar/bass amp with 3-band EQ
- Dual-mode cabinet section
- Ambience stage with three sizes
- Pedal FX slot with 14 processors
- AU/VST/VST3

macOS Catalina update in progress
klevgrand.se

Kuassa Amplifikation 2 CM
- Twin-channel guitar amp
- Three cab models
- Flexible mic positioning
- AU/VST/VST3/AAX, 32-/64-bit

kuassa.com

NoiseAsh SpeakerSim CM
- Four speaker models
- Onboard EQ and HP/LP filters
- Internal limiter and distortion
- In/Out level, Mono/Stereo
- VST/AU/AAX, 32-/64-bit

macOS Catalina ready!
noiseash.com

Sonimus Satson CM
- Classic mixer channel emulation
- Subtle warming saturation
- Gentle, musical high/low filters
- Full Satson Buss also available
- AU/VST, 32-/64-bit

dsp.sonimus.com

Rop Papen RP-Distort CM
- Five crunchy distortion algorithms
- EQ, dynamics, widener, modulation
- Filter and parallel processing controls
- AU/VST, 32-/64-bit

robpapen.com

Audio Assault GrindMachine CM
- Five amp and ten cab emulations
- 3-band EQ plus depth and presence
- Djentbox to tighten low tunings
- AU/VST, 32-/64-bit

audioassault.com

Cableguys WaveShaper CM
- Graphically editable distortion
- Design curves by dragging nodes
- Input vs output oscilloscope
- Not based on an existing plugin
- AU/VST, 32-/64-bit

cableguys.com

PLUS

Kuassa PreMix CM
- Preamp drive with Baxandall EQ
- AU/VST, 32-/64-bit

kuassa.com

Audiffex STA Enhancer CM
- Valve-style signal exciter/enhancer
- AU/VST/AAX, 32-/64-bit

audiffex.com

Audio Assault BassAmp CM
- Ampeg-inspired bass amp sim
- AU/VST/AAX, 32-/64-bit

audioassault.com

Mercuriall U530 CM
- Emulation of ENGL's E530 preamp
- AU/VST, 32-/64-bit

mercuriall.com

HoRNet Graffio CM
- Flexible three-flavour distortion
- AU/VST/VST3/AAX/RTAS, 32-/64-bit

macOS Catalina ready!
hornetplugins.com

Lindell 6X-500 CM
- Classic preamp emulation with EQ
- AU/VST, 32-/64-bit

lindellplugins.com

Shattered Glass Audio Inferno CM
- Two analogue preamp models
- AU/VST, 32-/64-bit

shatteredglassaudio.com

OTHER

More esoteric and incredibly useful plugins from recent issues of **cm**

Auburn Sounds Panagement CM
- Psycho-stereo toolkit plugin
- Place sounds with Binaural Pan
- Edit perceived distance and width
- Stereoise mono sounds
- AU/VST, 32-/64-bit

auburnsounds.com

JST & Boz SideWidener
- Add stereo width to mono sounds
- Signal retains mono compatibility
- Goniometer for stereo visuals
- Three widen modes, Width & Tone
- AU/VST/AAX/RTAS, 32-/64-bit

joeysturgistones.com
bozdigitallabs.com

New Sonic Arts Freestyle CM
- Host and chain together your **cm** Plugins VSTs
- Route and split signal paths
- Event Player to simple sequences
- Save snapshots of whole setups
- Runs as AU/VST/Standalone

macOS Catalina update in progress
newsonicarts.com

Nyrv Agent CM
- Create custom effects chains with this valuable utility plugin
- Host your VST/AU plugins
- Design your own interface
- Based on the full Agent plugin
- AU/VST/AAX, 32-/64-bit

nyrvsystems.com

Dotec-Audio DeeMonitor
- Handy monitoring utility plugin
- Emulate NS10, Genelec and Auratone 5C speakers in your DAW
- Invert and Solo left and right feeds
- Mid/Side balancing + Output gain
- AU/VST, 32-/64-bit

dotec-audio.com

Inear Display Litote CM
- Granular effect to slice and dice signals on a microscopic level
- Tweak speed and introduce jitter
- Adjust the Timbre Frequency, Feedback and Diffusion
- AU/VST/AAX, 32-/64-bit

inear display.com

HoRNet FreMo
- Mini frequency modulator effect
- Oscillator frequency can be set manually or follow input pitch
- Scale the oscillator from 1x to 10x
- Set mod amount and osc waveform
- AU/VST/AAX, 32-/64-bit

macOS Catalina OK – see folder notes
hornetplugins.com

Audio Vitamins Life CM
- Modulation and widening plugin
- Vary pitch or amplitude with LFOs
- Widen, sweeten and improve audio to a mix-ready state
- AU/VST/AAX, 32-/64-bit

audiovitamins.com

HoRNet Chorus CM
- Modelled on a famous BBD unit
- Three independent delay lines
- Speed, Level and Pan controls
- Analog and Hiss modes
- Input, Output and Dry Level
- AU/VST/AAX, 32-/64-bit

macOS Catalina OK – see folder notes
hornetplugins.com

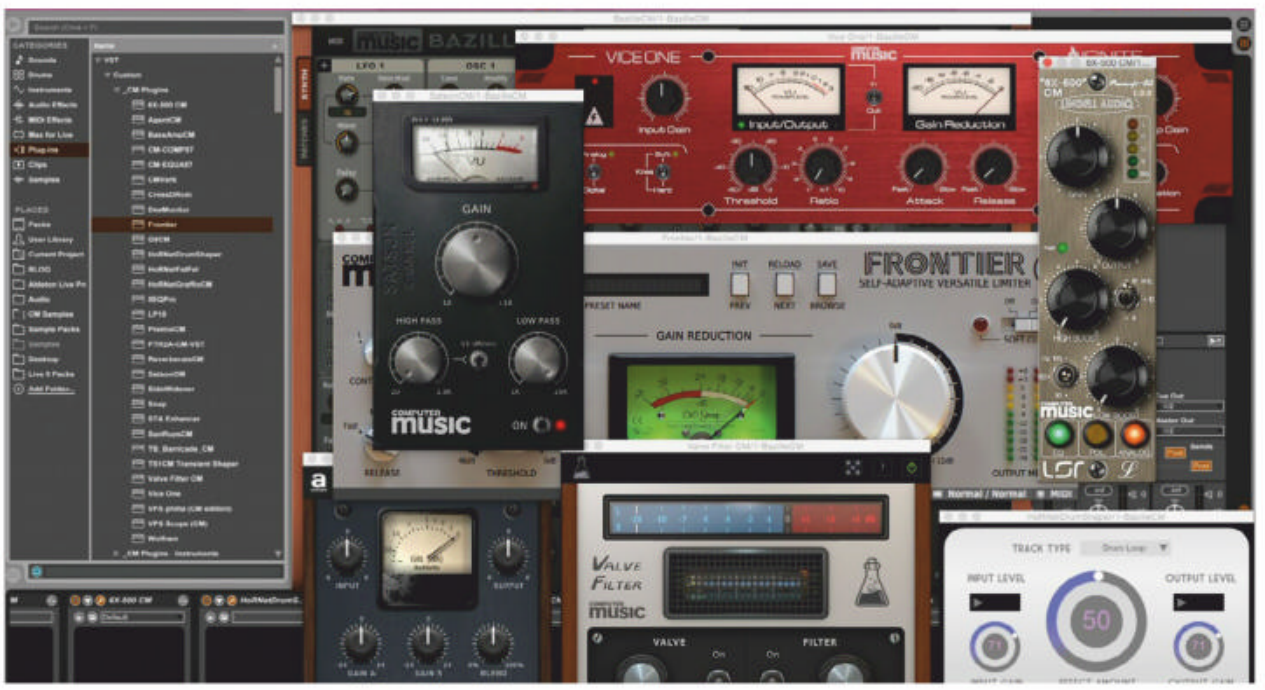
Loading plugins in your DAW

Though there are a wide variety of DAWs, each with its own unique interface, there are similarities when it comes to loading up and using plugins, and most stick to one of two approaches. The first – as seen in Steinberg's Cubase, Apple's Logic, and Cakewalk's Sonar – involves insert slots on a track or mixer channel. These are used in the same way as an insert effect would be used on a hardware mixer. In other words, the effect is placed 'in line' on that mixer or track channel. Plugins might be loaded in by use of a dropdown menu tree or right-clicking in the effects slot. Clicking in the insert or effects slot in some DAWs – Cockos' Reaper, for instance – will reveal a dedicated browser from which the desired plugin may be selected.

It's common to stack multiple effects plugins together to form an effects 'chain', much in the way a guitarist might connect various stompboxes together to form a custom sound. In some DAWs, these effects chains may be saved and recalled at a later time.

If your DAW uses a sidebar browser, here you can find your plugins displayed and possibly arranged into categories. The plugins may be dragged into the project and placed directly onto a track or channel. Ableton Live, Bitwig Studio, Cakewalk's Sonar and PreSonus Studio One can all open effects and even instrument plugins in this manner.

On the subject of instrument plugins, we should discuss the different methods you might encounter when loading up instruments. As mentioned, sometimes they can be dragged and dropped from a browser onto a specific track. However, many DAWs distinguish between instrument and audio tracks, so you'll need to keep this in mind. Those that allow you to drag instruments in from a browser might offer the choice of using an existing instrument track or creating a new one. Some DAWs (Cubase, Sonar) allow you to open instruments in a 'rack' and then connect to them from MIDI or instrument tracks. Others (Logic) make a plugin menu available from the track itself.



See how to load plugins in eight different DAWs with our videos at the URLs below

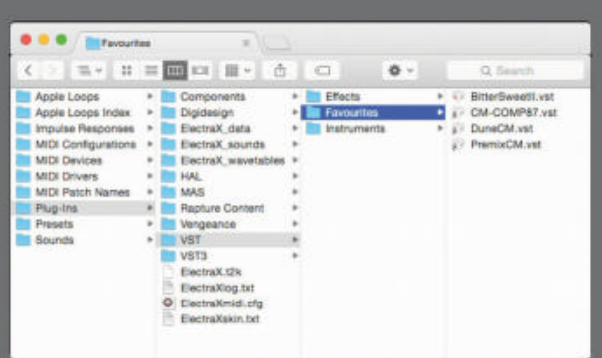
We've prepared videos for eight major DAWs showing you the basics of loading plugins, along with a few handy tips you won't want to miss:

> Cockos Reaper – **bit.ly/LPIreaper**
> Cakewalk Sonar – **bit.ly/LPIsonar**
> PreSonus Studio One – **bit.ly/LPIstudioone**
> Apple Logic – **bit.ly/LPIlogic**
> Image-Line FL Studio – **bit.ly/LPIflstudio**
> Steinberg Cubase – **bit.ly/LPIcubase**
> Bitwig Studio – **bit.ly/LPIbitwig**
> Ableton Live – **bit.ly/LPIableton**

Plugin folder locations

So how does your DAW know where to look for your plugins? Actually, it might not. Mac users have it easy, as there are OS-specified folders into which plugins are installed. These folders can be found by going to your Library folder (if you can't find it, go to the Finder's **Go** menu, hold **Alt**, and a **Library** option should appear). Find the **Audio** directory, and then the **Plug-Ins** folder within. There you will find more folders still. One will be labelled **Components** – this is where your AU plugins reside. Other folders will be found alongside it for **VST** and **VST3** plugins. If you're a Pro Tools user, you'll find your plugins in an Avid or Digidesign folder. If your installers don't automatically install the plugins into the proper folder, you should manually copy them into the relevant folders listed above.

One caveat: there will likely be two sets of folders under two different Library locations. One is for all users, the other is for administrator use. If your DAW has trouble seeing a plugin, you might need to move it from one Library to the other, though the system folder is usually the one to use. Uninstalling plugins from OS X usually requires little more than putting the Component or VST file in the Trash. Sometimes an uninstaller will be offered to you, though.



If you're using Apple's OS X, all your VST, VST3 and Audio Units go into pre-determined locations

On Windows, you can choose the location of your VST plugins folders. Some DAWs will create one when you install them, but both DAW and plugin installers will often give you an option of pointing to the plugin directory you'd like to use. It usually looks something like C:\Program Files\Steinberg\VST Plugins.

Some plugins are delivered as only DLL files, and need to be copied to your chosen directory. Once you've installed your plugins, think twice about moving them. Some plugins rely on support files installed into the same directory. To duplicate plugins elsewhere on the drive, use shortcuts on Windows (right-click to create one) or aliases on Macs (Cmd-Alt-dragging). **cm**

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Catch up on what you've missed – all of these issues include FileSilo downloads!

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May 2020

- Make Music for Free – build a complete studio, for literally nothing
- Audified Tonespot CM
- The Orb interview
- Make EDM, techno and house tracks... for free!

ISSUE 280
April 2020

- Make A Track In An Hour - 24 pages of expert tutorials
- **FREE** IK Vintage Compressor!
- Pete Tong interview
- Jansons in the studio

ISSUE 279
March 2020

- 21st Birthday Special!
- **Best-ever** free sample collection – 8GB, 21 packs!
- 21 Years of Gear
- 21 Essential Production Techniques
- 21 Years of Producers

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- Massive guide on producing perfect vocals
- Beardyman in the studio
- Machine & vox samples!
- More reviews than ever

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- Huge Ableton Live Guide
- Klute in the studio
- Granular synthesis guide
- Psychedelic samples!
- Reason 11 review

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- Modular synthesis course
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- CLiQ in the studio
- Sander Van Doorn – exclusive interview
- Bitwig Studio 3

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- FM Toolkit samples

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- FREE VST/AU multieffect
- Leftwing : Kody video
- Acid Mayhem samples
- David Morales interview
- 909 Sessions
- Early DAWs feature

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- Foley Factory samples
- Mofaux in-studio video
- Bassline House guide
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July 2019

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- 808 Weight samples
- Heist in the studio
- iZotope Nectar 3 guide
- Digital Modular tutorials

MORE BACK ISSUES AVAILABLE

Vault downloads available only from **cm**182 onwards. See **bit.ly/cmvaultfaq**.

A message from *Computer Music* magazine to all of our readers

The next issue of *Computer Music* will not be available from your current stores and newsagents because, in the current climate, there's no guarantee that stores will be open. This means that for the foreseeable future, the only way to get the next issue in print is to subscribe – **see p56 for the latest deals.**

You can also get instant access to the latest issue by buying digitally from these outlets

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zinio.com/gb/back-issues/computer-music-m3730

GOOGLE PLAY (via pocket mags)
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ON SALE WEDNESDAY 20 MAY

We'd like to thank you for your support during these incredible times.
Keep the music coming and stay safe.
The cm team

9 tips for productive production in self-isolation

Many of us have been confined to our homes of late, so here are some irreverent tips to make these hours as musically productive as possible...

> As a music producer you're naturally unfazed by the prospect of spending long periods secluded from humanity, so mental preparation is unnecessary...

01 Create some truly uninspired music

When asked what inspires them, many pro producers will answer along the lines of "inspiration is a myth, bucko!" Well, now here's your opportunity to prove them 100% correct by making some music that's free from even the most basic sources of inspiration.

Thankfully removed from physical contact with other human beings and nature, you're free to explore the utter void that is your inner world, and make the most generic music yet heard by a human being.

Be careful, though: art, literature and human contact are all available via the internet, so be sure to turn off your router before any unwanted thoughts or emotions contaminate your mind.

02 Collaborate with weirdos online

Why not use the internet to find someone online to collaborate with? Online collaboration is superior to its IRL counterpart in that you don't have to look at or listen to the other party's face and voice, and are in fact free to ignore their creative input altogether.

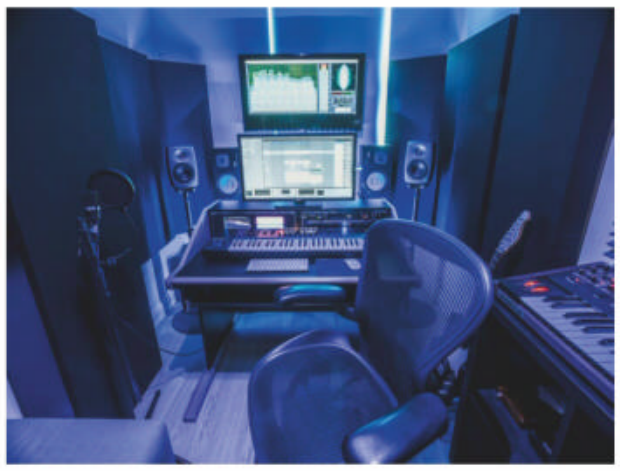
The only downside is that, just like in real life, you have to watch out for less than scrupulous individuals who are only after your cash money. The golden rule here is to not to pay for collaborations, instead searching out potential partners who sincerely share your goal of bringing funky ambient acid to the masses. That way you can both be broke together!

03 Finally learn something about music theory

Since opening your first DAW you've vowed that at an undetermined point in the future you'll knuckle down and learn something about the extremely boring world of music theory.

Merely thinking about inversions, substitutions and augmented 9ths is enough to engender mild soporific effects in even the most motivated and enthusiastic of producers, and picking up a theory book or opening a related video will surely cast you into a theory-induced coma that could last long enough to see you through self-isolation entirely.

Do bear in mind that if you inadvertently retain any theory knowledge you will have ruined the fun of music making for yourself forever. So be sure to make sure you're extremely drunk or high before you start, or at least have access to a *Men In Black*-style 'neuralyzer' device to help remove any unwelcome information.



"...removed from physical contact, you're free to explore the utter void..."

04 Synthesise the perfect snare drum

For years now you've been using real or sampled snare drums like a stupid caveman, but as you're no doubt already aware, the only way to make an authentic piece of art is to construct every single element yourself from scratch.

As such, it's time to engage your gosh darned brain and work out how to replicate the complexities of real world percussion acoustics in a synth. You could spend an eternity deconstructing Rob Swire's Phase Plant presets or watch the Current Value Producer Masterclass, but here's the real scoop: to create the ideal punchy snare sound for any occasion, simply use a white noise oscillator and turn down the amplitude envelope's decay time. You're welcome, internet!

05 Spend your mountain of accrued Splice credits

If you've been using sample subscription service Splice for a while, you've almost certainly amassed a gigantic collection of unused credits. While Splice credits don't expire, the human race might, so you might as well cash them in while your utilities are still functional.

Not only is this a financially savvy move, but what better way is there to impede the onset of insanity by auditioning hi-hats for 12 hours straight? By the end of a single day listening to percussive one-shots, sound and time will have ceased to hold meaning, making the rest of your isolation an exciting journey into the unknown.

06 Clean your equipment

Take a second to gaze around your studio and you may notice that it contains obsolete physical instruments and effects such as Moog Voyagers, Boogs, and of course Volcas. Due to disuse, these remnants of a forgotten past will be covered in a heavy layer of dust, a substance composed almost exclusively of dead human skin and hair. Unless you're making gothic dubstep, this preponderance of morbid decay isn't really going to set the right vibe, so whip out your duster and redistribute the mix of insect faeces and your friends' decomposed epidermises into the air where it's less noticeable, yet all the more breathable.

07 Review old projects

Now is a great time to pause and take stock of your position, so why not try listening to some old projects? This will give you the opportunity to marvel at the lack of progress you've made over the years, flinging you into an existential crisis that will handily distract you from the toilet roll riots that are occurring directly outside your house.

Once you've regained your sense of purpose, make sure to salvage anything useful from your old unfinished work, especially if it was made before you began overthinking everything and your creativity totally disappeared.

08 Prepare for a civilisation-free future

Let's say the unthinkable happens, and human civilisation as we know it ceases to exist. Your first priority is: how will you work on your WIPs?

Assuming your kit hasn't survived the fall of mankind, the first step is to learn how to create computer components from scratch using your bare hands, followed swiftly by the coding of your own operating system and DAW. How long could that take – a weekend maybe?

Once that's sorted, your next move is to brush up on your combat and dune buggy driving skills.

09 Make light of the situation...

If you're, say, hiding from a terrifying virus and it's making you sad, why not strip the infectious agent of its power by satirising it? Like, well, this really. Stay safe out (in) there... **cm**

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"Kilohearts open architecture lets me create nearly anything I can imagine..."

Francis Preve
(Sound Designer)

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"[Kilohearts plugins] changed my life. The simplistic approach is just perfect!"

Zomboy
(Music Producer)

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