Get into

Do you want to make dance music but know little about the mechanics of music creation? Today's modern music software can give you the opportunity to become the next Judge Jules. Ian Waugh tests the software that gets you moving

Technology is a wonderful thing. Word processors have made us all typists, graphics software has turned us into designers, the web has given everyone the opportunity to become an entrepreneur and spreadsheets have turned us all into accountants (well, maybe there are drawbacks after all). And now there is software that can make us all into musicians.

But it's not any old music, it's dance music. Although dance has its roots in many types of popular music, from soul and reggae to funk and R&B, much of it is a product of computer technology, so using a computer to 'compose' it seems fitting.

There are over 100 types of dance music, although if the arms of the music journalists could be twisted far enough the genre could possibly be squeezed into a handful of broad categories, such as house, techno, drum & bass, breakbeat and ambient for those chill-out moments. Virtually all dance music involves processing sampled sounds and linking sampled drum and bass loops into interesting rhythmic and melodic combinations.

So how can a computer help the non-musician produce dance music? Simple – the software supplies hundreds, even thousands, of pre-recorded drum, bass and melody sample loops and all the user has to do is put them together in interesting combinations. The software matches the tempo and key. The process has been likened to painting by numbers, but the results are often surprisingly professional.

The 16 programs we've looked at can be broadly divided into re-mixing software and sample-sequencing software. Some of the programs cover both categories while others have facilities for creating your own drum and melody lines, so you don't have to follow the 'colour scheme' if you don't want to. There are also two programs that specialise in manipulating the core of all dance music – the drum loop.

As these programs will mainly be of interest to non-professionals, we've restricted coverage to affordable software and concentrated on ease-of-use and quality of results.

the mix

contents

• *Sample sequencers reviewed by Ian Waugh*

Aludra **Beat 2000**

BEAT 2000 HAS been around for three years but it still boasts more features than many of the other programs in this group test. If you do a dollar-to-pound conversion it's cheaper, too.

It's essentially a remixer with limited sequencing facilities. Operation is very simple. The main Beat 2000 screen contains 20 tracks or sample slots into which wave files are loaded. The samples are played by clicking on them or by pressing keys on the PC keyboard. Each track has volume and pan controls.

If you record a mix in real time and then select the Pro 2000 screen, you will see 20 tracks, one for each of the samples, and it shows where each one enters and leaves the mix in waveform format. You can adjust the start and end positions of these by clicking and dragging and you can paint in new entries. You can't zoom in, though, for accurate work and the entries don't snap to a bar or beat division.

The Drumatik editor is a separate program and appears in a separate window. It offers a standard drum grid with 20 selectable samples down the left and the grid can be set to one, two or four bars. However, the grid doesn't change; it only limits where the hits can

be inserted. There are only eight divisions per bar, although there is an option to use two bars of one-sixteenth notes, which is better but not ideal. Drum patterns must be saved as wave files and then loaded into the main program so there may be scope for creative editing.

Which brings us to Audiomatik, a separate audio editor program. It's well specified with zoom controls, trim options and a batch converter. It also includes several effects such as echo, chorus, reverse, compress, volume adjustment, fades and pan. The controls aren't very sophisticated, but they do the job.

Beat 2000 strikes an uneasy balance between remixing, sequencing and audio editing. The sequencing is not flexible enough to warrant buying just for that purpose. The ideal user is someone who wants to do remixes (20 tracks are available), use Audiomatik to edit and create wave files and who is happy to edit mixes in the sequencer.

DETAILS
★★★

PRICE $39.95 (approx £25) (order online)
CONTACT Aludra 001 416 638 6989
www.aludra.com
SYSTEM REQUIREMENTS Pentium 60 (100 recommended), Windows 95, 16MB of RAM (32MB rec), 2x CD-ROM drive (4x rec), DirectX-supported sound card
PROS 20 tracks (good for a remixer) and an audio editor
CONS Programs not integrated; limited drum editor and few samples
OVERALL A very usable program but overshadowed by competitors' updates

Best Service **Media DJ**

LOOK AT THE price and you'll probably be wondering what the catch is. Well, the program is a few years old and it's essentially an enhanced version of another Best Service program written with Macromedia Director called Circle Elements. Operation, it must be said, is far from intuitive, thanks to the non-standard and sometimes confusing interface, but once you get the hang of it, you'll be remixing with the best of them.

The main part of the program shows a circle split into 12 segments, each with three subsections. You load samples into the sections and all samples within a segment play back at the same time. In other words it has 12 tracks, each of which can play up to three samples, and you can select which track to play by pressing keys on the keyboard.

Longer samples can cover segments in two or more tracks, but you can also mix tracks together and load the result into a single track to free up space.

The five Livetool buttons at the top of the screen can hold additional samples that can be triggered on top of

the main loop. The program records changes you make during playback in order to record a complete remix performance. Mixes can't be edited but you can do several takes and each one is stored as a macro. A mix can be saved as a wave file for loading into an audio editor or sequencer.

The program has its own file display area which, like most custom displays is not as obvious as a standard file dialog box or Windows Explorer.

Effects can be added to both the samples in the circle and those assigned to the Livetool buttons. They include chorus, flanger, echo, reverse, pitch

change, filter sweeps, fades and scratches. When a sample has had effects applied to it, the settings can be saved allowing you to build up an effects library. The Shredder breaks a sample into eight parts and lets you change the order in which the parts play back.

The manual is essentially a printed version of the Help file, but it's still useful because instead of opening in a separate window, the Help screen obscures the left third of the program window which means you can't always access the functions that it's telling you about.

DETAILS
★★★

PRICE £5 (£4.26 ex VAT)
CONTACT Time+Space 01837 55200
www.bestservice.de
SYSTEM REQUIREMENTS Pentium 90MHz, Windows 9x, 16MB of RAM, CD-ROM drive, DirectX Media Runtime 6.0, Internet Explorer 4.0 or later
PROS Unbelievably inexpensive and includes all the essential remix features
CONS Non-standard operation and atrocious Help system
OVERALL Deceptively powerful for the price but has a clunky interface

Best Service ReLoop 2

LOOPS ARE AT the core of most dance music and ReLoop can turn one loop into many others! To work optimally, it must use loops that can be split neatly into 16 regular segments that it processes individually.

ReLoop has three display modes. The first shows the position of each segment, numbered 1 to 16, and their volume. The second shows three FX settings and a pan control, and the third contains a filter.

The most interesting thing you can do is change the order of the segments, say, swapping 4 and 8 or putting segment 12 in the first four positions. This is a surprisingly effective way of creating new loops from old. Adjusting the volume of each step can also have a marked effect on the loop. Setting individual pan positions means you can make the drums ping around the stereo image. There are three effects that can be applied to each segment: playing in reverse, playing only the first half, and playing the first half twice. All three are mutually exclusive for each segment. The filters can also be used to change the sound dramatically.

As if this wasn't enough, two loops can be processed at the same time, each with its own parameters with a cross-fade slider to balance the volume between them. The Vector Pad is a sort of 2D on-screen joystick that is controlled by the mouse and changes several parameters simultaneously.

A new loop can be saved as a single wave file or as 16 segments to load into a sequencer for further manipulation.

The program has been written using Macromedia tools, which may explain some of the idiosyncrasies. For example, changes to the Filter slider don't take effect until you release the mouse button and the loops are not displayed in waveform format.

It would have been nice if all three display modes could be seen at once and the control areas could do with being larger to facilitate finer control. We also didn't like the way the Reset option takes you back to the Volume display.

These are minor points, but could have turned a good program into a great one. And while in niggle mode, the price does seem a tad high.

But in spite of the niggles, ReLoop 2 performs some fascinating functions that every loop enthusiast will appreciate.

DETAILS
★★★

PRICE £59.95 (£51.02 ex VAT)
CONTACT Time+Space 01837 55200
www.bestservice.de
SYSTEM REQUIREMENTS Pentium 166MHz, Windows 9x, 32MB of RAM, CD- or DVD-ROM drive, 16bit audio card with MME driver, 800 x 600 resolution at 16bit colour depth
PROS Lots of innovative loop processing features
CONS Operational niggles; high price
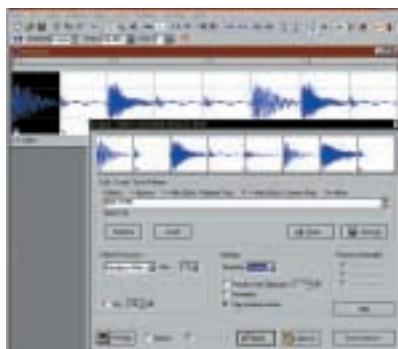**OVERALL** An excellent new-loops-for-old tool, shame about the interface

Button Zero-X BeatCreator

BEATCREATOR IS a loop manipulator designed to work with drum loops, hence the name, but it can be used with any other type of loop, too. In essence, it slices a loop into hits or segments and then shuffles them around.

The slicing bit is critical in order for the program to work effectively. Hits can be recognised in drum loops by the spike in the waveform at the start of each hit. The program finds these slices automatically and it's very accurate, particularly with drum loops. It can also determine the tempo of a loop. However, there are several tools for adjusting and tweaking the slices manually if you need to do so.

In the Rearrange Events window you can change the order of the slices by dragging them from one position to another. Slices can be played in reverse, one slice can replace another and you can randomly shuffle them around. A Lock function fixes events in place so they won't be randomised. This is fun, easy to do and you'd be amazed at the new loops it can produce.

Another tool is the PCP (Pattern Controller Processor) which also shuffles slices around but it can also apply effects to them. These include various filters, bass boost, overdrive and volume changes. The filters in particular can add some terrific filter sweep effects to a sample and volume can be used to produce on/off gate effects.

Effects can be applied to specific slices and the strength of the effect varied between slices. This involves selecting values for each slice from a pop-up menu or you can type in a string of numbers specifying the values. This can be a bit laborious but there are lots of presets and examples.

BeatCreator can add itself to Fruity-Loops' Tools menu to be opened from within Image-Line's package. Loops and slices can be imported into FruityLoops which places the slices on individual channels. The loop will play normally but you can use FruityLoops to change it.

BeatCreator can import wave and SF2 (SoundFont) files – great news for SoundBlaster users. It also allows users without a SoundFont-compatible card to use SFs by importing them, manipulating them if required, and exporting them as a wave file. It can even create a MIDI file for use in a sequencer or with a sampler. This offers additional scope for manipulation. It can also export slices to a hardware sampler via SCSI.

DETAILS
★★★★

PRICE $80 (approx £50) (order online)
CONTACT Button Production 00 46 31 701 72 22
www.beatcreator.com
SYSTEM REQUIREMENTS Windows 95/98/NT4x, the more RAM the better, 16bit sound card, 800 x 600 in 256 colours or better
PROS Good auto-slicing and lots of manipulation functions
CONS Applying effects in the PCP can be a little fiddly
OVERALL An excellent sample loop manipulator

Codemasters **Music 2000**

IT'S MUSIC SOFTWARE, Jim, but not as we know it. At least it's rather different from all the other programs we're looking at here. For starters, it was originally programmed for the PlayStation where it proved to be hugely successful and was only later ported to the PC. The problem with this is that there aren't a lot of music programs for the PlayStation, whereas there are dozens for the PC.

We hit the first snag when we were trying to get the software up and running. Apparently the copy-protection system isn't compatible with some CD-ROM drives – and our review system obviously had one of these installed. We did get it running under Windows 2000 on a Pentium 200 MMX. Perhaps because of this the mouse pointer didn't move smoothly and was difficult to position accurately.

The look and feel has a game-ish appearance. The graphics are chunky and operation is non-standard. But there is a lot of depth to the software. It's a sample sequencer with 99 tracks. You select riffs (short musical phrases) from the riff library and place them on the tracks. However, this doesn't work as you might expect. You can't drag a riff to a track; instead you click on it to select it, the riff library disappears, then you can click on the riff to place it on a track.

There are over 1,000 riffs split into categories such as Beat, Drum 'n' Bass and House. They're very good and some of the demo tunes are spot on. You can create your own riffs in the Riff Editor, which is one of the strongest parts of the program. There are 2,000 samples to play with and they pop up in lists but aren't stored as separate and accessible files anywhere. Odd. You can also rip audio from CDs and add effects to samples.

The program also supports video. You construct video sequences much as you construct riffs and the program comes with a library of video clips. You can also play your own CDs through the program and it will generate video sequences to go along with the music.

The pack includes another program called Music Jam which allows up to four people to jam together either online on a LAN or over the Internet, or you can jam alone. This is essentially remixing where participants use keys to trigger samples.

DETAILS
★★
PRICE £34.99 (£29.78 ex VAT)
CONTACT Codemasters 01926 814 132
www.codemasters.com
SYSTEM REQUIREMENTS Pentium 233MHz MMX, Windows 95, 16MB of RAM, 65MB of hard drive space, Direct X 7.0-compatible video card (3D card for creating videos), 16bit SoundBlaster-compatible sound card
PROS Lots of good riffs; online jamming
CONS May not run on your PC; horrendous, non-standard interface
OVERALL It might have been a winner on the PlayStation, but it really doesn't cut the mustard on the PC

Data Becker **DJ 2000**

DJ 2000 IS ESSENTIALLY a sample sequencing program, but luckily it is awash with features. Pop up the sample library and choose from categories such as Trance, Drum 'n' Bass, Gabba, Pop Music (how did that get in there?), Freestyle, Hip Hop/Rap and House. These open to sub-categories such as arpeggios, bass drum, bass line, hi-hats, lead, hand claps and so on, and then you're down to the actual samples that are simply dragged onto the tracks. The supplied samples in each category are all of the same tempo so they all fit together neatly.

If you fancy a spot of remixing, there's Live Jam which holds 12 samples that can be triggered from the computer keyboard or by clicking on-screen buttons. There are also three slots of one-shot samples. If inspiration is flagging, click the Dice to fill up with new samples and use the Magic Wand to put the program on auto-pilot.

But it's the extra pieces of software that ship with DJ 2000 that make the package. You can create your own loops with BDM 2 (Beat and Drum Machine) by dragging drum and instrument icons into a central area. They all play a little riff but you can change them using a simple track editor.

The DB 303 is based on Roland's TB-303 bass line synth. You create bass lines by clicking hits onto a grid and there are filter controls to adjust the sound plus Dice and Magic Wand for instant inspiration. The Melody Maker works on similar lines, based on a 16-step grid and with a keyboard for entering notes.

The Vocalizer is where you record your voice or other samples and apply effects such as reverb, delay, phasing and flanging. The Wave Editor offers audio-editing facilities and includes similar effects to the Vocalizer plus time-stretch, pitch-shift, fades and reverse.

One neat feature is the XPK Packer Player. Save your mix as a compressed XPK file and send it to friends who can play it even if they don't have DJ 2000.

The program comes with a mammoth 3,000 samples spread over four CDs, so when selecting samples you'll often be prompted to insert a different CD, which is a little frustrating.

The graphics are chunky and the colours dull, which gives the program a *Toy Town* appearance. However, if you ignore the presentation you'll find DJ 2000 a very capable program.

DETAILS
★★★★
PRICE £19.95 (£16.98 ex VAT)
CONTACT Data Becker 01420 22807
www.databecker.co.uk
SYSTEM REQUIREMENTS Pentium, Windows 9x, 16MB of RAM, CD-ROM drive
PROS Tons of features and an excellent price
CONS Lots of CD swapping; chunky graphics and naff colour scheme
OVERALL A feature-packed program that can take you beyond the basics

IK Multimedia **GrooveMaker 2**

GROOVEMAKER HAS BEEN around for over three years but has only recently acquired mainstream recognition. It's the only software we looked at that is also available for BeOS and the Mac as well as Windows.

GrooveMaker is a remixer but with a few differences, the main one being that it can do a remix with the minimum of user intervention. The software skimps a bit on tracks – there are only eight – but by clicking on one of the four Randomix buttons, samples are assigned to the tracks automatically and begin to play straight away. These four Randomix buttons can also be used to randomise the percussion and instrument elements.

Samples are split into seven types such as bass, loop, line and pad, and clicking on a type brings up a list of samples in that group. The Randomix function selects samples from each group. You can make the selections yourself and you can lock samples in order to keep good combinations. Selected combinations can be marked and then dragged into a sequence play list so they play one after another.

You can add melody lines over and above what may be present in the sample with the Arpeggiator. This offers up, down, up/down and random patterns and you select the notes to be played by the Arpeggiator using the on-screen keyboard. Helpfully, this shows which notes are most likely to fit the current song, although you don't have to stick with the suggestions.

You can import loops and a Loop Maker feature helps match the tempo to GrooveMaker's tempo, but this is not carried out automatically. Other features include the Virtual DJ which will automatically create up to four remixes in one go, and then carry on creating more.

The interface is rather futuristic and we found the legend on some of the controls difficult to read. You will need to read the (rather excellent) manual and use the on-screen tutorial as this is the fastest way to get up and running (it's not obvious how to select this – it's the T button).

Once you get the hang of it, Groove-Maker is addictive. The samples are well-chosen and you can have fun seeing what sort of mixes the program generates and take over when it comes up with something interesting. You can also create a complete remix from scratch.

DETAILS
★★★★

PRICE £59.95 (£51.02 ex VAT)
CONTACT SCV London 020 7923 1892
www.groovemaker.com
SYSTEM REQUIREMENTS Pentium 200MHz, 32MB of RAM, 100MB of free hard disk space, CD-ROM, 640 x 480 256-colour monitor, 16bit sound card (SoundBlaster-compatible), PC speakers
PROS Deceptively simple, near-automatic groove creation
CONS Only eight tracks; interface not immediately intuitive
OVERALL The lazy person's remixer – good mixes with little effort

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Image-Line **FruityLoops**

FRUITYLOOPS USES a pattern-based approach to sequencing, rather like analogue drum machines such as the Roland TR-808. You select a pattern from a selection of 999 and program hits by clicking on a row of buttons or dots as the program calls them.

FruityLoops comes in three versions. The standard version is basically for creating drum loops and it includes a simplified Playlist that allows individual patterns to be linked. The Pro version adds a keyboard editor where samples can be pitch-shifted to play bass and melodic lines. It has a graphic editor where fades, pans and filter settings can be drawn in. The Playlist also allows several patterns to be played simultaneously.

The biggy is the TS404 version which includes a bass line synth based loosely on the Roland TB-303, although it has its own sounds and features. It also supports external control via MIDI and you can automate many parameters. In all versions of the software, tracks can be exported as wave and MP3 files.

Patterns can be up to 64 dots long, but every pattern has to be set to the same length. Each track – or channel in Fruity-speak – contains a sample and the program includes some ready-to-go collections. However, you can load any sample, including your own, into any channel. Each channel has its own volume and pan controls and each sample has a Channel Settings window which shows it as a waveform and gives you access to a range of effects, such as reverse, envelope control, filtering, tuning, distortion, reverb and echo. The program also supports DirectX and VST v1.0 (not v2.0 yet) plug-ins.

As well as playing audio samples, patterns can be played via MIDI although most users tend to stick to samples. However, you can also use MIDI to control parts of the program via Controller messages and VST plug-ins can be controlled via MIDI in real time.

Updates seem to be released regularly and we did experience occasional instability on the latest 2.7 update (it could have been our system), but this didn't detract from what is a very powerful program and great fun to use. You only have to listen to some of the demo songs to see what it's capable of doing. No wonder it has become a standard among dedicated dance music creators.

DETAILS
★★★★★

HIGHLY COMMENDED — PERSONAL COMPUTER WORLD

PRICE Basic $35, Pro $70, TS404 $129 (approx £22, £44 and £80 respectively)
CONTACT FruityLoops
www.fruityloops.com
SYSTEM REQUIREMENTS Windows 9x, 6MB of free hard disk space, DirectX 5.0 or later, Windows-compatible sound card with DirectX drivers
PROS Superb features – drum patterns, synth lines, effects, MIDI control
CONS Non-standard Windows interface; fixed pattern lengths
OVERALL A most powerful drum/synth editor capable of generating impressive music

Magix **playR DeLuxe**

A REMIXER but much, much more, this has two 'turntables' each with eight slots into which you load samples. You start playback by clicking on them or pressing keys on the keyboard. You can even load two complete songs into both turntables, cross-fade between them and add the samples in the turntable slots on top! Throw in the ability to mix videos and you have what Magix calls an interactive hi-fi, video and remix system.

And we've still only scratched the surface. Songs can be compiled into playlists, played in sequence by the two turntables and mixed live. There are play and stop controls for each turntable plus a position slider that works as a fast-forward and rewind control. You can use the cross-fade slider to cross-fade between them, just like using DJ decks. The tempo can be adjusted manually but you can also sync one turntable to the other so two songs, originally played at different tempos, match up. A time-stretching function enables you to change the pitch without changing the tempo and vice versa.

The program will hunt down songs on the Internet from specified FTP addresses and MP3 Finder searches for MP3 files by artist or title.

The Organiser can scan your hard or CD drive for songs and create a playlist. You can then edit entries. The program supports the CDDB (CD Database) which accesses an online database to download song and artist info to catalogue the CD. You can also convert songs in the playlist to MP3s but after you've done 20 songs you must pay £5.99 to register for the full Qdesign encoder.

Among the many other features is a 19-channel mixer, an FX studio that supports DirectX plug-in effects, and an audio editor that can rip Audio CDs. The software also has useful functions such as EQ, compression, distortion, reverb, noise reduction, fades, reverse and echo. And there's a video option where avi format or live-feed video can be set up and visual effects applied.

The interface is packed with controls so it's not easy to get to grips with at first. We also experienced a few lock-ups, but only when we were trying to do a number of operations at the same time. Nevertheless, playR Deluxe is an impressive piece of software.

DETAILS
★★★★

PRICE £29.99 (£25.52 ex VAT)
CONTACT Magix 020 868 3704
www.magix.net
SYSTEM REQUIREMENTS Pentium 200MHz, Windows 9x/NT/2000, 32MB of RAM, 100MB of free disk space, CD-ROM drive, DirectX 6.1, 800 x 600 resolution with 16bit High-Colour, 16bit sound card
PROS Turntable mixing; video; Internet support; audio editor; effects; music organiser
CONS Complex operation; not totally stable
OVERALL It's difficult to imagine a DJ type not loving this

Arranging techniques

Even though many of the programs we're looking at here are designed to make 'instant' music, there's still an art to putting loops together. If you're just starting out, here are some suggestions, but feel free to improvise and go where your feet and ears take you.

One way to build a track through remixing is to start with a drum loop. Play it for four or eight bars and then add a bass line. Play the two for four or eight bars, then add a vocal. Unless it's a very interesting vocal, you might just want to play this for four bars and take it out of the mix. As you do so, add an arpeggio for four bars. Take this out and add a pad.

Now here's the good bit – stop the drum and bass parts so just the pad is playing in the background and add another sound, say some percussion. Play this for four or eight bars and then bring in the drums and bass again. Get the idea?

It's quite common to see mixes that build up in this way, but they just keep on building and building without dropping out any of the parts. In the end they have nowhere to go!

If more tracks are available, as they usually are with sample sequencing, you can be more creative with the drum parts. The idea is to build up a drum track using individual drums, in much the same way as remixers build up a song.

Start with a kick drum (or bass drum as they say in Blyth). It needs to play an interesting pattern; it doesn't have to be original, just interesting. For example, a two-bar pattern could have a hit on each beat of the two bars (quarter notes) but four beats on the last beat of the second bar (one-sixteenth notes).

Play this for, maybe, eight bars and then add hi-hats on the offbeat, that is in between the main beats. After another eight bars, add hand claps on beats two and four. You could then bring in some additional percussion, say, congas, industrial sounds, metallic noises or whatever fits the style of the music.

That's your basic drum rhythm, now you can add a bass line and other instruments as described above.

The sounds play a major part in dance music, too, so hunt out those deep, dark kick drum samples and moody snares.

The art of putting loops together takes a bit of getting used to, but practice makes perfect!

Making Waves Audio **Making Waves**

THIS PRODUCT IS a strange, but surprisingly powerful combination of sequencing and sample playing. At first glance the interface seems intuitive and inviting, but once you start to use it, all is not as it seems.

The left of the screen shows tracks that can be designated to use loops, one-shot (non-looped), percussion or note samples. You can change a designation at any time and you need to be in the right mode to work on the sample correctly. For example, with a percussion sample the track shows a small percussion editor where you can click hits onto a grid. To create a drum part you'd use several percussion tracks.

The Note Editor brings up a large grid marked with note names. You create a melody or bass line by clicking hits onto the grid or via a MIDI keyboard. A track can also be designated an effects track and the program has an impressive range of over 20 effects, such as compression, delay, distortion, pitch shifting, flanging reverb and two types of filters. The effects controls are quite simple and based around Windows
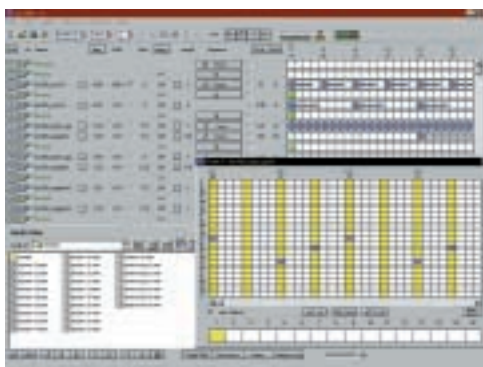
dialog boxes, rather than the graphic displays we would have preferred.

To the right of the track list is a grid layout split into bars. You simply click onto the grid where you want that track's sample to play. There are cut, copy and paste functions so it's fairly easy to extend a composition. You can also group tracks to change their volume or effects settings in one go rather than tweaking settings for each track.

A Chord sequencer helps you avoid the hassle of fiddling about in the Note Editor trying to create chords. The Note Editor can also be put into timesplicing mode where each pitch plays different

parts of a sample. You can adjust effects levels, and a cut-off sequence feature lets you switch off effects for selected parts of a bar. This can be used to create interesting rhythmic effects through rapid on/off changes in volume or cut-off point on the filter and gate effects.

There are mixers for levels, stereo positions and effects, and dozens of pop-up windows for all sorts of functions. A bit more integration would have made the software easier to use.

In spite of its idiosyncrasies, Making Waves is a powerful program, but you'll need to spend time to get the most out of it.

DETAILS
★★★★

PRICE £39.99 (£34.03 ex VAT)
CONTACT Making Waves Audio
0870 303 030
www.makingwavesaudio.com
SYSTEM REQUIREMENTS Pentium or equivalent, Win 95/98/NT4, 16MB of RAM, CD-ROM drive, 16bit sound card, SVGA display
PROS Drum parts and melodies easy to create
**CONS** Not intuitive and some operations could be better integrated
OVERALL A powerful if somewhat non-standard program that takes time to learn

Mindscape **Pro DJ**

ALTHOUGH PRO DJ is one of the least expensive programs in our test, it proves that you can't judge a program by its price. Essentially it's a sample sequencer. Sample loops are listed down the left of the screen and split into categories, such as bass, beat, claps, drum, hi-hats, piano, strings, synth and vocals. Clicking on a category expands the entry (although this is not as neat as Windows Explorer), and you can audition loops and then drag them onto the tracks to the right. The program starts with a dozen tracks and adds more as you fill them up. Samples can be moved and copied by dragging, and extended to any length.

Each sample has a Properties window where you can set the start and end points, volume and pan position. There are also cut-off and resonance controls here. The interesting thing is, you can create different settings for the start and end of a loop and the program will morph between them giving instant filter sweeps, dynamic panning and fades.

Hidden in the depths of the Settings menu is an option to activate surround sound (if your sound card supports it).
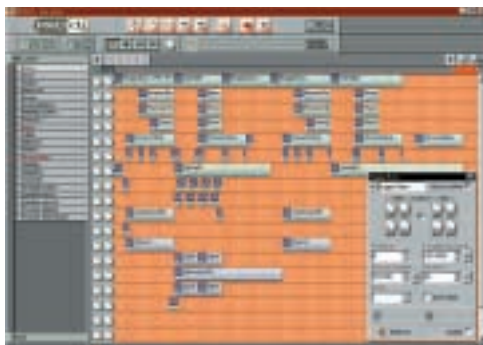
There's also an option to use WinAmp plug-ins although these effects are applied to files on disk rather than in real time to samples within the program, which defeats the object of the exercise.

You can record your own files but there are no edit features here at all, although there is an option to link to a wave editor of your choice. There's a similar option to link to a loop editor.

To import wave files, you place them inside the Pro DJ Samples folder on your hard disk. You can add folders and reorganise the samples and the changes will appear in the samples list. The samples that ship with the software are excellent and varied as the demo songs

prove. The Collect Samples function will gather all the samples used in a song into one directory.

The program can also play video alongside the music. You can choose an avi file to play and add your own video files to the video directory. Special text files are used to control the video and if you want to get your hands dirty, you can create these, too.

At least one software games developer has had a hand in the production of Pro DJ and this shows in some of its functions and operations, however the program is still very usable.

DETAILS
★★★

PRICE £9.99 (£8.50 ex VAT)
CONTACT Softkey 01664 481 563
www.softkey.co.uk
SYSTEM REQUIREMENTS Pentium 166MHz or faster, 16MB of RAM, quad-speed CD-ROM drive, SVGA monitor with 1MB SVGA display card, Windows-compatible sound card, DirectX-certified drivers for video and sound (DirectX supplied on disc)
PROS Good collection of samples; easy to use
CONS A little short on extra features
OVERALL Basic and inexpensive sample sequencer capable of good results

Mixman **Mixman Studio**

MIXMAN WAS ONE of the first programs to popularise computer-based remixing and, although new versions have added a few bells and whistles, its modus operandi hasn't changed. The main screen shows two turntables, each with eight 'pads' or tracks. You can assign a sample to each of these tracks. The remixing is done by pressing keys on the keyboard to start, stop and loop the samples. It's as simple as that. If you really get hooked, Spacetoys produces a hardware version of the turntables for around £99, which is much better for hands-on mixing.

In addition, the basic version, Mixman Studio, offers realtime control over volume, pitch, panning and tempo. When you have created a mix, you can export it as a wave file or as an MP3. It also supports SF2 (the SoundFont format), RealAudio's R2 format and its own Track format. This slices up the samples so each slice contains a single hit or note. Load this into a sequencer and you can change the speed of the loop without changing the pitch simply by increasing the tempo. Cubase VST currently supports the Track format. Mixman, however, has very basic recording facilities and you'd be better using a shareware editor for recording.

Mixman Studio Pro has added features such as an Effects Studio where effects can be applied to individual samples, a sequencing screen and an editor that can edit mixes. This is one of the biggest misses in the basic version because if you make a mistake doing a mix there is no alternative but to start again from scratch.

There's also a Mac version called Mixman Studio Mac. It's equivalent to the basic PC version but with a few extras such as realtime MIDI control. But even with these, the Mac premium seems a little high. In fact, the whole range has recently seen a price hike which takes the edge off its appeal.

The program comes with a good range of samples. These are of excellent quality, covering lots of dance genres such as House, Hip Hop, Jungle, Acid-Jazz and Techno. There are a few decidedly non-dance types, too such as R&B, Country and World, although some of these mix well with the main styles. However, there are not many samples and you will need more if you want to produce a few mixes in a particular genre without being repetitive.

DETAILS
★★★★

PRICE £29.95-£59.95 (£24.49-£51.02 ex VAT)
CONTACT Spacetoys 0141 634 0996
www.spacetoys.net
SYSTEM REQUIREMENTS PC version: Pentium II 233MHz or faster, Windows 95/98/2000, 32MB of RAM, 40MB of hard drive space (275MB for full install)
PROS Easy to use and with quality samples
CONS More tracks/samples would be better
OVERALL Remixing doesn't get much easier than this

Propellerhead **ReBirth RB-338 V2**

THE ORIGINAL REBIRTH emulated two Roland TB-303 bass line synths and a TR-808 drum machine, hence the 338 in the name. Version 2 added a TR-909 drum machine but the name stayed.

These are remarkable emulations. They look like the originals, but more importantly sound like them. Each machine has to be programmed in a similar way to the hardware units on which they are based. The system is pattern-based and each module supports 32 patterns that can each consist of 16 steps of notes. This means you select a pattern and then enter a drum or bass line by clicking on a button to select the step and then clicking on more buttons to select the note – just like the real thing.

However, its authenticity is also its drawback because programming is fiddly and there are easier ways to get the same result using software samplers and sample-based drum software. But, its adherents claim, that's to miss the point. ReBirth embodies the true spirit of analogue synthesis.

Although the main sections are hardware emulations, there are some software concessions. For example, each instrument has a mixer section with pan, volume, distortion, filter, compression and delay controls. The effects in particular can enhance the sound.

You can also twiddle the controls in real time and record them. This is primarily used with the cut-off and resonance filter controls in the 303 sections that produce classic filter sweep effects electro music pioneers recorded the old fashioned way – onto tape!

If you want a change from standard sounds, you can apply a Mod which can change both ReBirth's appearance and the samples it contains.

Although many people produce entire 'songs' using ReBirth, others want to add other sounds such as synths or vocals and effects. You can do this by exporting the pattern as a wave file or by syncing the program to a sequencer. If the sequencer supports ReWire (as do Cubase VST and Logic), it ensures rock-steady synchronisation and Rebirth's output is fed to its mixer where more effects and processing can be applied.

ReBirth, quite simply, is a classic and if you like retro, you'll love this. However, if you're new to music on the PC there are other easier ways to do what it does, without the fiddly pattern-based programming.

DETAILS
★★★★

PRICE £149 (£126.81 ex VAT)
CONTACT Arbiter Pro Audio 020 8207 5050
www.propellerheads.se
SYSTEM REQUIREMENTS Pentium 90MHz, Windows 95/98/NT, 16MB of RAM, 16bit audio card. For full use of all features and/or integration with Steinberg Cubase VST, a faster CPU and more RAM is required
PROS Excellent Roland instrument emulations at a fraction of the price
CONS Fiddly to use
OVERALL A classic drum and bass line emulator for analogue retro fans

PXD Musicsoft Dance eJay 2

THE UPPER PART of eJay's main screen shows 16 tracks while the lower part lists the samples, which are dragged onto the tracks to create a song. A track can hold several different samples unlike some software that reserves one track for each sample.

There are 12 types of samples, such as loops, drums, bass, guitar, rap, voice, and effects. You can import samples but there's no provision for recording within the program. However, there are many freeware or shareware audio editors.

Samples automatically snap to the nearest bar, which makes positioning them easy, and you can adjust the start and end positions of a sample by dragging markers within the sample itself. Each sample has its own volume control, too, and there's a mixing desk where the volumes of each track can be adjusted and channelled to the left or right stereo speaker.

The Groove Generator is a drum editor for creating patterns that run through the song. The drum grid is limited to 16 notes which may be fine

for a lot of music, but as you advance you might find it restricting. You can select the 10 samples to be used in a drum set, set individual drum volumes and pan positions, make a sample to play in reverse, and apply filtering, echo and distortion to the overall kit.

The Effect Studio applies effects to individual samples. Options include a filter with overdrive, echo, robotise, distortion and volume. The pitch can be changed but this is accompanied by a corresponding change of tempo, limiting its usefulness. However, there is also a separate time-stretching section where the duration or tempo of a sample can

be changed without a corresponding change of pitch, which is more useful.

There are several other eJay programs, the main difference being that the samples are dedicated to a particular dance genre. There's Hip Hop 2 and Techno, plus three Megapacks.

The program looks like it was designed with Mickey Mouse's paintbox. The whole thing screams 'fun', not 'pro' but this does a great injustice to the power and capabilities of the software. Dance eJay is fun to use, extremely intuitive and in spite of the colour scheme, it can also produce some great-sounding songs.

DETAILS
★★★★

PRICE £29.99 (£25.52 ex VAT)
CONTACT FastTrack 01923 495 496
www.fasttrack.co.uk/www.ejay.com
SYSTEM REQUIREMENTS Pentium or higher, Windows 9x or NT4, 16MB of RAM, 40MB of free disk space, quad-speed CD-ROM drive, 800 x 600 screen, 256 colours, sound card (compatible with Direct Sound)
PROS Easy to create great-sounding songs
CONS Dodgy colour scheme – wear shades
OVERALL Fun software you simply can't go wrong with

What the professionals use

Although the software we've reviewed is aimed at the non-professional, we'd be surprised if more than one artist had not whiled away a few hours playing with some of them.

Dance music was traditionally created with hardware samplers such as those by Akai, Roland, Yamaha and Emu. Many dance music creators are DJs rather than performing musicians, and using hardware does not require a knowledge of notes and music theory. It does, however, require a good ear and a good sense of sound and rhythm.

Although many dance musicians still use hardware, an increasing number are turning to software. It's more powerful, essentially easier to use and much cheaper, too. Samples are still used for the core of the music and many people use professionally produced sample CDs. However, the dedicated and 'true' dance music producers

create their own samples and process existing samples.

The software they use includes ReBirth as reviewed here, which is very popular with the Acid and analogue synthesis fraternity; and Sonic Foundry's Acid Pro, the upmarket version of Acid Music, which is used to create sample sequences. Sample editing and processing are performed with dedicated audio editors such as Steinberg's WaveLab, Sonic Foundry's Sound Forge and Syntrillium's Cool Edit 2000 on the PC and Bias' Peak and TC Works' Spark on the Mac. Other tools include Steinberg's ReCycle for both PC and Mac which can split a loop into its component samples, allowing you to substitute one sample for another and process individual samples within the loop.

To bring everything together, most musicians use one of the major sequencers such as Cubase VST, Logic Audio or Cakewalk. These all integrate audio and MIDI

recording, allowing synth modules to be easily added to the production. Even if a song is totally sample-based, these sequencers have excellent multi-track arranging facilities, and many audio-editing and processing functions, too.

Many musicians are moving towards software samplers that integrate into the sequencing environment. These include BitHeadz' Unity DS-1, Seer Systems' Reality, Nemysy Gigasampler, and Emagic's new EXS24.

There is a host of digital audio plug-in software that also becomes part of the recording

Pros hack samples together with tools such as Sound Forge and Akai samplers

environment that can totally transform a sound. These range from common effects such as reverb, delay, chorus, flanging and phasing, to sonic enhancers that boost the bass frequencies, heavy filters to produce sweeps, and audio processors such as GRM Tools that can take a sample apart and reconstruct it as the audio equivalent of Frankenstein.
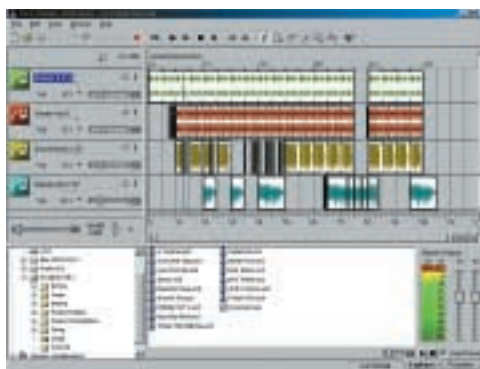
Experimentation is still the name of the game.

Sonic Foundry **Acid Music 2**

ACID WAS THE first sample sequencing software to target the professional and serious amateur musician market – it also had a price tag to match at £249. Sonic Foundry has since upgraded and split Acid into high- and low-end products. Acid Pro 2 retains the serious focus of the initial product, while Acid Music 2 is aimed more at those starting out in the sample sequencing world. Acid Music flavours cover different genres of dance music and work exactly like the pro version but have fewer features.

Acid Music 2 supports an unlimited number of tracks – each sample in a song is given its own track. Whenever you want a sample to play, you simply paint it onto its track. Automatic time-stretching and pitch-shifting can be applied to the sample sequencing process, so a sample can fit a tempo without changing its pitch or you can adjust the pitch of a sample without changing its length.

This isn't magic – the information is stored in the wave file. Sonic Foundry's audio editor, Sound Forge, and its smaller brother, Sound Forge XP, both have features for setting the time-stretch and pitch-shift attributes of a wav file. Nevertheless, Acid Music will have a pretty good bash at working these out itself from raw wave files so you don't need to edit every sample.

There are eight built-in effects, however, DirectX plug-ins like Acid Pro are not supported so you can't add any more. The volume and pan position of each track can be adjusted individually.

Songs can be saved in wave, MP3, Windows Media and RealMedia G2 formats. Surprisingly, it also has a burn to CD option which is great for writing a few songs, but the serious CD compiler will want more control over the tracks.

Other Acid flavours include Acid Rock, DJ, Hip Hop, Techno and Latin and come with around 600 samples. They also support an unlimited number of tracks, but lack Acid Music's onboard effects and CD burning feature. At £39 each, however, potential buyers may not see that as a serious problem.

The design of all the programs very much says 'pro' and they are a delight to use. Serious users will want Acid Pro, but for the rest of us one of the Acid packs will keep us out of mischief for ages.

DETAILS
★★★★★

PRICE £39-£79
(£33.19-£67.23 ex VAT)
CONTACT SCV London 020 7923 1892
www.sonicfoundry.com
SYSTEM REQUIREMENTS 133MHz processor, Windows 9x/NT4/2000, 32MB of RAM, 8MB of free hard-disk space, CD-ROM drive (for installation from a CD), Windows-compatible sound card, DirectX Media Runtime 6.0, Windows-compatible sound card, Internet Explorer 4.0 or later
PROS Powerful software, intuitive to use
CONS No support for Direct-X plug-ins
OVERALL Serious sample sequencing software at an affordable price

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Techland **Future Beat 3D**

THIS PIECE OF software is unique in that it supports 3D audio. Samples can be positioned in 3D space using the 'radar' display situated at the bottom of the screen. It also supports environmental audio on sound cards such as the SoundBlaster Live!

The main screen shows the Simple Editor which is essentially used for remixing. The program can hold up to 64 samples that are organised into four banks of 16. Up to 16 samples can be remixed at any one time by assigning them to the 16 buttons in the middle of the screen and then clicking on them or triggering them via MIDI. Each one can be positioned in 3D space by putting a cross on the display below. The position can also be changed in real time by dragging the cross while recording.

The Track Editor is for sample sequencing. It contains one track for each of the 64 samples and you just place samples on the tracks by drawing them in. This offers greater control over the creation of a mix. The program automatically time-stretches new samples to match the first one loaded.

The Solo Composer is a kind of sample player. The screen shows a five-octave keyboard. Sample instruments are assigned to the keys and notes are clicked onto a grid to create melodies. You can also control this via MIDI, too. It's not quite as sophisticated or straightforward as a dedicated software sampler, but it is useful nonetheless.

There is also a grid-based Drum Editor that can hold 20 drum samples. Drum patterns are created by clicking hits onto the grid of 32 sections. It always runs at the same tempo as the current song, which is useful. There is a 'stop beat' feature that stops a drum sample playing, a similar effect to muting the drum track by hand.

You also get a separate wave editor program with simple edit functions that can add effects such as echo, delay and chorus. It can also generate waveforms such as sine, square, sawtooth and triangle.

The program's interface is a little lacklustre, but otherwise it has a good range of features and it's certainly capable of producing good-quality results. The 3D effects are very interesting and add another, er dimension, to the output. If you want 3D, this is the only program in this group test that offers this facility.

DETAILS
★★★

PRICE £20 (£17.02 ex VAT)
CONTACT Techland 00 48 62 7372228
www.techlandsoft.com
SYSTEM REQUIREMENTS Pentium 133, 16MB of RAM, 16bit sound card supported by Direct Sound
PROS Remixing, sequencing, drum and melody editors plus 3D audio
CONS Uninspiring interface
OVERALL Very usable program and the only one with 3D support

Table of features

Manufacturer	Aludra	Best Service	Best Service	
Product	Beat 2000	Media DJ	ReLoop 2	
Price (ex VAT)	$39.95	£5 (£4.26)	£59.95 (£51.02)	
Distributor	Aludra	Time+Space	Time+Space	
Telephone	001 416 638 6989	01837 55200	01837 55200	
URL	www.aludra.com	www.bestservice.de	www.bestservice.de	
Platforms	PC	PC	PC, Mac	
Remixing	✔	✔	N/A	
Sample sequencing	✔	✗	N/A	
Drum editor	✔	✗	Specialised	
Melody editor	✗	✗	Specialised	
Audio editor	✔	✗	✗	
Number of tracks	20	12	N/A	
Effects	✔	✔	✔	
Time-stretch	✔	✔	✔	
Export as audio	✔	✔	✔	
Save as MP3	✗	✗	✗	
Number of samples	290+	2,000+	1,000+	
Record your own	✔	✗	✗	
Import Waves	✔	✔	✔	
Other CDs available	✗	✔	✗	
MIDI support	✗	✗	✗	

Table of features

Manufacturer	Magix	Making Waves Audio	Mindscape	
Product	playR DeLuxe	Making Waves	Pro DJ	
Price (ex VAT)	£29.99 (£25.52)	£39.99 (£34.03)	£9.99 (£8.50)	
Distributor	Magix	Making Waves Audio	Softkey	
Telephone	020 8868 3704	0870 303 030	01664 481 563	
URL	www.magix.net	www.makingwavesaudio.com	www.softkey.co.uk	
Platforms	PC	PC	PC	
Remixing	✔	✗	✗	
Sample sequencing	✗	✔	✔	
Drum editor	✗	✔	✗	
Melody editor	✗	✔	✗	
Audio editor	✔	✗	✗	
Number of tracks	16	128	Unlimited	
Effects	✔	✔	✔	
Time-stretch	✔	✔	✔	
Export as audio	✔	✔	✔	
Save as MP3	Limited	✗	✗	
Number of samples	1,000+	2,000+	1,200+	
Record your own	✔	✗	✔	
Import Waves	✔	✔	✔	
Other CDs available	✔	✗	✗	
MIDI support	✗	✔	✗	

BUTTON PRODUCTION	CODEMASTERS	DATA BECKER	IK MULTIMEDIA	IMAGE-LINE
ZERO-X BEATCREATOR	MUSIC 2000	DJ 2000	GROOVEMAKER 2	FRUITYLOOPS
$80	£34.99 (£29.78)	£19.95 (£16.98)	£59.95 (£51.02)	Basic $35, Pro $70, TS404 $129
Button Productions	Codemasters	Data Becker	SCV London	FruityLoops
00 46 31 701 72 22	01926 814 132	01420 22807	020 7923 1892	N/A
www.beatcreator.com	www.codemasters.com	www.databecker.co.uk	www.groovemaker.com	www.fruityloops.com
PC	PC, PlayStation	PC	PC, Mac, BeOS	PC
N/A	✔	✔	✔	✗
N/A	✔	✔	✗	✔
Specialised	✔	✔	✗	✔
Specialised	✔	✔	Arpeggiator	✔
Specialised	✔	✔	✗	✔
N/A	99	32	8	Unlimited
✔	✔	✔	✔	✔
✔	✗	✔	✗	✔
✔	✔	✔	✔	✔
✗	✗	✗	✗	✔
0	3,000+	3,000+	1,000+	1,100+
✗	✔	✔	✔	✗
✔	✔	✔	✔	✔
✗	✗	✔	✗	✗
✔	✔	✗	✗	✔

MIXMAN	PROPELLERHEAD	PXD MUSICSOFT	SONIC FOUNDRY	TECHLAND
MIXMAN STUIDIO	REBIRTH RB-338 V2	DANCE EJAY 2	ACID MUSIC 2	FUTURE BEAT 3D
£29.95-£59-95 (£24.49-£51.02)	£149 (£126.81)	£29.99 (£25.52)	£39-£79 (£33.19-£67.23)	£20 (£17.02)
Spacetoys	Arbiter Pro Audio	FastTrack	SCV London	TBA
0141 634 0996	020 8207 5050	01923 495 496	020 7923 1892	00 48 62 737 2228
www.spacetoys.net/www.mixman.com	www.propellerheads.se	www.fasttrack.co.uk/www.ejay.com	www.sonicfoundry.com	www.techlandsoft.com
PC, Mac	PC, Mac	PC	PC	PC
✔	N/A	✗	No	✔
Some versions	N/A	✔	✔	✔
✗	✔	✔	✗	✔
✗	✔	✗	✗	✔
✗	✗	✗	✗	✔
16	N/A	16	Unlimited	64
Some versions	✔	✔	✔	✔
✗	N/A	✔	✔	✔
✔	✔	✔	✔	✔
✔	✗	✗	✔	✗
550+	N/A	1,000+	600+	1,000+
✔	✗	✗	✔	✗
✔	✔	✔	✔	✔
✔	✗	✔	✔	✗
✔	✔	✗	✔	✔

Editor's **Choice**

Picking an overall winner from these 16 packages has not been an easy task because some only offer remixing or sample sequencing, while some offer both, and others are dedicated to loop manipulation. The best package for you depends on what you want to do and how you want to work. With only one exception, we felt all the programs have something to offer so it's worth looking at them all before making a buying decision.

For example, if you're only interested in remixing, there are several packages to choose from. A major consideration here is the number of samples you get with the program. You can always buy additional CDs, but the more you get with the program initially, the more varied your palette of sounds will be right from the outset. DJ 2000's 3,000 samples is an impressive number and to find 2,000 in Media DJ represents remarkable value for money.

If you'd like the program to help, GrooveMaker and DJ 2000 can perform automatic remixes, although this may leave you wondering what your purpose in whole grand scheme is – other than to listen to the results.

Magix's playR DeLuxe is very different to the other products on test because it combines all sorts of facilities for audio playlist organisation and maintenance plus MP3 searching. And you can remix and cross-fade between two songs in a very similar way to how DJs work.

If you're primarily interested in manipulating loops, ReLoop 2 and Zero-X BeatCreator are the programs to look at. They can turn a loop inside out, upside down and back-to-front. They're both useful, but BeatCreator has the edge in terms of flexibility and price, and it looks more professional than ReLoop.

The winners

If picking an overall winner was hard, the Highly Commended awards were even more difficult. Notwithstanding our general feeling that the user interface should be based on Windows standards, we felt that FruityLoops has enough power and high-end features to warrant a Highly Commended award.

It combines drum, bass and synth-line creation with a super set of dance music samples. Other samples can be used and saved with the song for easy distribution to other FruityLoops users. It has effects, very powerful synth-type controls and it can save songs directly as MP3 files for posting on the Internet. It uses a pattern-based approach to music creation and while it may not be everyone's preferred method, many users who don't 'read the dots' will find it intuitive.

Although many people like working with patterns, many others prefer the more 'traditional' approach of sequencing where music parts are laid out on tracks. This makes it very easy to see where the parts fit in relation to each other. This is the way most professionals work and becoming familiar with sequencing principles stands you in good stead should you later want to move a step up the music production ladder. Of course, there's no reason anyone should not use a combination of methods, as those who use ReBirth do when they run it in tandem with a sequencer.

Bearing in mind our ease-of-use criteria, we found the eJay series hard to beat and it gains our second Highly Commended award. If you're not particularly music literate or if you just want to 'have a go' at creating dance music this will do the job without taxing your grey matter or your wallet too much. Don't be misled by the colour scheme and layout which suggests it's aimed at the younger user. It's a very competent program that is fun to use. It almost defies anyone not to put some loops together to create a good dance tune.

Like eJay, many pieces of software in our test support sample sequencing, but we have decided to give the Editor's Choice award to Acid Music 2. The ease and simplicity with which samples can be arranged on the tracks, coupled with the automatic adjustment of tempo and pitch to match the song make this a delight to use. It features pro effects, and the ability to save files in MP3 format makes it ideal for preparing music for posting on the Internet. If you want to expand your music-making potential, there is a large range of add-on CDs and you can 'Acidise' your own loops with the Sound Forge or Sound Forge XP editors.

Although other programs work in similar ways, Acid Music's Windows-based design will be familiar to all PC users. It uses a standard Explorer-based window for selecting samples instead of trying to reinvent the wheel like some of its competitors do when it comes to menus and dialog boxes.
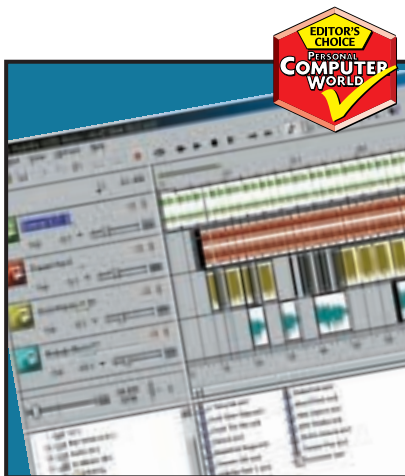
Easy-to-use Acid Music includes pro effects
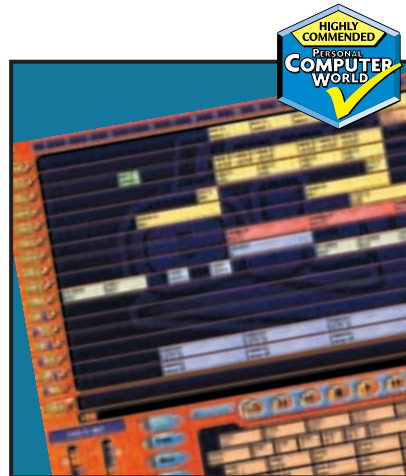
eJay is fun to use – check out the loops

FruityLoops has a lot of high-end features