Fig 2 A typical gating rhythm, two semi-quavers followed by a quaver, seen as note lengths

Generation X

Koan Pro, which randomly generates musical ideas, is now in Silver, Gold and Platinum formats and active on the internet. Steven Helstrip tuned in and turned on to its ambience.

From the letters and email I receive, it has become apparent that the occasional hardware review would be appreciated on these pages. So from on, I'll be on the look-out for new and appealing products to put to the test.

For this issue, I got my hands on the stunning ZA2 digital audio card from Zefiro Acoustics, which you, too, can lust after once you've checked it out. We also have news of an emerging audio standard for the internet, some useful MIDI tricks, the customary sampling CD review and a stack of goodies to enjoy on this month's CD.

Koan Pro

Last year I met up with Brian Eno to see how he was using Koan Pro to write generative, ambient music. Koan, which I wrote about in March 1996, randomly generates and develops musical ideas for up to nine hours at a time, and all from a modest 100Kb file. Eno later released an album of "Koan" music. It wasn't available on CD, however. It came on a floppy disk.

On the disk was a jukebox-style utility and enough music to last the weekend. Using only an AWE-32 as the sound source, there was only so much you could expect, but the music was interesting enough owing to the random nature of the Koan engine: each time a track was played, it would develop differently. In fact, you would never hear the same piece of music played twice.

Twelve months on, Koan has been adopted as a new, low-bandwidth music format for the internet. To help the format along, a new application has been developed to allow even the most modest of musicians to create generative music.
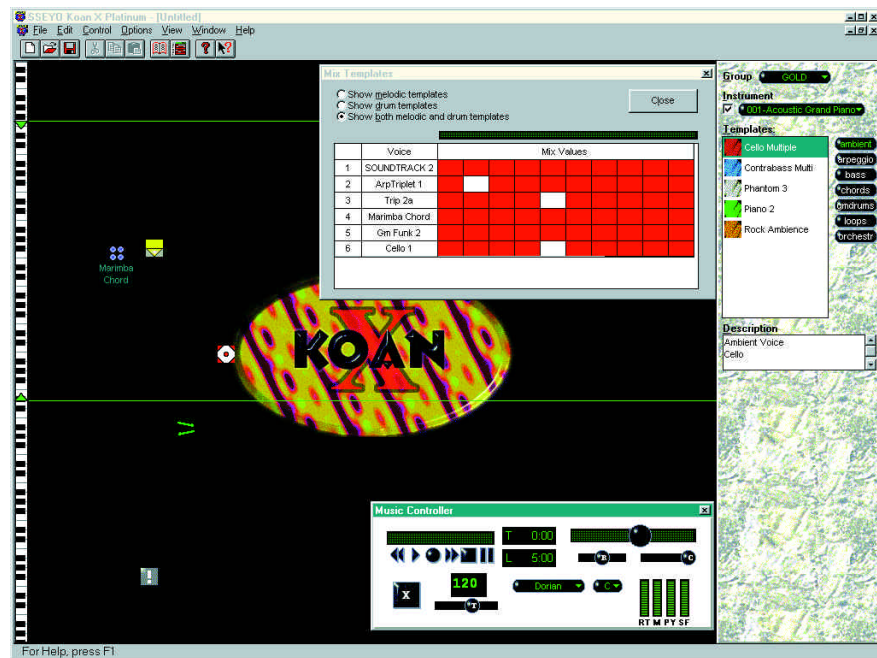

Fig 1 Koan X Platinum: Create "ever-changing" music easily by dragging pre-recorded phrases, or templates, into the mix window. Templates exist for most styles of music, from ambient through to techno. By applying rules to the templates, your music can take on a life of its own...

The new software, Koan X, comes in three flavours: Silver, Gold and Platinum. The Silver edition can be obtained as a free download from the sseyo web page and comes with 30 musical templates to be used as starting points for your arrangements. Although it's a radically cut-down version, it can be used to produce up to two minutes of music — ideal for creating free music for web sites. Gold provides 30 further templates, General MIDI and Soundfont support, and better editing facilities. It will generate up to eight hours of music. The Platinum version, shown in Fig 1, has it all: 100 templates, automated muting/mixing, and the ability to output songs to either MIDI or wav files.

You can find a copy of the Koan X Silver on this month's CD. Gold and Platinum versions are available from sseyo's website, www.sseyo.com, via secure credit-card transaction, priced £15.99 and £32.99 respectively.

Trigger happy

The only good to come out of studio noise was the invention of the gate. This is a hardware device, usually rackmounted, that turns the input signal from a noisy keyboard, say, to either on or off. When closed, no sound can pass through, reducing cumulative noise. When triggered by an audio signal, the gate reopens.

A neat feature found on some gates is the ability to open the gate from an external trigger, enabling you to create rhythmic patterns from any sound. This is a prominent feature in today's dance music, used frequently with synth pads and vocals. When a sustained chord is routed through a gate, a sound source from a second keyboard can be used as the gate trigger. By playing or sequencing a pattern on the trigger, some great effects can be created.

It is possible, using MIDI volume messages, to create a similar effect, although it cannot cure any problems you have with noise. A typical rhythm used for gating is two semi-quavers followed by a quaver, repeated over and over. This can be seen in Fig 2 as note lengths. Be aware, however, that note lengths should be reduced by 50 percent, to allow the gate time to open and close. If they are legato, the gate will remain open.

■ Newtronic gates

Newtronic has produced a compilation of 100 MIDI gating effects, along with panning and volume fade effects, available on floppy for £14.95 (Fig 3). The disc contains some excellent syncopated rhythms which are superb to have at hand. To use them, you import the MIDI file to your sequence and set the MIDI channel to where you want the effect. The panning effects, likewise, are not to difficult to program, but save you time and aggro.

Zefiro Acoustic ZA2

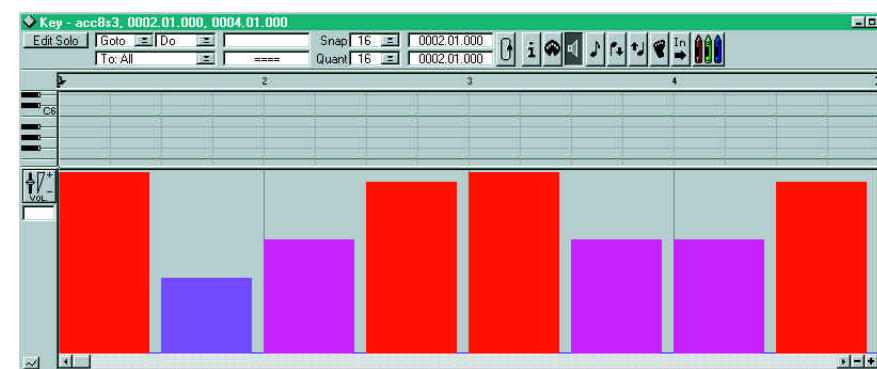To record audio to your PC without adding noise in mountain-sized proportions, the analogue to digital conversion must be performed by an external ADC, such as a DAT player. The ADCs found on sound cards just aren't up to the job, and even if they were, they would be subject to interference from the myriad goings-on inside your PC.

The Zefiro Acoustics ZA2 is a new DSP-based digital audio card designed to work alongside any digital source, be it a sampler, DAT machine or another hard-disk recording system. The single 16-bit ISA card provides SPDIF, Toslink fibre-optic and AES/EBU digital in/out as standard, and is supplied with DSP utilities to support 20-bit recording and MPEG2 playback. Providing your PC has two high DMA channels available, the ZA2 will work in duplex mode and has no problem handling as many audio tracks that your PC can throw at it.

Installing the card was straightforward, even with two other sound cards present. The accompanying driver software, seen in Fig 4 (page 306), can be accessed effortlessly from the Task Bar: such a simple idea and it works a treat. The icon also indicates whether or not the card is synced to an incoming digital clock.

All digital outs on the ZA2 function simultaneously: inputs are software selectable. There's also an analogue output for monitoring. With some help from the DSP, the ZA2 will up or down sample data, enabling real-time sample conversion. For example, you can feed a 48kHz DAT stream to the card, but actually record at 44.1kHz. Likewise, you can play a mono, 11kHz, 8-bit sample from disc and output to DAT at the

Fig 3 Newtronic's collection of MIDI gating effects will help you get the rhythm right

Creative Essentials' World Class Breaks

World Class Breaks is the fifteenth CD to be released under the Creative Essentials label. Like the rest in the series, a mere 20 quid buys you 200 samples, in this case drum loops in both audio and 16-bit sample format for Windows and Mac systems. Ten genres of dance music have been covered: hip hop, swing, acid jazz, house, garage, and jungle are among them.

For each of the ten styles there are twenty loops. These are essentially four grooves, with five variations on each, but this is no bad thing since it enables you to vary the drum patterns throughout your songs. Each of the four grooves within each style are tempo-grouped with 5bpm intervals.

John Dunne, the producer, seems to have hit the nail on the head with the swing, acid jazz and seventies funk patterns, but seems to have lost the plot with the house and garage patterns, which lack imagination and are stale in comparison.
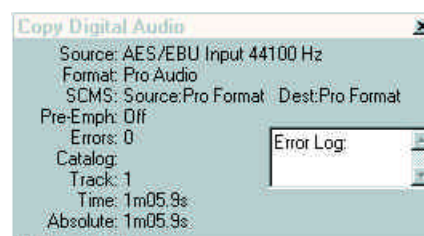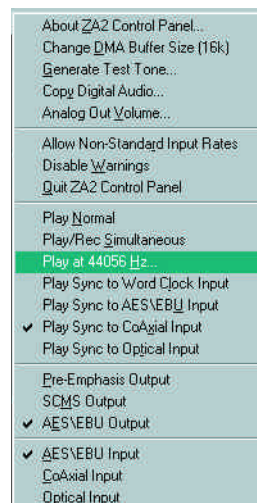
Taking the overall package into account, though, this is still a great CD at a great price. The samples used to create the loops would have been appreciated, but isn't that the usual story?

There are five loops on this month's cover CD in the hands\sound folder. Have fun!

standard 44.1kHz 16-bit stereo.

The ZA2's OS is downloaded to the card at system boot, allowing the card to be upgraded with new software which will be made available on the net free of charge. DSP algorithms are also in development, making real-time effects such as EQ and reverb possible in the near future. Hard-disk backup software is supplied with the card, enabling 1.2Gb to be stored on a standard two-hour DAT.

I've had two weeks to check this card out, and it's been a joy. I no longer need a digital patch bay, since I have had the DAT plumbed-in on the AES/EBU and the sampler on SP/DIF. I'm assured that multiple cards work together with Samplitude and SAW to provide up to six independent outs, although I don't suppose Zefiro would let me have another two cards to check it out...

Zefiro Acoustics has succeeded in putting together a truly versatile and future-proofed card at a superb price. It could show the CardD a thing or two.

Fig 4 The driver software which accompanies the Zefiro Acoustic ZA2

PCW Contacts

If you have any hints or tips, MIDI-related items or general comments, contact **Steven Helstrip** at the usual *PCW* address or email him at sound@pcw.vnu.co.uk

Newtronic 0181 691 1087
World Class Breaks £19.95 (inc. VAT and delivery) from Time + Space 01442 870681
Zefiro Acoustics ZA2 £397 (inc. VAT) from RKMS 0115 961 1398; www.rkms.com