MT

THE MUSIC TECHNOLOGY MAGAZINE

Issue 87
Jan 1994

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EXPLORE
WATCH
RESUME
QUIT

Peter Gabriel's Xplora 1

the CD-ROM revolution raises ahead of steam

The Perfect Computer

your search starts here...

Future Sound Of London

future vision of technology

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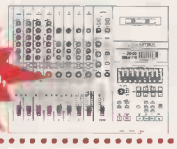

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Paul is our keyboard guy of the year. Can you spot his location for a gig-tastic prize?

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IN

the first place

Uppermost in our minds during the lengthy deliberations which accompanied the restyling and realignment of *MT* back in August, was the achieving of a layout which would go some way to reflecting the visual excitement of the music with which the magazine is associated. As we have been at some pains to point out, an increasing number of contemporary musicians have come to realise the importance of visual imagery and we have seen it as our task to bring their efforts to your attention by whatever means we have at our disposal.

This, of course, has resulted in a magazine of vastly different appearance, and one which we are constantly trying to gauge reaction to. Similarly, the directional changes which have placed multimedia, clubtech and lighting equipment next to reviews of more traditional *MT* products such as synths and samplers, are also awaiting judgement from the people whose opinions we value most highly – our readers. Although – and indeed because – we do not consider this stage in the magazine's development to be anything like at an end, we would be more than grateful to receive a little feedback from you, the reader, so that we can more accurately map out the future over the next twelve months. It is with this in mind that I would ask you to complete the questionnaire for this year's Readership Survey – our most vital means of canvassing your opinion and of 'tailoring' the magazine to suit your needs. As an added inducement, there's a rather excellent competition associated with the survey which should help brighten the winter months for at least some of you. But for everyone, there's an opportunity to have your say and play some part in determining the direction of the magazine.

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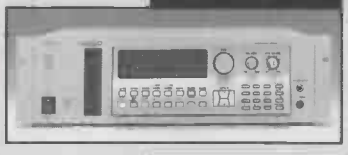

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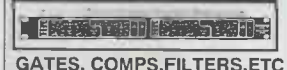

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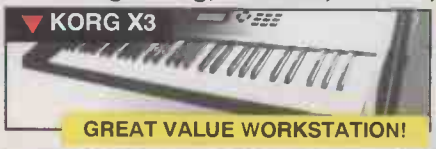

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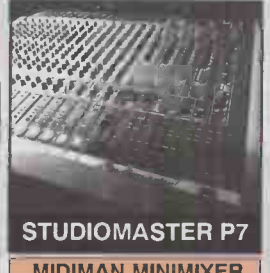

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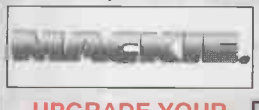

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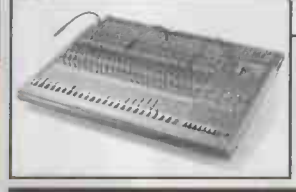

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KRCS BETT on music

KRCS Group plc, the UK's biggest Apple authorised reseller with 1992 sales of £30 million, is to open a specialist music division in the New Year, with technical and software support provided by Oscar Music.
To begin with, the division will focus on the education market, with which KCRS already have strong links. The KCRS/Oscar Music partnership have developed an education package aimed at both individual teachers and music departments, with a one–year telephone support hotline to be provided by Oscar Music.
The package will be based around a Mac LC or higher, with a 14" high-res RGB monitor, minimum 80Mb hard drive, keyboard and mouse, and will also consist of a velocity-sensitive keyboard, an 'appropriate' sound module (probably GM/GS) and two software packages – Notator Logic for sequencing, and Clarisworks for general admin work.
Also included with the package will be a specially written introductory manual and Clarisworks templates aimed at music teachers: for instance a class list, an instrument database and a simple timetable. A Stylewriter II inkjet printer and powered monitors will be optional extras.
KCRS Music will be launched in January at the BETT '94 educational show, which is being sponsored this year by KCRS. Teachers attending the show will have an opportunity to win the above package by entering a prize draw.
KRCS will also be co-operating with the Gateway School of Recording and Music Technology to make Gateway's training initiatives available to their customers.
For more information, contact KCRS Music's Mike Mirrlees on 071 248 1525.

Showcase yourself – in Canada

If you're an unsigned original performer, Music West are making you an offer you can hardly refuse. Every year, the Music West Festival in Canada solicits submissions from developing artists in Canada as well as from around the world. The Festival features over 200 performers, providing an opportunity for new artists to meet and to showcase themselves in front of talent scouts and other influential industry professionals.
The 1994 Festival will take place from May 12-15 in conjunction with an international music conference and exhibition in Vancouver, British Columbia. To be eligible for a showcase position, you must be currently performing original material live. All submissions must be accompanied by a completed Music West application form and a $10 processing fee, and must be received at the Music West office before February 15th.
To request your application form, contact Scott Swan or Louise Watson on tel: 0101 604 684 9338, fax: 0101 604 684 9337.

Analogue action (1)

Novation Electronic Music Systems, the UK company responsible for the popular MM10-X and Midicon controller keyboards, have entered the world of sound-generating modules with a new analogue bass synth, the Bass Station.
Housed in the same lightweight, compact casing as the MM10-X, the Bass Station features a 25-key velocity-sensitive keyboard with full-size keys, a monophonic dual-oscillator sound source, and a MIDI implementation which allows the keyboard to transmit polyphonically.
Each of the two oscillators can be assigned a square, sawtooth or pulse waveform, with the width of the latter modulatable manually or from LFO or Envelope 2 sources. The two oscillators can be detuned against one another, while the second oscillator can be tuned +/-12 semitones for octave and other interval effects; you can also vary the volume balance of the two oscillators.
The single filter has a 5Hz-10kHz cutoff range, and a resonance control which can be set from zero to self-oscillation; additionally you have variable +/- control over Envelope 2 and LFO modulation depth.
Envelope 1 and 2 ADSR controls let you set attack, decay and release times, together with velocity-sensitivity control.
The pitchbend wheel can be assigned a range from 0-12 semitones, while the controller wheel may be set to control LFO mod depth and/or filter cutoff frequency and to transmit MIDI modulation, volume or aftertouch data.
Eight user-programmable patches can be stored onboard the Bass Station, while patch and setup data can be transmitted and received via MIDI as SysEx dumps.
The Bass Station is set to retail at £299.99 including VAT.
For more information contact Novation Electronic Music Systems Ltd at The Ice House, Dean Street, Marlow, Bucks. SL7 3AB, tel: 0628 481992, fax: 0628 481835.

Akai make new connections

In today's increasingly integrated hi–tech musical world, no machine, it seems, can be an island. With the recently released v2.0 and forthcoming v3.0 software (due first quarter of '94), Akai are ensuring that their DR4d hard disk–based recording system is well connected.
With version 2.0 software loaded, the DR4d can synchronise to video or audio tape recorders which provide a SMPTE/EBU timecode source, locking in less than a second with the optional IB112T board fitted.
Version 2.0 also improves control between multiple DR4d units, supporting the new DL4d remote controller.
Working in conjunction with several leading MIDI software companies, Akai will be adding MIDI Machine Control and MIDI Time Code capabilities to the DR4d, along with full remote MIDI SysEx editing.
DR4d owners can also expect to see much faster remote sample editing for their machine, as Akai are currently working on a SCSI-B protocol to this end.
For more information, contact Akai Digital at Haslemere Heathrow Estate, Silver Jubilee Way, Parkway, Hounslow, Middlesex TQ4 6NQ, tel: 081 897 6388, fax: 081 759 8268.

End of the line

If you've been thinking of buying a Roland JD-800 synth – you know, the digital one with all the knobs and sliders on it – then now might a good time to turn thought into action. Roland UK have received their final delivery of the instrument – and, they say, "we have it on good authority that Roland Japan will not be making anything like this again for the foreseeable future."
For more information, contact Roland (UK) Ltd at Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ, tel: 0792 310247, fax: 0792 310248.

Professional DAT from HHB

HHB Communications have now secured UK distribution rights for Panasonic's SV3700 professional DAT machine, following Panasonic UK's decision not to continue importing it themselves.

The SV3700 is engineered to fully professional standards, featuring XLR analogue I/O with high-performance 1-bit A-D converters, switchable 44.1/48kHz sampling rates, AES/EBU digital I/O, a shuttle wheel and infra-red remote control.

You can buy the SV3700 from HHB or the company's authorised dealers for £1399 excluding VAT.

For further information, contact HHB Communications Ltd, 73-75 Scrubs Lane, London NW10 6QU, tel: 081 960 2144, fax: 081 960 1160.

The Cubase MIDI Studio

Steinberg have developed an optional software module for Cubase 3.0 on the ST which allows you to configure your entire MIDI setup at the press of a button.

The StudioModule MIDI–studio Manager software adds four new windows to Cubase: Studio Setup, Memory Manager, Bank, and Macro Edit. The first of these windows allows you to define your setup, including all MIDI connections and MIDI patchbays, while the second provides library handling functions, with instrument–specific load, save, send and receive operations; you can choose between different file formats and append a comment to each file.

The Bank window allows you to view all the memory contents of your connected MIDI devices by name, and to send patch changes by clicking on relevant names; with the StudioModule software loaded, you can also select patches by name within Cubase's Arrange window. A General MIDI map is included with the software, making it easy to select sounds on any GM/GS module.

Finally, the Macro Edit window allows you to edit selected parameters on a number of MIDI devices using onscreen sliders; more than 80 device drivers are included as standard with StudioModule, and you can also create drivers of your own. Also included as part of the StudioModule package is CueTrax, a modular implementation of the Cubase Mastertrack.

Macintosh and PC versions of StudioModule are planned. StudioModule for the ST costs £159 including VAT.

For more information, contact UK distributors Harman Audio at Borehamwood Industrial Park, Rowley Lane, Borehamwood, Herts. WD6 5PZ, tel: 081 207 5050, fax: 081 207 4572.

NOW's not the time

Rhythms Of The Globe, the 36-hour multimedia extravaganza which was set to provide a grand finale for Nottingham's NOW '93 arts festival (see Scanners, MT November '93), has been postponed until some time during Spring – NOW '94.

According to festival director David Metcalf, this was "to ensure that it fulfills its potential as a state-of-the-art multimedia piece." Apparently, the artists involved were being offered more leading-edge technology than they could get to grips with in the time originally available. Nice work if you can get it!

As soon as we get news of a rescheduled date we'll let you know.

VIRTUALLY MORE from Yamaha

More news has emerged concerning the new Yamaha synthesisers reported in last month's Scanners.

The company have developed two versions of their physical modelling software Virtual Acoustic Synthesis: S/VA (Self-oscillation type/Virtual Acoustic) and F/VA (Free-oscillation type/Virtual Acoustic). Each is optimised for a different form of acoustic sound generation.

S/VA is particularly suited to the timbral recreation of instruments which vibrate in response to continuous application of pressure eg. saxophone and flute (wind pressure), violin and cello (bow pressure). F/VA, on the other hand, is best suited to recreating acoustic instruments which vibrate freely in response to a single trigger, eg. guitar, piano, bass, drums and percussion.

The VL1, due out early in the New Year, utilises S/VA synthesis, while the VP1, which will be released next Autumn, utilises F/VA. According to Yamaha, the sound source section of the VL1 consists of three elements. The instrument section generates the basic sound of a real instrument by producing a physical model of it. Then the modifier section 'flavours' this sound with the metallic sound of brass instruments and/or the body resonance of a violin (based on the instrument being modelled). The performer controls the breath strength and mouth shape of wind instruments, or the pressure of a bow on the strings of string instruments, in real time via a controller and envelope section.

VL1 specification

- Keyboard: 49 keys with velocity and aftertouch
- Timbre configuration: one voice with two elements
- Maximum polyphony: two notes

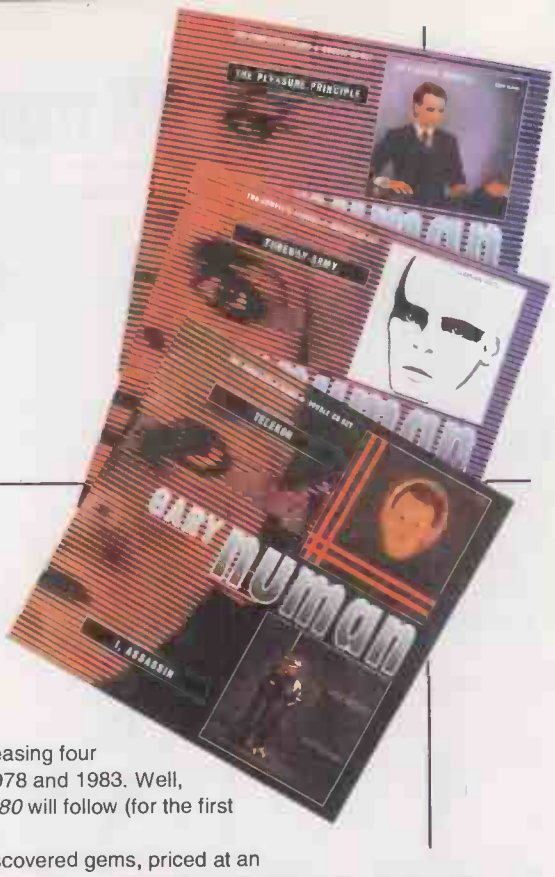
- Performance modes: monophonic, polyphonic, unison
- Modifiers: harmonic enhancer, impulse expander, resonator, 5-band equaliser, dynamic filter
- Effects: modulation type (flanger, pitch change, distortion), feedback delay, reverberation
- Internal memory: 128 voices (16 voices x 8 banks)
- External memory: 3.5" floppy disk drive (2HD/2DD)
- Controllers: master volume, continuous slider x 2, pitchbend wheel, modulation wheel x 2, rotary encoder, LCD contrast adjustment
- Display: 240 x 60-dot backlit LCD
- Connection terminals: L/mono & R stereo outputs, headphones, foot controller x 2, footswitch x 2, press controller, MIDI In, Out and Thru
- Dimensions: 914mm (W) x 380mm (D) x 105mm (H)
- Weight: 12.5kg
- Accessories: BC2 breath controller, FC7 foot controller

Retail price on the VL1 will be around £4000 (the DX1 of the new generation?).

The VP1 will have a 76-note dynamic keyboard, 16-voice polyphony and 4-element voices, and is expected to be even more expensive than the VL1.

According to Yamaha: "The VL1 and VP1 are synthesisers that will change the music scene of the future." Well, they would say that, wouldn't they? However, coming from the company which unleashed the DX7 on an unsuspecting world a decade ago, such a claim needs to be taken seriously – not least by other manufacturers.

For more information contact Yamaha-Kemble Music (UK) Ltd at Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL, tel: 0908 366700.



(Almost) the complete Gary Numan

Numanoids have good reason to celebrate this festive season, as Beggars Banquet are releasing four specially packaged double-CDs featuring every recording made by the pale one between 1978 and 1983. Well, not quite every recording: the two live albums *Living Ornaments '79* and *Living Ornaments '80* will follow (for the first time ever on CD) in the New Year.

Each twin-pack includes a pair of albums plus assorted B-sides, rarities and some newly discovered gems, priced at an extremely generous £11.99. *Tubeway Army* is coupled with *Dance*; *Replicas* with *The Plan*; *The Pleasure Principle* with *Warriors*; and *Telekon* accompanies *I, Assassin* – all with requisite lyrics, sleeve notes and rare photos.

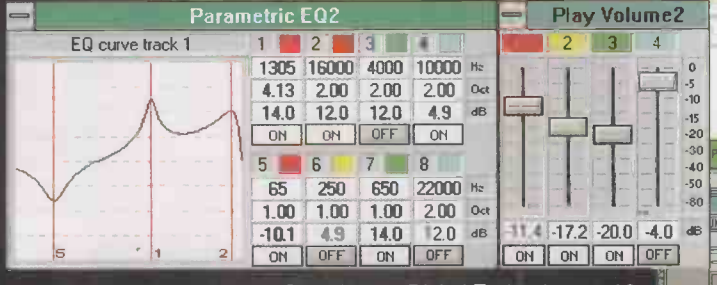
Soundscape UPDATE

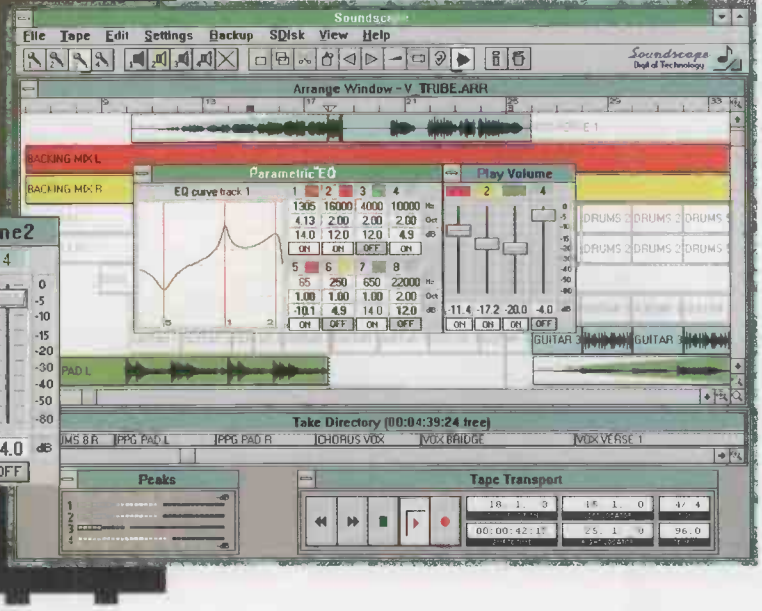
It's not often that you get something for nothing in this world, but now registered users of Soundscape, the disk-based multitrack recording system from Soundscape Digital Technology (reviewed MT July '93) can do just that.

A software update free to existing owners, and included as standard for new purchasers, adds eight independent real-time parametric EQs to the system. These can be applied to a single track or split across several tracks, and the EQ output can be recorded to a new track, freeing up the EQs for use on further tracks.

Also included in the free update is a new fader window which provides control over track volumes amd mute/solo status. Onscreen faders respond in real time to incoming MIDI controller messages, making mix automation possible when Soundscape is used in conjunction with a MIDI sequencer.

Coming in the New Year are further DSP functions such as reverb, delay, stereo compression and timestretch. This upgrade will be charged for, howevever; price £tba, expected to be around £100 to £200.





For more information contact Soundscape Digital Technology at 26 Castell Coch View, Tongwynlais, Cardiff CF4 7LA, tel/fax: 0222 811512.

Circular sound from RSP

Surround sound is getting a lot of attention these days due to the emerging technologies of home cinema, virtual reality and 3D computer games. New entrant into the (sound) field RSP Technologies will be using the Winter NAMM Show in America to demonstrate the 3D properties of their new Circle Sound system, which allows the listener to reposition voices, instruments and sound effects anywhere within a 360–degree audio circle.

For more information, contact Adam Hall, Unit 3, The Corwainers, Temple Farm Industrial Estate, Sutton Road, Southend-on-Sea, Essex SS2 5RU, tel: 0702 613922, fax: 0702 617168.

FLY HIGH

S2 Turbo

S2 Turbo Music Processor
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S2 Turbo Music Processor is available in a 76 - key version (S3Turbo) and in the rack version (S2R Music Processor)

JADER BONFIGLIOLI

GENERALMUSIC

Distributed by: Key Audio Systems Limited, Unit D, Chelford Court, 37 Robjohn's Road, Chelmsford. Essex CM1 3AG **Tel:** 0245 344001 **Fax:** 0245 344002

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Micro-Rent go AV

Long-established Apple Macintosh authorised dealers Micro-Rent plc have formed an audio-visual division called Micro-Rent Music & Video. Already specialist dealers for Roland AVB (Audio Visual Broadcast) and Digidesign, the company are also adding audio equipment from other major distributors to their range – a move which they see as complementing the non-linear video-editing side of their business, which includes such systems as Radius' Videovision Studio and SuperMac's Digital Film.

Most of the products Micro-Rent carry are on permanent demo at the company's purpose-built suite, by appointment only.

For further information, contact Micro-Rent Music & Video at St Marks Studios, Chillingworth Road, London NW7 8QJ, tel: 071 700 3060, fax: 071 607 5102

Analogue action (2)

Studio Electronics, the Californian company which specialises in MIDI/rackmount retrofits of classic analogue synths, have taken the logical next step and released their own analogue synthesiser, the monophonic SE1.

Based on the technology used in the company's MIDImoog/MIDImini and ObieRack synth modules, the 3U rackmount SE1 features three oscillators with a choice of sine, square and triangle waveforms, oscillator sync, a switchable 12dB (like Moog) and 24dB (like Oberheim) filter with resonance, four envelope generators and three LFOs, together with a 99 user-preset memory, a mono output and MIDI In, Out and Thru sockets.

Studio Electronics' new synth also provides extensive real-time MIDI control, transmitting front-panel changes from 25 rotary knobs in SysEx form via MIDI.

The SE1 retails at £1299 plus VAT.

For more information, contact UK distributors TSC at 9 Hatton Street, London NW8 8PR, tel: 071 258 3454, fax: 071 262 8215.

'The 5th rescue service?

InterManual Rescue, the company which aims to provide manual–less owners with the owners manuals they need, are now starting to supply service manuals and schematics for most analogue equipment. So if you fancy customising your kit à la Aphex Twin but you don't know what does what, send out a distress call to IMR.

SAEs should be sent to IMR at Unit 5, The Meadows, Worlington, Suffolk IP28 8SH, or you can tel: 0638 810155, fax: 0638 712702.

Clubbing vinyl to death

Although some DJs still cling resolutely to vinyl, CD usage is becoming more common in clubs and discos – and the race is on to establish the CD equivalent of the Technics SL1200 decks. Denon Professional claim that, with 25,000 machines already installed worldwide, their DN-2000F Twin CD Player has become the world standard. Designed with the help of working DJs and intensively club-tested, the DN-2000F has been voted Best Club CD Player for 2 years in a row by Disco Club International magazine.

Now, in response to feedback from users, Denon are introducing a more advanced model, the DN-2700F, with many additional features – including twin 6-second, 16-bit sampling off CD for instant looping of beats, breaks or whatever takes your fancy.

Other features of the new twin player include a 100-CD digital memory which holds cue points, timing and end points for individual CDs; variable pitch with a choice of +/-4%, +/-8% and +/-50% ranges; a 0.01-second start time from any cue point or track location; twin multi-function jogwheels, with an inner wheel searching CD frames in 1/75th–second steps and an outer ring providing normal FF and Reverse functions; and Denon's proprietary audio circuitry with 18-bit DACs.

The DN-2000F is priced at £999.99 inc VAT, the DN-2700F at £1999.99 inc VAT.

For more information, contact Hayden Laboratories Ltd at Chiltern Hill, Chalfont St Peter, Gerrards Cross, Bucks SL9 9UG, tel: 0753 888447, fax: 0753 880109.

DIY CD ROM from Roland

Well, not quite DIY. But, as from January 1st '94, Roland will convert any user's existing library into a Roland-compatible CD-ROM for a modest cost – providing a whole new incentive for users to invest in a CD-ROM drive. And with drives now available for under £200, that investment needn't be too great.

Additionally, every purchaser of Roland's new S760 sampler will have free and unlimited access to the company's existing Professional CD-ROM sample archive; all you have to do is book time at their Fleet offices, then come along and copy as many samples as you want – or have disk space for.

Roland Japan have developed a new CD-ROM libary for the S760 called the Project Series, consisting of 10 CD-ROM discs available at an RRP of £110 each. Titles include World Music and Keyboards of the '70s and '80s Volumes 1 & 2 – the latter including samples of original analogue sources only available to Roland in Japan. All samples were recorded at 88.2kHz and then digitally converted down to 44.1kHz to maximise sound quality.

For more information, contact Roland (UK) Ltd at Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ, tel: 0792 310247, fax: 0792 310248.

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1 tablespoon butter, melted
1 teaspoon lemon juice
1/2 teaspoon nutmeg

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The Peavey XR®680C

In the world of sound reinforcement, there is nothing more American than the XR 680C from Peavey—not even mom and apple pie. Since its introduction in 1976, this versatile mixer/amplifier has become an American icon in the eyes of countless music makers. Combining the advantages of both state-of-the-art mixer and reliable amplifier, the XR 680C saves the user valuable time, space, and money. Now what could be more patriotic than that?

And what about features? In a word: unbeatable. Peavey's exclusive patented DDT™ (Distortion Detection Technique) compression circuit effectively increases the apparent headroom available and minimizes distortion in the power amp. Massive heat sinks facilitate efficient convection cooling. Tape inputs and outputs afford the user recording and playback capabilities. All this and more—packaged in a durable, 3/4-inch plywood cabinet reinforced with Tolex®* covering and metal corners to withstand the most demanding conditions.

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MIDI goes Multiport

New from Q TEK (UK) Ltd is the MM1 MIDI Multiport MIDI interface for Atari Falcon and ST computers. Providing eight individually-addressable MIDI ports or 128 'virtual' MIDI channels, the MM1 connects to the computer's printer port; you can then connect your printer to the computer via the interface.

Up to four MM1 units can be combined to offer 32 MIDI ports (512 virtual MIDI channels). MM1 software drivers are available for DVPI Session Partner, Freestyle arranger software, MIDIshare Star Track and Steinberg Cubase, with other drivers currently in development.

The MM1 retails for £220 including VAT.

For more information contact Q TEK (UK) Ltd at 99 Douglas Street, Dundee DD1 5AT, tel: 0382 200808, fax: 0382 201111.

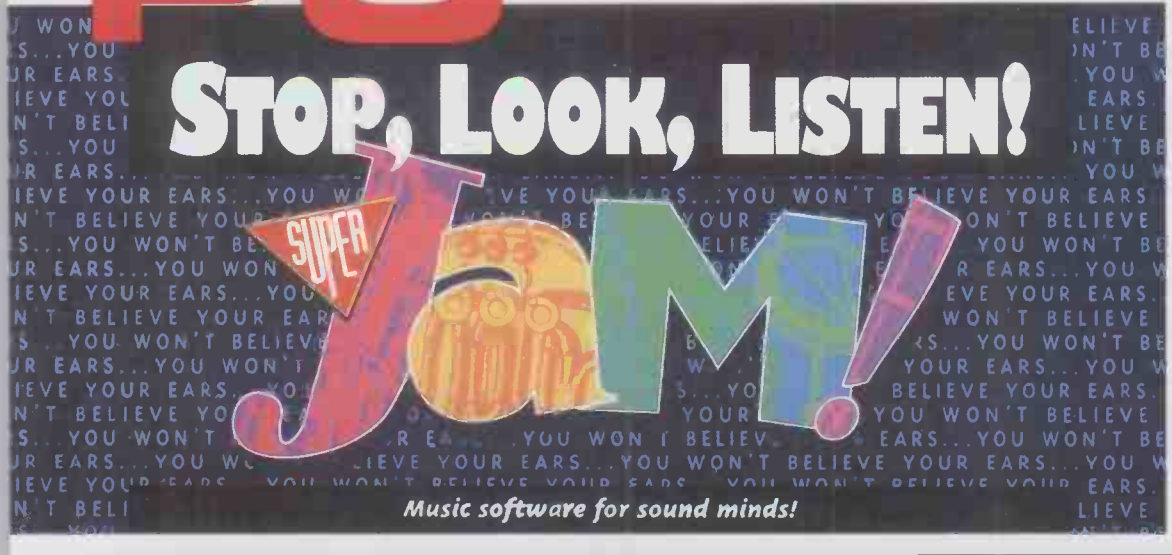
Sampling the good Time

Place an order with sample CD fiends Time + Space and you could end up with more than you bargained for. The company are giving away a copy of Samplemania, their new demo CD featuring an assortment of musical demos and samples, free with every order – together with, while stocks last, a free copy of their Astroglide 202 sample CD. CD-ROM purchasers also get a free copy of the new Time + Space Showcase CD-ROM. This offer is, say the company, limited to one free copy of each sample CD/CD-ROM per household. Time + Space are also extending their offer entitling purchasers of any four T+S sample CDs/CD-ROMs to another sample CD of their choice for free. In this instance the order placed must be not less than £175 total, and the free CD mustn't exceed £54.95 in value.

Time + Space produce a 72-page colour catalogue, free on request, which features details on over 400 products. If you need further help in deciding which sample CD(s) to buy, the company have also compiled a booklet featuring reviews by the specialist music press on over 50 of their products – again, available free on request.

For more information, contact Time + Space at PO Box 306, Berkhamsted, Herts HP4 3EP, tel: 0442 870681, fax: 0442 877266.

JAMMING ON THE PC



Blue Ribbon SoundWorks, the American software company behind leading Amiga sequencer Bars & Pipes Professional and Amiga style software SuperJAM!, have now ported the latter program over to the PC.

SuperJAM! comes with over two dozen musical styles, "from Mozart to Motown, hip hop to bebop, rock 'n' roll to rap and soul" – all custom-designed by professional musicians. An expandable architecture allows you to add new Styles at any time, either by drawing on a library of six Blue Ribbon SoundWorks Style disks (Movie Soundtrack, Pop/Rock, Classical, Cutting Edge, World Music and Dance Mix – £25 each) or by creating your own Styles within the software using a variety of compositional Tools.

You can create your own SuperJAM! band by interactively assigning your choice of instruments to the drum, bass, strings, guitar, piano and solo players, and use the software's graphic mixing grid to adjust each band member's volume and pan position. Songs played in any Style by the software can be saved in Standard MIDI Files format for playback within other MPC-compatible music software.

SuperJAM! works with any Windows 3.1-compatible soundcard or MIDI instrument. The program is priced at £89 including VAT.

For more information contact UK distributors Et Cetera Distribution at Unit 15, Hardman's Business Centre, Rawtenstall, Rossendale, Lancs BB4 6HH, tel: 0706 228039, fax: 0706 222989.

Ensoniq with added weight

Latest workstation to emerge from the Ensoniq stable is the TS-12 Performance/Composition Synthesiser, essentially a TS-10 with the KS32's 76-key weighted-action keyboard in place of the standard 61-key keyboard.

The TS-12 provides 600 Sounds and Presets plus the ability to load sampled sounds from disk or via an optional SCSI interface into 8Mb of onboard RAM; Ensoniq's newly developed SoundFinder feature lets you search for sounds by musical category.

The TS-12's onboard 24-track sequencer includes a TempoTrack feature which allows tempo changes to be added to a song. Effects processing on the new instrument is derived from the company's much-admired DP/4 Parallel Effects Processor, with 692 pre-programmed variations on 73 effects algorithms provided.

The TS-12 retails at £2199 including VAT. For more information contact distributors Sound Technology plc at Letchworth Point, Letchworth, Hertfordshire SG6 1ND, tel: 0462 480000, fax: 0462 480800.

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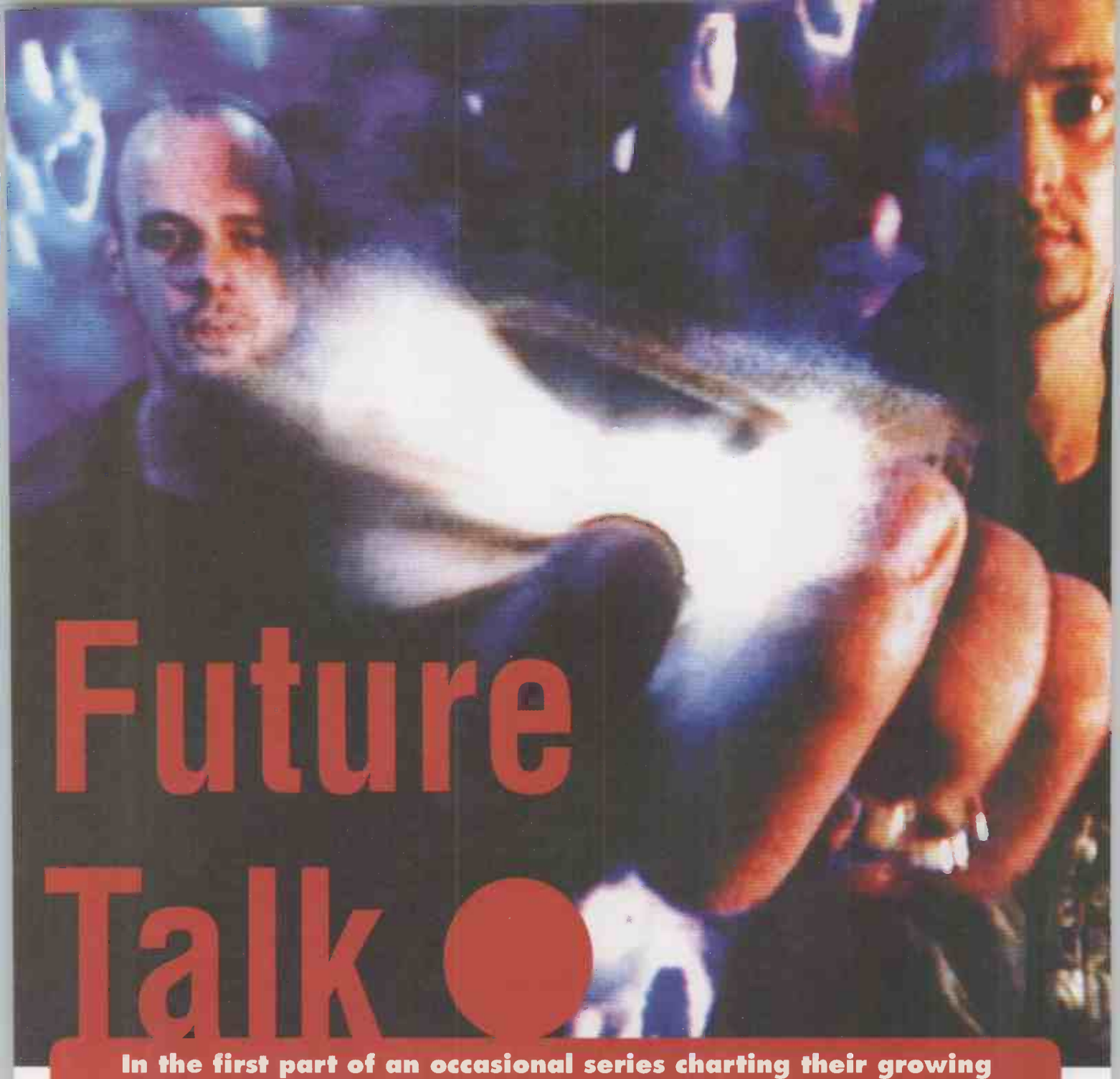

Future Talk

In the first part of an occasional series charting their growing involvement with video and computer graphics technology, The Future Sound Of London tell Simon Trask why they're going audio-visual...

When *MT* last interviewed Garry Cobain and Brian Dougans aka The Future Sound Of London (*MT* August '92), they spoke of their intention to install a video edit suite in their studio, proclaiming "Our images should be as sophisticated as our music."

Some 18 months later and the racks of hi-tech musical gear in the now enlarged Earthbeat studio are augmented by a Sony Betacam edit suite, courtesy of the group's publishers Sony Music. But this is not some recent conversion to the audio-visual faith. In fact, Brian and Garry's involvement in audio-visual work dates back to the mid '80s and a chance meeting with Mark Maclean and Colin Scott – aka video artists Stakker – at the Hacienda club in Manchester.

"They needed a soundtrack for an ident commission from MTV, so we put that together for them," recalls Brian. This led to a commission for a 30-minute audio-visual piece, *Ultratech*, for which Brian and Garry once again provided the music.

"Stakker had managed to hire a Fairlight CVI (Computer Video Instrument) from Fairlight for unlimited time," explains Garry. "That self-indulgence was quite nice, being able to create at our own pace. There were these glorious editing sessions through the night, when the Fairlight was brought in and we'd be editing the music on quarter-inch tape, back and forth with the visuals. Then there were flights down to facility houses in London to put it all together."

Then in '88 Brian and Garry, together with Stakker, decided to approach some record companies with a view to getting an audio-visual recording deal. The companies they saw had other ideas, however...

"It was... 'Yeah, we quite like the music, but we can do without paying for the visuals'" recalls Garry. "People don't even want to do that nowadays, although the climate is so much more conducive than it was in '88. We were

"The next revolution will be sound studios getting video gear and doing the whole thing themselves"

asking for 50K, 70K; it cost a lot of money to put together the sort of stuff we were doing."

In the event, the company they signed with, Westside Records, signed the music but not the visuals, and 'Humanoid' by Stakker came out on 12". Or was it 'Stakker Humanoid' by Humanoid? Or 'Humanoid' by Stakker Humanoid? According to Brian, at various stages it was all these things – a reflection of the confusion and ego problems which eventually led to a parting of the ways with Stakker.

"They had their own ideas, we had ours," recalls Brian. "Stakker didn't want to become this pop promo-making outfit," Garry adds. "Their idea was for one-off artworks, galleries."

However, the audio-visual pairing did manage to produce two more works, *Eurotechno* for Medialab and *The Evil Acid Baron* for Rhythm King, before splitting up.

Subsequently, according to Garry, Stakker video material has cropped up in all manner of situations through a series of sub-licensing deals. "A lot of people are pulling in those visuals; I've seen them in the most bizarre places." Including, recently, a video wall display in Debenhams in Oxford Street! "There's money exchanging hands somewhere, but not to us," Garry adds. "We had a very loose, cavalier business attitude back at that time." "We were also stitched up by the record company," recalls Brian. "We were totally naive – to business, to music, to the whole thing. It swamped us."

Nowadays, they place much value on taking care of the business side. "It's about a clarity of communication," says Garry. "To achieve that clarity of communication you have to gain control of as much as you can about the way you put out records – and that, unfortunately, is business. So you have to be completely attuned to it."

Following their salutary experience with 'Humanoid', Brian and Garry found themselves in a period of limbo. It was during this time that they signed to a small independent – Jumpin' & Pumpin' – and began releasing 12"s under a variety of names, including Smart Systems, Yage, Mental Cube and, of course, The Future Sound Of London. Garry refers to this as a "fruition period".

Then came the unexpected chart success of 'Papua New Guinea' and the follow-up album *Accelerator* in '92, both recorded under the FSOL name. Subsequently, Brian and Garry signed to Virgin Records *as* The Future Sound Of London, and also formed their own label, EBV, to release material under other names – the 1993 Amorphous Androgynous album *Tales of Ephidrina* being their first release.

Now, with former Stakker cohort Mark Maclean – aka Buggy G Riphead – back in the fold, Future Sound have embarked on a new phase as audio-visual artists – beginning with the video they made to accompany the recent FSOL single, 'Cascade', put together in a high-end London facilities house before they acquired their edit suite.

Always questioning the merits of

Future sound

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Akai: S900, S1000, S1100, S1100EX samplers
Alesis: ADAT digital multitrack (x2), BRC remote controller, AI-2 audio/video synchroniser, MIDIverb II (x2), Quadraverb (x2)
Apple: Quadra 950 computer
Atari: 1040ST computer running **Emagic** Creator sequencing software
Audio Logic: 20001 digital sampler

BBE: Sonic Maximiser 422A
bel: BD-80 digital delay
Digidesign: ProTools disk-based recording system (4-track version)
Drawmer: DS201 Dual Gate
E-mu Systems: Proteus/1 XR module, Vintage Keys module
EMS: Synthi AKS synth
Fostex: Model 3070 compressor/limiter
Ibanez: DM1100 digital delay
Jen: SX1000 synth
Korg: DRV-1000 digital reverb, Wavestation A/D synth module
LA Audio: MIDI gate
Oberheim: Matrix 1000 synth module, OB8 synth
OSC: Oscar monosynth
Roland: D110 module, JX3P synth, MKS50 module, SH101 monosynth, TB303 bass synth, TR909 drum machine
Tascam: 103 cassette deck
Sony: CDP-770 CD player, DTC-1000ES DAT machine
Soundtracs: IL3632 36-input mixing desk
Tannoy: Little Gold monitors
Technics: SL1210 Mk2 record deck
Urei: monitors
Yamaha: DS55 synth, NS10M monitors, Q2031 graphic EQ, SPX90 multi-FX unit, TX81Z synth module

what they produce, Brian and Garry are typically self-critical when it comes to discussing their own video... "It's a luscious piece of work, and technically it's genius, but I think with the expense of using all that computer stuff the content suffered."

"Yeah, I think we've got quite a soulless video," Garry concurs. "I think that's one of the problems of using too much 3D-manipulated work. We had a certain budget, and a lot of that budget went on generating imagery that in its present form is not at its most potent. In retrospect I wish that we'd spent a week filming very good footage, chromakeyed and otherwise, rather than spending so much time in computer time. I think the context in which that technology is used needs to be looked at.

"The idea with having the edit suite is to have the stuff which enables us to go a certain way, but keep facilities houses online to do the more cutting-edge stuff. I don't intend to spend £200,000 on a bit of cutting-edge technology; I'd rather use somebody else's and then move on. I suppose what I'm saying is that I'd like to keep the cutting-edge aspect of what we do in context, and not have to commit to having it fully on board. That way we can say 'OK, we've had enough of that now, we've used it.'

"The whole point is that Brian and I need to be completely self-indulgent in terms of our working practice. That's the way we've prospered with music, so that's the way we're going to prosper with video – and that's also why the whole film industry will be given a kick up the arse. The next revolution will be sound studios getting video gear and doing the whole thing themselves. It will lead to a completely new form of product, and a spate of products that I don't think anybody can fully imagine at the moment. ●

Future vision

Sony:
BKE-9500 Editing Control Disk Unit
Edit Desk
PCM-7050 Digital Audio Recorder
PVW-2650P Betacam SP Videocassette Player
PVW-2800P Betacam SP Videocassette Recorder
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■ *MT will be reporting exclusively on FSoL's progress as self-sufficient audio-visual artists in future issues.*

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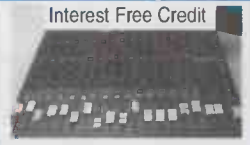

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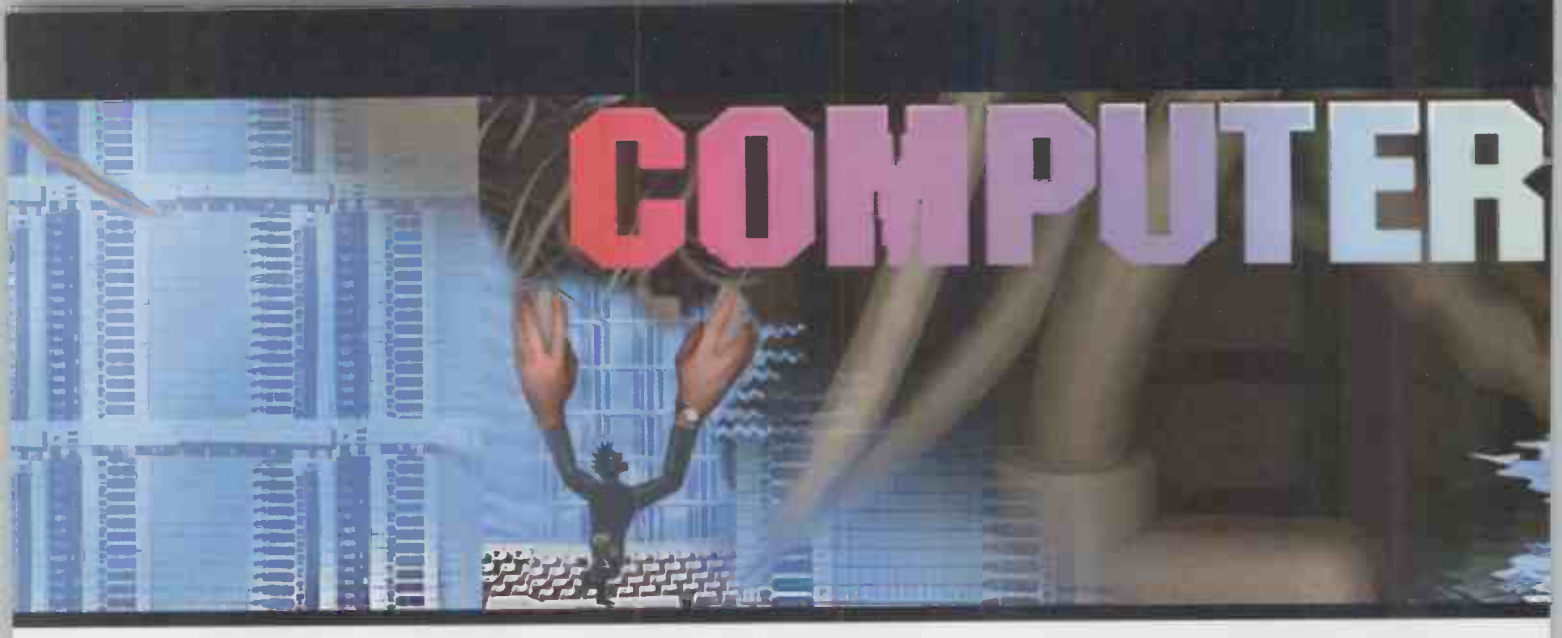


Don't you just love being in control?

Well, it seems that hi-tech musicians do and these days spend by far the greatest proportion of their time behind computer terminals which offer a degree of control that would have been hard to imagine just a few years ago.

Ian Waugh

But for many, the process of buying a computer – either for the first time, or as a replacement for an existing machine – is fraught with difficulties, incomprehensible jargon and unhelpful, partisan attitudes.

Spending money is easy. Spending money wisely isn't – especially if you're looking for a computer which will not only serve your needsas a musician, but will also permit entry – either now or at a later stage – into other areas, particularly the world of multimedia production.

Whilst diplomacy prevents me from coming right out and saying the best computer for music and multimedia is the Apple Mac, what I will say is that no other computer has as good a user interface or as good a range of music and graphic software – or the power to put it all together.

The two latest Macs are aimed squarely at the multimedia market. They're the Quadra 840AV (around £3400 with 8Mb RAM, a 500Mb hard disk and CD drive) and the Centris 660AV (around £2100 with 8Mb RAM, a 230Mb hard disk and a CD drive). Apple has dropped its RRP pricing policy in favour of SRPs (suggested retail price) so any dealer worth their salt is knocking a few hundred quid off.

It's interesting to note that the US price of the 660AV, for example, is $2799 (around £1950) so although the UK consumer is getting tucked up yet again, it isn't by as much as usual!

Both AV models have many options built in which would be expensive extras on any other machine. The 840AV is the fastest Mac so far produced. Both models have video In and Out sockets and can record QuickTime movies from a camcorder. They can also send the Mac's screen image to a video recorder or TV and record and playback audio. A voice recognition system is also included, and they can send faxes and serve as telephone answering machines (Teasmade facilities are not, as yet, included...).

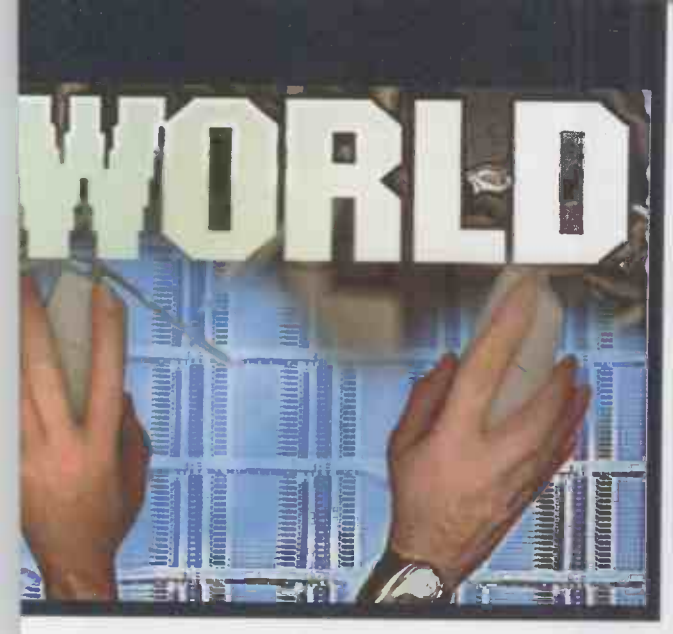
If you can't run to one of these, there's the Quadra 650 at £1550, the Quadra 610 at £1160, the LC 475 at £940 and the LC III at £690 – although personally I'd opt to go more up-market than the LC III, especially if you want to work with graphics now or in the future. Prices, of course, are guaranteed to change by the time you read this.

Interestingly, Apple are currently standardising on the 68040 processor and although a 68030 machine will still run 99.9% of Mac software, the time may come when it won't.

The main drawback to buying any Mac is Apple's marketing strategy, which guarantees a price cut within six months of its release. In fact, the two AV models had their US launch prices reduced before they even made it to the market!

Many people associate Macs with high prices and this has been true until recently. Apple basically chewed off their own feet by maintaining inflated prices and thus encouraging an elitist image of their products which commanded only a small market share. With a modicum of marketing sense the

The Mac Quadra 840AV system



company could have made some deep incisions into the body of the PC. Ah well...

Some people still think Mac prices are still too high, but at least they run a native operating system – unlike Windows on a PC – so you don't need the mega power of a PC to run applications. And the Mac front end is far superior.

As with most other things in life, if you want performance and ease of use, you've got to pay for it. In spite of everything, a Mac would certainly be my first recommendation as a computer for both music and multimedia applications.

The PC Compaq 433i system

PCs give you the most computing power for the price. But when you run an application in Windows and on top of DOS you'll find you need all the power you can get! As there are more PCs by far in the world than all the other computers put together, prices are keen and software is plentiful.

Although you can pick up a reasonably powerful 386 (the PCs are named after the processor which controls them) for about £700-£800, I'd strongly urge anyone to pay a bit more and get a 486. It's currently the most up-to-date and future-proof PC and we are starting to see some software packages which really don't perform well on a 386, again due to the massive amounts of processing power required to a program on the straight and narrow.

There must be well over 100 companies cobbling together PCs, and trying to decide which machine to buy isn't easy. Even though several systems may have similar specs, the only way to compare them is to run comparative tests. Of course, only computer magazines have the wherewithal to get hold of the machines and do this, so they are your best source of information.

In fact, if you finish this article remembering only one piece of information, let it be this – you *must* do your homework or get independent expert advice (that is, not from a dealer or high street store) before buying a PC.

486 prices range from £1000 upwards, though you could expect to pay around £1500-£1600 for a powerful top-end machine. Many now have the ability to be upgraded to the Pentium chip (the so-called 586), but while it's always useful to keep your options open, I personally wouldn't pay too much simply for the ability to upgrade.

PCs still have to catch up to the Mac in terms of graphics and multimedia integration, but it won't be long before they do. There are already more budget sound cards than you can wave a MIDI lead at as well as several pro digital recording systems plus video cards and a goodly range of graphics software. Microsoft is about to release the second version of Video for Windows.

When everything's working, PCs are fine but configuring the things, plugging cards into them (sound and video), setting up the system in the first place and even doing general housekeeping tasks is a pig. Make no mistake. I reckon well over 50% of home PC users are not running their computers to their maximum potential.

Still, it seems PCs may yet take over the world; certainly, they are the most future-proof computer system currently around. Although there is the PowerPC to come (see box out).

The Amiga is probably not the first computer ➤

The musician and the computer

OK, so you're not into multimedia and want a computer simply to make music. What should you look at?

By virtue of its built-in MIDI interface, the Atari ST became the UK's most popular music computer. And it's still a good choice – it's cheap and it has the widest range of music software of any computer – particularly in ancillary areas such as editors, librarians, composition programs and so on.

But as its popularity continues (alas) to wane, software developers are turning their attention to other computers, so the program you buy now is unlikely to be updated. You are, therefore, buying into a virtually closed system and this needs to be balanced against the money you're saving. Nevertheless, a vast number of musicians continue to make music with an ST and Cubase or Notator.

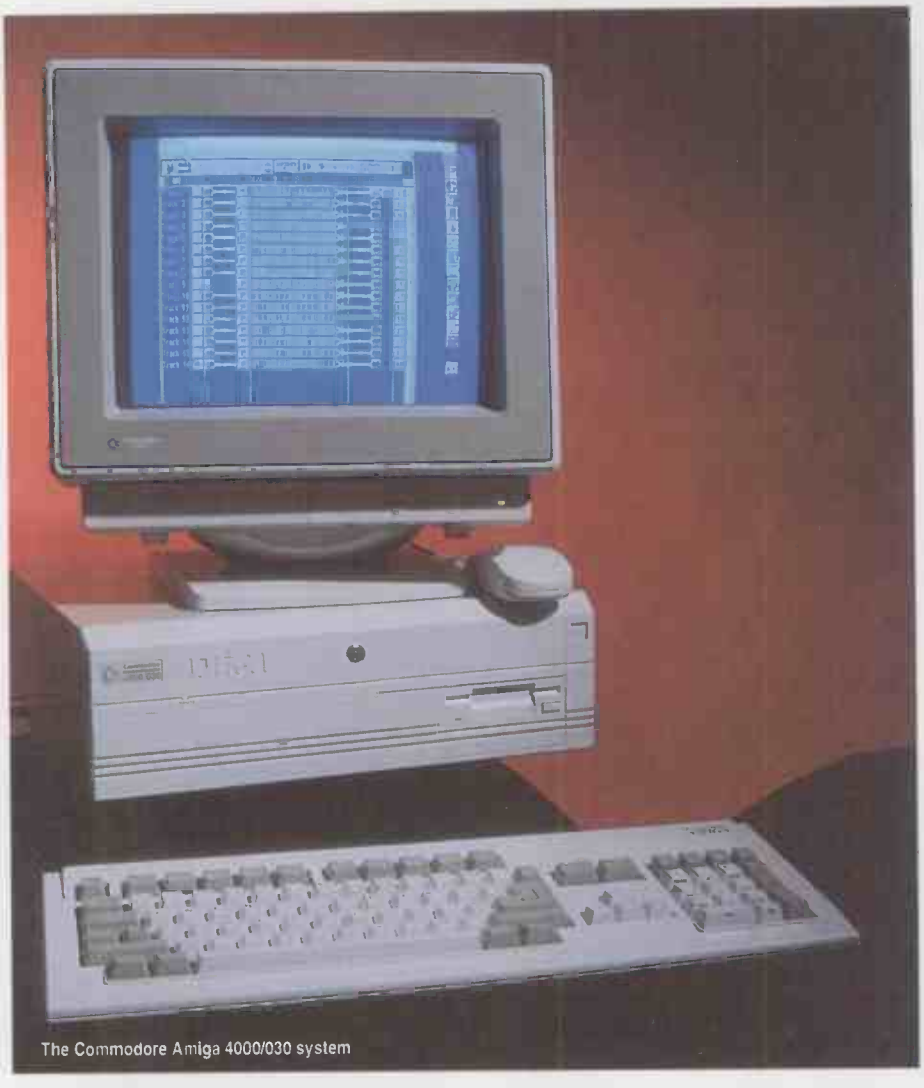
If you want to get into direct-to-disk recording, Atari's Falcon looks appealing, although serious direct-to-disk software has yet to appear and be tested (...but look out for Cubase Audio). Remember, too, that many ST music programs will not run on the Falcon and not many software developers appear to want to update them to do so.

The Mac has an excellent range of sequencer programs at both pro and budget levels including Cubase, Notator Logic, MasterTracks Pro and Vision. There isn't too much in the way of synth editors and librarians but there are a handful of decent sample editors such as Sound Designer and Alchemy. Mac's are particularly suited to direct-to-disk recording applications, too – although you'll need extra hardware for this – check out Cubase Audio, Session 8 and StudioVision.

As far as the PC is concerned, sequencing software is plentiful and is available to suit most pockets, though it can't really be said to fall into the professional category. At the high end there's Cubase (not without its problems on the PC) and a little further down MasterTracks Pro and Cakewalk. Seqwin is also starting to make a name for itself (see review in this issue) and there's also Cadenza with it built-in SysEx librarian. Note that some Windows music software requires a fairly high-end 486 in order to maintain timing integrity. Of course you could opt for a DOS-based sequencer such as Voyetra which has withstood the test of time and is still, I believe, being used by Stevie Wonder.

Like the Mac, PC synth editors and librarians are rather thin on the ground but there are now some excellent direct-to-disk systems running under Windows which you should be able to use concurrently with a sequencer.

As regards the Amiga and the Archimedes... well, let's just say I can't imagine anyone buying one of these computers specifically for musical purposes, but if you happen to own one already, check out Bars & Pipes (Amiga) and Rapsody and Serenade (Archimedes) if you're in need of a sequencing package.



The Commodore Amiga 4000/030 system

More Power to the PC

No overview of the current computer market would be complete without mention of the Power PC. A new joint development by Apple, IBM and Motorola, the Power PC promises vastly increased speed and power – well in excess of even high-end Mac Quadra'sThe interesting thing is, it will run both Mac and PC software and, if it's done right, could well prove to be the computing platform of the future.

As of writing, hard details are difficult to come by although the machine is due to start shipping in early 1994. In next month's *MT* we'll be featuring an update containing all the latest PowerPC info. For now, suffice it to say the promise of the PowerPC is too good to ignore; unless you need a computer *now*, I'd strongly advise you to wait until more information is available. If you must have a new machine immediately, remember that a number of machines in the Mac range have a PowerPC upgrade path.

➤ you'd think of where music is concerned. It has none of the industry-standard sequencers although Dr T has a range of often numeric music software and there is the rather desirable Bars & Pipes Professional (a review coming up in *MT* soon). Though Amiga CD-ROMs haven't really caught on, the computer does at least have one direct-to-disk recording system.

Where the Amiga really scores is as one of the major forces in the graphics and animation industry. It's a popular genlocking machine and can lay claim, amongst other things, to being ➤

JARGON BUSTER

● **User-interface:** The point at which the computer and user get together. In the case of a synth this is the buttons, sliders and keys. In the case of a computer it's the keyboard, the mouse and what you see on screen. Some user-interfaces are easier to use than others. See DOS, Windows and GUI.

● **Operating system:** The part of a computer's software which takes care of the basic day-to-day jobs such as handling files, keeping the monitor display uptodate and generally making sure that all aspects of the system work well together.

Some operating systems are built into ROM, others are loaded when you switch the computer on. Typical operating systems include Atari's GEM (Graphic Environment Manager), MS-DOS (Microsoft Disk Operating System) used with PCs, and Apple's System 7 which is used with Macs.

● **DOS:** Disk Operating System. This is the basic PC operating system which not only takes care of disk handling but all other aspects of computer use, too. The most popular is MS-DOS but there are alternatives such as DR-DOS – though all perform the same essential functions. DOS is essentially a CLI (see GUI) which is not the most user-friendly interface (see User-interface) so alternatives such as Windows have appeared (see Windows).

● **Windows:** This is the most popular graphic front end for PCs. Instead of having to type commands laboriously into a PC at the DOS CLI, Windows lets you control the computer with a mouse by clicking on icons (small pictures) and dragging them around the screen. It's widely acknowledged as being far easier for beginners to learn and virtually all experienced users are now migrating towards Windows, too.

However, Windows runs on top of DOS and when you use an application within Windows you need a lot of processing power to cut through the 'sludge' from the computer's CPU up to the application. A 386 will do the job, sometimes hesitantly, but a 486 is much better (see 386/486 Processors).

● **GUI:** Graphical User Interface (pronounced 'gooey'). The standard term used to describe a graphical approach to the way a computer interacts with the user. A GUI uses icons (small pictures) of items such as programs and files, and you can control the system by pointing to items with a mouse. It's a far easier system to use than a CLI – Command Line Interface – with which all instructions have to be laboriously – and accurately! – typed in.

● **RAM:** A very unhelpful acronym standing for Random Access Memory. Its derivation dates back to the origin of computers and if it wasn't already lost in the annals of time would be better forgotten about. It refers to the area of memory in a computer which is used for running software (such as sequencers, wordprocessors and games) and storing data (such as songs, documents and high scores). You can both write data to RAM and read data from it (see also ROM), but it's volatile so when you switch off the computer, all data in RAM is lost. This is why you should save your work to disk regularly.

DP88

The new Akai DP88 allows you to connect all your digital signals and route them quickly and efficiently. 10 stereo digital inputs can be routed to any (or all) digital outputs and there is a choice of fibre optic & XLR connectors to suit your requirements. 128 memories can store your setups and be instantly switched via MIDI.

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The ME80P is a MIDI patchbay with 8 inputs and 10 outputs. Any input can be sent to any, or all outputs. Two inputs can be merged to one output (and also sent independently) if desired. 128 memories are available for storing setups, which can be switched via MIDI or footswitch. A MIDI filtering function lets you selectively suppress unnecessary events.

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The ME35T is the industry standard audio to MIDI trigger! The original design has proved its worth to thousands of musicians. 8 audio inputs allow you to connect pads, triggers, microphones or any audio source and convert to MIDI. The MIDI IN socket allows merging of keyboard input to make the most of your modules. Fast but delightfully easy to use, the ME35T will let you have plenty of control.

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Multimedia and the computer

Multimedia – what is it? In its present form multimedia combines music, video, still pictures and, perhaps, text into a single medium: the computer program. Throw in a dash of interaction and you have in your hands the future of entertainment and information technology.

And it hasn't come a moment too soon: the record /CD/cassette/Minidisc market has shrunk rapidly in recent years as more and more of the nation's teenagers squander their pocket money on computer games and videos rather than music. Clearly, if music is to excite people rather than simply act as background noise, it has to compete with the many other forms of entertainment that digital technology has brought within reach.

All this may seem a long way off and currently beyond the grasp of your average muso starving in a garret and sending demos to acne-faced A&R boys with a Porsche and an expense account. Not so. The technology now exists through which we can create audio/video productions in the comfort of our own basement flats without it costing an arm or a leg – or the sum total of next year's giros. One only need look at the exploits of someone like David James (*MT* December '93) to see what's possible with only modest equipment.

The main pre-requisite for any combined audio-visual production is, of course, a computer. And the computer industry hasn't been slow in latching on to multimedia as a way of marketing new machines. Though this has primarily been in connection with business presentations and home entertainment, there can be no doubt that more and more musicians will soon be releasing their own computer-based audio/visual productions. Peter Gabriel's example (see page 44) will be followed in a thousand different ways.

The Atari ST system

➤ the computer used to generate the piccies for *Catchphrase* along with many other TV programmes.

To emulate this, however, you'll need a bit more than an Amiga 500; look at the 4000/030 (£1199.99) or the 4000/040 (£2099.99) which come with a built-in 120Mb hard drive (not particularly large for multimedia use), but without a monitor which will set you back another £300-400 for a decent model.

The 4000s really are rather tasty multimedia machines capable of displaying 256,000 on-screen colours from a palette of 16.8 million. There is a wealth of graphics, video and animation software available and to say they are capable of generating impressive productions is like saying Spielberg makes canny movies.

If you can't run to a 4000, there's the Amiga 1200 at £349.99 (monitor and hard drive extra) which has the same colour display capabilities. It currently comes bundled with several programs including games and paint software, but you may need a few upgrades to do any serious multimedia stuff.

At a year old, Atari's Falcon is still relatively new. Although based on the musician's favourite computer, the ST, it is altogether a heavier piece of kit with the ability to display 65,536 colours at once and with a dedicated DSP (Digital Signal Processor) chip which can process data in real time very quickly. Already four direct-to-disk recording programs have appeared using the DSP which require no additional hardware – making the Falcon very attractive for musos on a budget.

It has audio, video, SCSI II plus a variety of other connection sockets allowing it, for example, to accept external video sync for genlocking. It doesn't yet have a standard for CD-ROM support although it is capable of multitasking, and there are already several alternatives to Atari's own multitasking operating system, MultiTOS.

The Falcon to go for is the one with 4Mb of RAM and a 210Mb hard drive (£999, monitor extra). The basic machine has 1Mb of RAM and no hard drive (£499), but you'll need more than this for most serious work. It's worth remembering, too, that many ST music

JARGON BUSTER continued

ROM: A more sensible acronym standing for Read Only Memory. It's a type of memory which contains fixed data put there by the manufacturer. You can read it but you can't write to it or alter it in any way. In computers it is used to store essential information about how the computer works. It has been adopted by CD ROMs to indicate a medium which can be read from but not written to.

Multitasking: Strictly, the ability to perform more than one task at the same time – such as playing music and sending a file to a printer. Many systems which claim to be multitasking actually use a system called 'time slicing' during which the processor shares its time between each application. It's a little like the man in the circus who keeps lots of plates spinning on poles by running from one to the other and giving each a spin. The Commodore Amiga is a true multitasking machine.

68030/040 processors: The 68030 and 68040, often abbreviated to 030 and 040, are types of microprocessor chips produced by Motorola – the 040 being the more powerful. They are used in Apple Macs and form the heart of the computer, handling all the essential computing processes. They are colloquially known as CPUs or Central Processing Units.

386/486 processors: More CPU chips, this time part of the 80x86 family – 80386 and 80486 – used in PCs. Intel designed them, but as you can't copyright a number the company couldn't protect them so other companies have cloned them. Hence the term 'Intel Inside' which you'll see stuck on some PCs, and why Intel has given the 586 chip a name – the Pentium.

Hard disk: Similar in principle to the humble floppy disk but containing several hard (hence the name) metal platters which allow greater storage capacity and faster data transfer. It's rare to find a PC or Mac hard disk with a capacity less than 40Mb and the current trend is towards disks with a capacity of 200Mb or more. Direct-to-disk recording requires large hard disks capable of fast data transfer speeds.

CD-ROM: A CD player connected to a computer which can read not only audio CDs but also CDs containing graphics images and computer programs. (See CD-ROM feature in November '93 *MT*).

Multimedia: Hip, cool-to-the-groove buzz word meaning, simply, the use several types of media in one presentation such as graphics, video clips, text and sound.

Video CD: A 12" CD usually used to store computer movies. Currently they have a maximum running time of around 90 minutes.

QuickTime: A piece of Mac software which can show movies in a small window on the Mac screen.

Video for Windows: Similar to QuickTime but for Windows on the PC.

programs won't run on the Falcon and not all are being updated to do so.

Dedicated Falcon software is starting to appear slowly but surely, though this is restricted to music programs at present. The Falcon's multimedia potential is there but has yet to be fully realised. If, however, you want to *control* external devices such as video players and the like, the Falcon has the sockets.

Having mentioned the Falcon, we can't really ignore the good ol' Atari ST. This is still the most popular music computer in use in the UK, a job it does well and very cheaply, despite looking its age alongside the current generation of machines. Certainly, if you already have an ST there's no reason why you can't use it to run your sequencer and sync it to another computer which would handle the graphics. Current prices are around £200 for a 1040STE.

The final computer on our list is the Acorn Archimedes. An excellent machine, it has been done no service at all by Acorn's marketing strategy which effectively limits its area of interest to education. It's a powerful computer with an excellent GUI – well able to handle graphics, video, sound and CD-ROM. Photo CD software is currently being developed.

Archimedes computers include the A3010 at around £400 but for any sort of serious work you need to look at the A4000/5000 which range from about £1100 upwards.

Arc software includes a range of graphics, 3D drawing and video programs plus a growing number of CD-ROMs. The range of MIDI sequencers is small and most are aimed at the home and educational user rather than the pro, and unfortunately there are no real multimedia packages – not as yet. ●

MIDI interfaces

In order to connect your keyboard and synth modules to your computer, you have to equip it with a MIDI interface – unless you have an ST or a Falcon which both have MIDI interfaces built in. It really does make you wonder why no other computer manufacturer thought to do the same. Even Apple's new AV models neglect the magic 5-pin sockets.

Basic MIDI interfaces are available for the Mac, PC and Amiga. Prices range from around £20 (for the Amiga) and £70-80 (for the Mac and the PC) upwards.

Some interfaces have more than one MIDI Out. These may simply be two sockets sharing the same output signal which makes it easy to plug two units into the signal path. Alternatively, they may be separate or individual Outs which will provide you with an additional set of MIDI channels. For this to work, however, the software must support the individual Outs on the interface.

The Mac again scores here as you can connect a MIDI interface to the Printer or Modem port – or both – and most software, even budget stuff, lets you assign a track to either output.

Incidentally, ST users can buy a special MIDI interface (about £30) which plugs into the modem port and provides access to another 16 MIDI channels. But again, the software must be capable of using this.

You can buy more sophisticated interfaces which support both MIDI sync and SMPTE and there are special interfaces with these features for the ST, too.

When buying a PC interface the magic words to look for are MPU-401 compatible – although most interfaces are. If you run under Windows a special interface may need a special Windows driver, although this should be supplied with the interface. Most PC MIDI interfaces come on plug-in cards which you have to fit inside your computer, but external ones are also available which plug into one of the external ports.

With the internal variety you may have to make some technical adjustments to settings such as the IRQ (the Interrupt ReQuest, which is how the PC knows there are things plugged into it). This can be a bit hairy if the setting up instructions aren't detailed enough or assume a degree of competence with PC internals, which is often the case.

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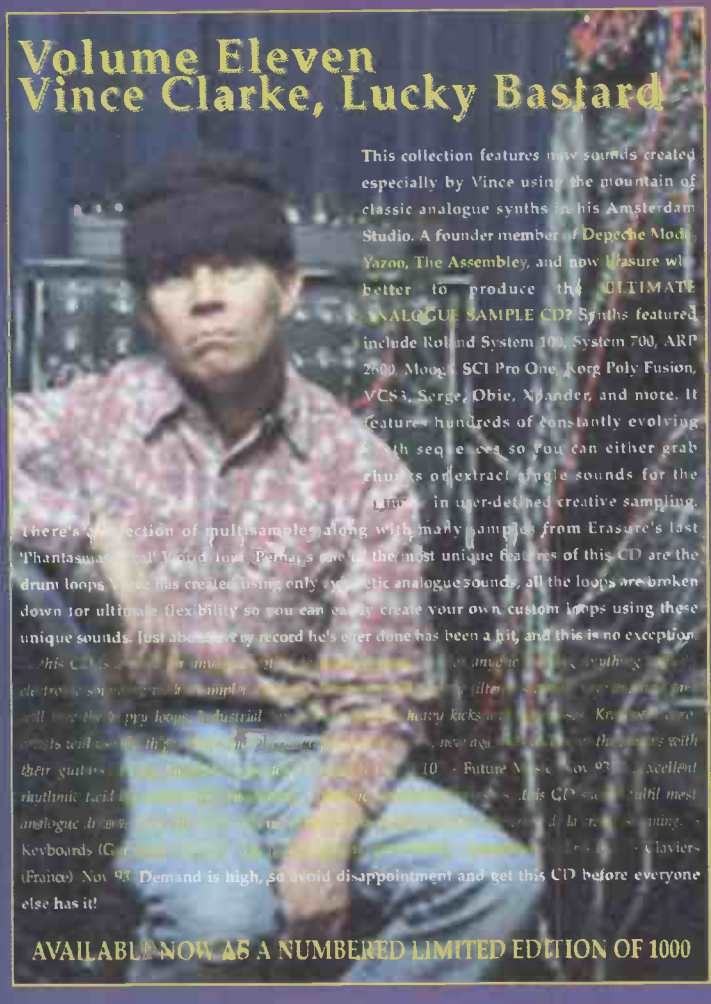
Volume Eleven
Vince Clarke, Lucky Bastard



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This CD is a must for anyone who owns any analogue synths or electronic sound creation equipment. Whether you're into ambient soundscapes with samples, or hard edged dance with filter sweeps and pounding kicks and basses, Vince's CD will have the happy loops, industrial kicks and bass sounds that you need. Kraftwerk have used this technique for years, and more recently the Pleasure Principle album by Gary Numan, and the tracks with their guitars replaced by synths on Telekon. Future Voice Volume 10 - Future Voice Volume 2 - Excellent rhythmic acid lines, and this CD is full of the most analogue drum sounds and basses you could ever want. Keyboards (Germany) Nov 93 - Claviers (France) Nov 93 Demand is high, so avoid disappointment and get this CD before everyone else has it!

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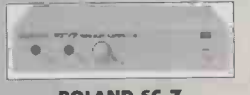

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Swim Records

Learning to swim

Desktop publishing, desktop video, desktop music – and the desktop record company? Swim Records explain to Simon Trask why they've taken the plunge...

So you've got your home studio, you've recorded an album's worth of material that you're happy with and you want to release it. Time to start doing the rounds of the records companies – or is it? You built up your studio because you wanted control over the recording process, so why relinquish control over the finished product?

For Colin Newman and wife Malka Spigel, the decision to set up their own label was taken after they'd moved from Brussels to London in 1992. Both had past involvement in the music industry, Colin with Mute recording artists Wire and Malka as part of Israeli/Dutch group Minimal Compact. Colin had been working with sequencers since 1987, when he'd discovered Steinberg's Pro24 software, and the pair had built up their own studio over the years. Using money gained from the move to London, they invested in a new mixing desk and some soundproofing, and developed a home studio which would allow them to produce music of masterable quality.

"When we came to Britain we'd already thought up the name Swim, and the idea was to be a production company," explains Colin. "We evolved into a record company partly because Daniel Miller at Mute reckoned it would be a good idea. I'd asked him if he'd be interested in us working as a production company, and he said we'd make much less money that way, that we'd do much better if we took the step of becoming a record company."

Swim releases

Malka Spigel: *Rosh Ballata* (WM1)
Oracle: *Tree* (WM2)
Colin Newman album (WM3 – due early '94)

Planned: Oracle remix 12", Universal Law (abstract techno and cookery!), collaboration with Benjamin Lew.

As Malka points out, for musicians used to being signed to a label, taking that step necessitates a change of attitude.

"You can get very attached to the feeling that there's someone there who will take care of you," she says. "As a musician, who wants to bother with money and publishing and all those headaches. You don't *want* to understand what it all means. To begin with it was more Colin who wanted to be in control and have his own record company; I wasn't sure, I just wanted to deal with the music. It took me a while to get over that and to want to do something for myself. But I'm wary of the business side taking over."

By the time they arrived in Britain they already had most of the material for an album from Malka. This together with interest from Israel prompted them to make the *Rosh Ballata* album their first release. With the help of an advance from co-publishers Mutesong and Israeli licensee NMC, they had 1000 CDs pressed up; 95% of these went to export.

Colin and Malka are the first to acknowledge that their backgrounds have helped them get started, not least because of their popularity abroad.

"France is our number one territory right now, because Minimal Compact have a very good reputation there," comments Colin. At the same time, he points out that past success can be a double-edged sword. "It's given us some useful contacts on the business side, but on the credibility side it's made things harder. There's a lot of pressure in the music industry for artists to continue to do what they did before because it's popular."

Malka Spigel: Rosh Ballata

In their press information, Swim state: "We believe ourselves to be one of the first of a new breed of record company, almost a 'desktop' record company, taking up the ideas of the dance movement in terms of its production values and approach but not just limiting ourselves to dance music."

Colin elaborates on this view:

"How I visualise it is that here at home is the core of the company, the production centre and where all the information is held, and then other places provide certain specialities. We can do finished mixes here, but the actual CD mastering is far too specialised to have here; at the moment we don't do digital editing here, but it's something we might do in the future.

"Somebody gave us a very good piece of ➤

advice at the beginning, which was don't try and run before you can walk. We're inherently conservative about spending money, simply because we need to keep careful control over what we're doing in the early years so that we don't wind up having no money."

As well as being the centrepiece of Colin and Malka's studio, where it runs Cubase, their Atari 1040ST also gets used for administrative chores, as the couple do their own promotion...

"You need to keep your communications efficient," says Colin. "People need to know what your releases are, you need to get information out to them. We do our own press releases, and we keep names and addresses on a database in the ST; we also use the computer to keep a general track of the accounting."

What advice would Colin and Malka give to anyone else thinking of starting up their own record company?

"If you feel strongly about what you've got, and you feel it could be interesting for people – go for it," says Colin. "Just don't give up the day job, make sure that you've got some money coming in to cover you.

"You've got to have quite a bit of neck if you want to make it work, basically. You've got to be prepared to get on the phone to people or send them letters; it kind of helps to be fairly cheeky in general. Try to put across what you're doing as confidently as you can, without sounding arrogant; the way you present yourself can really make a difference.

"Also, financial scrupulousness with anyone you're dealing with is very important, especially in the early days – otherwise things will catch up with you later on. If you're a production team becoming a record company and you're working with mates, make sure that it's all discussed at the beginning, how you're going to budget it out." ●

Swim can be contacted at PO Box 3459, London SW19 6ES.

Swim studio

Sequencing and recording
Atari: 1040ST w/2Mb RAM running **Steinberg** Cubase software, plus Steinberg SMP II MIDI/sync unit
Allen & Heath: S2 mixing desk
Fostex: Model 80 8-track tape machine
Phase Linear: 200 amp
Philip Rees: 5x5 MIDI Switcher and V10 MIDI Thru
Sony: 670 DAT machine and TCD-D3 Portable DAT
Yamaha: NS10M speakers

Sounds
Akai: S950 sampler, XE8 drum module
Casio: CZ1000 synth, DH100 digital horn, MT65 keyboard, PG380 MIDI guitar
Korg: MS10 monosynth (MIDI'd via M2CV MIDI-to-CV interface)
Yamaha: DX7S synth, TX81Z module

Other instruments
Fender: Jazz bass
Ovation: bass, Breadwinner guitar
Suzuki: folk guitar
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We have ways of making the hi-tech musician talk. Good guy, bad guy... angle-poise lamp in the face... sodium pentathol. And, as Keith Emerson recently discovered, the *MT*ease questionnaire...

Emerson, Lake & Palmer

Keith Emerson pioneered and popularised the Moog synthesiser from the early '70s, as one third of prog-rock trio ELP. Emerson and the other two – bassist/vocalist Greg Lake and drummer Carl Palmer – have just celebrated 25 years (on and off) together with a major 4-CD box set titled *Return Of The Manticore* (Manticore being their original label). More than simply a retrospective, the set includes fresh recordings of all manner of ancient material – some of it in freshly minted Dolby Surround Sound.

1 What was the first synthesiser you ever played?
"Moog Modular System, built by Dr Robert Moog in 1969."

2 Who is your favourite musical pioneer?
"J S Bach."

3 What's the difference between Take That and Stravinsky?
"Stravinsky wrote 13 different arrangements of The Rite Of Spring *before he was satisfied. But there again, if Walt Disney signs Take That there won't be a hell of a lot in it."*

4 What's the difference between a drum kit and a drum machine?
"The person using them."

5 Playing live: why bother?
"Best way to see the world."

6 Which record says most to you about music technology?
"ELP's first."

7 What does the phrase 'multimedia' mean to you?
"Not a lot."

8 How do you react to hearing a sample of your music on someone else's record?
"By sampling one of their's for mine..."

9 What is the next piece of equipment you would like to buy?
"A waterproof digital diary."

10 Will technology become invisible?
"I don't know, but it's a good concept."

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BREAKING SOUND BARRIERS

Behind The Orb live experience lies Chris Craig, audio-visual pioneer. Bruce Hepton sees the light...

postcard fr

Working with the The Orb to create an ever-expanding visual feast makes Chris Craig an integral part of their live shows. Like most of the new wave of audio-visual designers, Craig's work is divided between making a living and funding his own R&D. The Orb provide the perfect base...

"R&D is what I'm really interested in. Working with The Orb lets me do that. We've got a lovely set up and good budgets, and they're willing to experiment – so I've got a free hand." Craig has grown with the rave scene since 1988, but his biggest achievement was setting up The Shamen's groundbreaking *Synergy* nights, whose influence is seen in clubs like Megadog.

Chris' input was the essence of *Synergy*. It was he that translated The Shamen's dance/rock musical blend into a radical blurring of club and gig styles, combining performance art, lighting, DJs and live musicians in a continuous audio-visual mix. The medium *was* the message, signalling a way forward and building bridges between the indie and dance scenes.

Like *Synergy* before it, The Orb experience represents the flowering of a variety of sub-cultural influences, as Chris explains.

"House music is an idea that has definitely come of age. The punk rock movement was very nihilistic and negative, and swept away the previous hippy ethos of 'turn on, tune in, drop out'. Now, it's more like 'turn on, tune in, and *get with it*.

"It's about young professionals getting up, finding the finance and doing something positive. I don't think it's skanking anyone asking more or less £10 to come through the door for The Orb when you see what we do. I think punters are more sophisticated than a lot of promoters realise."

A lot of the people Craig works with are at the cutting edge of their fields, and would rather keep new products defiantly small, cheap and available – ignoring the potential for corporate licencing.

"Potentially," thinks Chris, "the next stage of human development and evolution could come through technology. There's a friend of mine in Japan who develops a thing called an IBVA – Interactive Brainwave Visual Analyser. You've got a headband with sensors, and a radio transmitter, and a receiver hooked up to a Mac. You can read electrical transmissions from the brain when you're on a rollercoaster, or on the point of orgasm, or tripping. And you can use this as a MIDI switch, controlling music, or lighting. What I want to develop is using these brain patterns as chase patterns – say, with a bank of strobes – to visualise your state of mind."

According to Chris, virtual reality and multimedia aren't specific products: they're states of mind, creative tools. Politicisation and commodification of the new technology will undoubtedly happen, but certain pioneers are attempting to ensure it gets into the right hands first. *Mondo 2000*, the bible of the Californian computer art and VR subculture, is very close to Chris' heart.

"Mondo are beautiful, they entertain with the technology. It's whacky, intelligent, far out. I mean, a bit too far out! – but that's due to the nature of the technology. It's not all come through, they're all waiting for VR, and they're having fun speculating. This is the route to true VR, and a lot of interesting things are happening"

At an Orb gig, just as with VR, the key word is 'immersiveness': the creation of an artificial environment in which one can become totally immersed.

"On that basis," agrees Chris, "what we're looking to do is get larger venues like Earls Court 2 and have the band in the middle, with 360-degree immersive visuals all round. The emphasis has always been on the music alone: the musicians have had the

m the edge

technology and the media push. Now, with lighting, we're getting there. Musicians have been using 16-bit technology – samplers, computers – for years, but it's only really lately that we're starting to get good intelligent 8- and 16-bit lighting technology. Musicians and visual artists are working together, or becoming one. I now want to get involved in some of the underground video/music networks, like how there used to be underground networks for punk rock and punk art".

Multimedia, for Chris Craig, is a gestalt effect: "...where the total is greater than the sum of the parts. You should be able to put the two sensory stimulants of music and lighting together, and a greater whole should emerge. At some concerts you can go 'wow!' at the amount of big TV screens or whatever, but people miss the point, which is that big music and big lights do not necessarily equal a great show."

He also believes that much of the potential for multimedia and VR technology will be realised in the future by the supplanting of the TV generation by a generation of Nintendo and Sega kids.

"There's still a screen that they're sat in front of, but they're interacting with it – becoming technologically literate and dextrous. Nintendo is going to give us the next generation." This is the reason why Craig views most efforts in the field of multimedia as more than mere entertainment. It's about the blurring of traditional concepts of education, entertainment, information and – deep breath – use of the human brain.

"Sure, what I do now is put on flashy shows, but the ongoing R&D that leads from these fields... that's the future! I love interacting with people, that's what all this is about. I mean, you pay £10.60 a month and you can get on EtherNet – access to 60 million computer terminals worldwide. But it's not just terminals, there's people and knowledge out there. If you want to learn about anthropology through Colorado University, for example, it's right there in front of you. Geography matters less and less. But, with The Orb shows, we're still faced with the logistics of being somewhere on a particular night. Eventually it'd be fun to do gigs through the networks!" ●

Photos: Phill Pepper

Chris Craig's kit

"The most important bit of kit I've got right now is the Wholehog. It's a new generation lighting control desk, and there really is nothing to touch it in the world. It's basically a 386 PC dedicated to running lighting systems down DMX cables. It's got absolutely huge capabilities: it carries information on 512 separate lamps down one 3-core XLR microphone cable. But the Wholehog does 12 times that – 12 times 512, at very fast speeds. It utilises applied mathematics and algorithms to provide intelligence, so you can do a load of things that you just couldn't do previously. Sting, Peter Gabriel, Grateful Dead and Prince all used them on tour this year, and Peter Gabriel was so impressed he bought himself one."

Chris also has a constantly evolving line up of lamps, strobes, inflatable globes, slide and film projectors. And rope lights!

"We ordered 150ft for the last tour. It's not what the thing is – it's how you use it. Anything can be effective"

Working in co-operation with a number of lighting companies, Chris incorporates new products into his shows and raves. "...That way the companies get a showcase for their new gear, and I get to stay at the cutting edge," says Chris.

In Copenhagen with The Orb, the lighting rig was supplied by SpotCo and Optikinetics, with Solar 250s and Emulators in the various chill-out rooms and Solar 575s on each PA tower. Eight Club Strobeflowers, three Terrastrobes, eight Clay Paky Superscans, a circle of Trilite 6-metres in diameter supporting 16 Dataflash units, four Goldenscan 3s and several Kodak Carousels completed the picture.

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Interviews	☐	☐	☐
Techniques and Features	☐	☐	☐
Scanners (news)	☐	☐	☐
Dare (demos)	☐	☐	☐
End Product (music/video reviews)	☐	☐	☐
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The Golden Rules
Employees of Peavey and Music Maker Publications are ineligible to enter this competition. Multiple entries will be disqualified. No correspondence or telephone enquiries will be entered into. The editor's decision is final.

CD-ROM EXPLAINED

WHAT IS CD-ROM?

CD-ROM is a storage technology for large amounts of information, which can be accessed from a PC via a CD-ROM drive. CD-ROM technology uses Compact Discs (CDs) as its information storage medium. These disks can store high resolution colour images, millions of words, full audio sound tracks and much, much more.

THE CD-ROM ADVANTAGE

There are numerous advantages in having a CD-ROM drive. CDs can hold the equivalent of up to 600 floppy disks and software developers can design more sophisticated and complex programs to take advantage of this large storage capacity. Cheap production costs, compact design and the practically indestructible nature of CDs also makes them ideal for software storage.

KODAK PHOTOCD COMPATIBLE

Kodak have recently introduced a new technology called Kodak PhotoCD. This allows normal photographs from a camera to be stored on CD discs, which can then be viewed on your PC. Photographs can be enhanced or manipulated using KODAK ACCESS or GRAPHICS WORKS software, to give you the results you need for your business presentations or the "family album".

MULTI-SESSION COMPATIBLE

Some applications require that the information written to a CD-ROM is updated on more than one occasion. This involves several or 'multi' sessions of writing to the disc. All four CD-ROM drives featured are multi-session compatible, which means that they can read all of the information which has been written to a CD in this way. Inferior, single-session drives can only read what was originally written on the first session, not the information added on subsequent sessions. Applications such as Kodak's PhotoCD, which can update CDs with additional photographs, require a multi-session drive to read all the information which may be stored on the disc.

MULTIMEDIA (MPC) COMPATIBLE

The Mitsumi, Panasonic and Sony CD-ROM drives are ready for all types of multimedia applications. They are fully compliant with the Multimedia PC (MPC) standard, full compatibility with existing and future multimedia programs.

REELMAGIC COMPATIBLE

All four CD-ROM drives featured here are fully compatible with ReelMagic, making them ideal drives from which to run the next generation of future software that ReelMagic makes possible.

DOUBLE SPEED TRANSFER

Double Speed Transfer indicates that a drive is able to stream data from the CD-ROM drive to the computer up to twice as fast as a single speed CD-ROM drive. The most obvious benefit of dual speed can be seen when viewing AVI or Quicktime movies from CD-ROM. MPC Applications that need high speed transfer of graphics and audio data, such as the latest photo-realistic games, will also benefit from the increased data transfer rate of double speed drives.

DO I NEED AN INTERFACE CARD?

The four CD-ROM drives shown on this page do not require an additional interface card when used with a PC sound card, eg the Sound Galaxy range, which includes an appropriate Mitsumi/Panasonic/Sony interface. The Mitsumi CD-ROM drive includes a 16-bit AT interface card as standard. The Sony CDU-31A-02 drive comes with a Mediavision 16-bit stereo sound card and therefore, does not require an additional interface. The Panasonic and Sony CDU-31A-03 drives do not include interface cards and would therefore need to be used with an appropriate sound card, eg the Sound Galaxy range (Sony drive has a Sony/Mitsumi adaptor), or an interface card, both of which are available from Silica. AT interface card for Panasonic or Sony CD-ROM Drives - CDR 4072 £19.95+VAT.

EASY TO INSTALL AND USE

All the drives are easy to install. Just slide them into a spare 5.25" drive bay in your PC*. They do not require disc caddies and disc loading is via a manual slide mechanism on the Mitsumi drive and a motorised tray loading mechanism on the Panasonic and Sony drives.

*NOTE: Some drives may require slide rails - check your PC drive bay.

THE MULTIMEDIA ADVANTAGE

The ability to combine many different media via your computer system, will allow you to experience the new and exciting world of 'Multimedia Computing'. Silica are official suppliers for a wide range of the world's best multimedia products which, along with our expert help and advice, can provide you with an unrivalled source of entertainment, education and practical applications. We will send you full details of our multimedia product range on receipt of the coupon below. The following are just some of our most popular products.

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ReelMagic (MID 1024) £399 INC VAT

MITSUMI Panasonic SONY

CD-ROM DRIVES

Model shown - Panasonic CR562B CD-ROM Drive

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INTERFACE OPTIONS

The Mitsumi CD-ROM drive includes an AT interface. The Sony CDU-31A-02 drive includes a 16-bit sound card and therefore does not require an additional interface. Both the Panasonic and Sony (includes Sony/Mitsumi adaptor) CDU-31A-03 drives require an interface. They can be used with sound cards which have Panasonic/Mitsumi/Sony interfaces eg the Sound Galaxy range, or an AT interface card, both of which are available from Silica. AT Interface card for Panasonic and Sony CD-ROM Drives - CDR 4072 £19.95 inc VAT.

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Access Time (ms)	350	460	320	460
Data Transfer (Kb/s) - Single/Dual Speed	150	150	150/300	150/300
MPC Compatible	✔	✔	✔	✔
Kodak PhotoCD Compatible	✔	✔	✔	✔
ReelMagic Compatible	✔	✔	✔	✔
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Multi-Session	✔	✔	✔	✔
5.25" Internal Drive Mounting*	✔	✔	✔	✔
RCA Style Headphone Connector	✔	✔	✔	✔
Motorised Tray Loading Mechanism	–	Soft-Eject	✔	Soft-Eject
Interface/Sound Card Included	AT Interface	16-Bit Stereo Sound Card	–	Sony to Mitsumi Adaptor
Warranty Period	2 Years	1 Year	1 Year	1 Year
Anecdote CD Software	Free	Free	Free	Free
	£115 +VAT = £135.13 CDR 3005	£149 +VAT = £175.08 CDR 4251	£159 +VAT = £186.83 CDR 4097	£159 +VAT = £186.83 CDR 4040

MPC COMPATIBLE

*NOTE: Some drivers may require slide rails - check your PC drive bay.

CD-ROM SOFTWARE SAVE UP TO £245!

Silica are pleased to offer KODAK ACCESS, GRAPHICS WORKS and the interactive movie game 7TH GUEST CD software at very special low prices, when purchased with the Mitsumi, Panasonic or Sony CD-ROM Drives from Silica. See below and right for features and prices.

SOFTWARE FEATURES COMPARISON	Kodak Access	Graphics Works
Direct Photo CD Import	✓	✓
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Logo Creation	–	✓
Painting Tools - Brush etc	–	✓
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Wipe And Fade Between Images	–	✓
Windows Draw Package Included	–	✓
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Picture Image Library	24	1000
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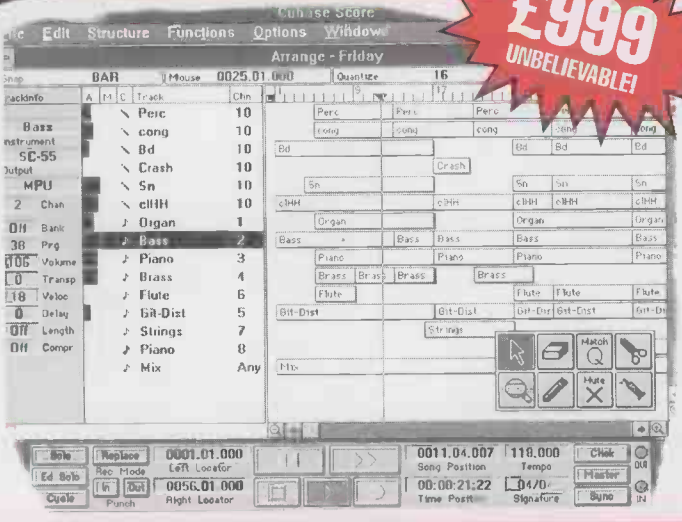

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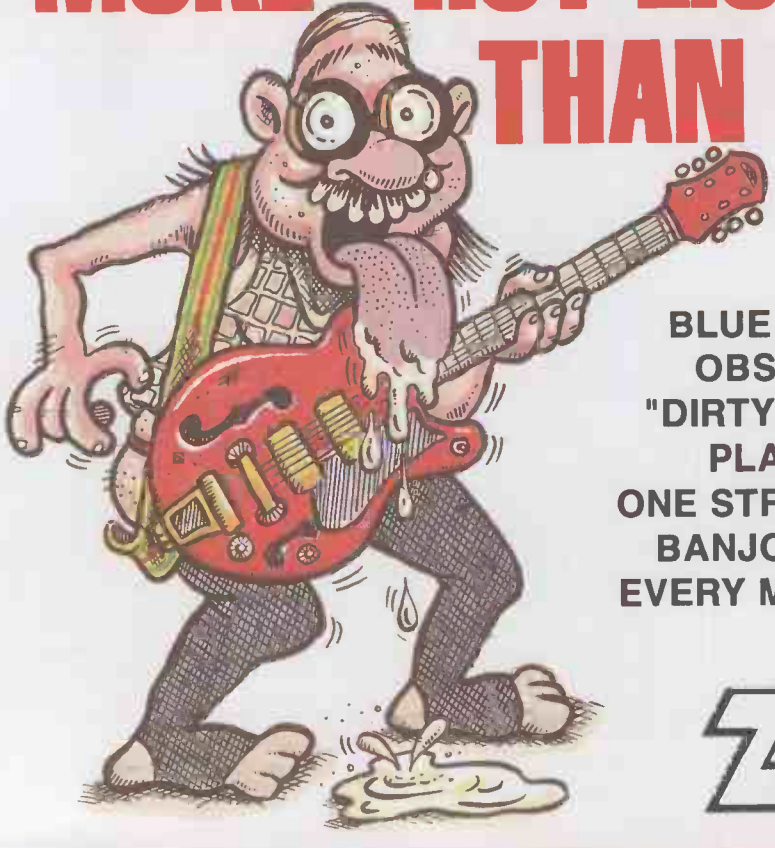

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A TO Z OF ANALOGUE

part 6

MT's exclusive guide to every analogue synth made. Included are keyboards, expanders/sound modules and the better known electronic pianos and organs. Not included are drum machines, standalone sequencers and effects units, vocoders and those guitar/wind synths which aren't regularly used as expanders in their own right.

Readers are invited to submit details of little-known instruments which may be of use in compiling the series and also to point out any mistakes and/or omissions if these occur. All contributions will be fully credited.

Compiled by Peter Forrest

E — Elka continued

● **EMINENT** – Organ
Users include: J-M Jarre (even up to 1993's *Chronologie*)

● **STRING ENSEMBLE**
Users include: J-M Jarre

EMS

British firm with its origins in Peter Zinovieff's '60s London electronic music studio. Produced the VCS3, the first portable voltage controlled synthesiser, pre-dating the Minimoog. In a mirror image of Moog's move from large modular to small portable, they then designed the Synthi 100 – a very large machine indeed. Other products followed at regular intervals, but apart from the (similar) Synthi A/AKS didn't repeat the success of the VCS3.

Despite financial crises and various takeovers (most recently by *Life On Earth* composer Edward Williams), the company is still going, manufacturing Soundbeam MIDI controllers, Vocoders, renovating and repairing EMS synthesisers – and even occasionally making VCS3s and Synthi As to special order.
Contact: Robin Wood, Trendeal Vean Barn, Ladock, Truro, Cornwall TR2 4NW – Tel. 0726 883265

● **COMPUTER SYNTHI** – Massive computer-based modular synthesiser system. Developed 1976 – '77.
Projected price: £25,000
- Designed to provide highly complex digital control of Synthi 100 modules.
- Never available commercially.
- Promoted at Frankfurt Music Fair in 1977 as the "ultimate gargantuan synthesising system" –"*un sintetizzatore di grandi dimension*".

● **DATASYNTH** – Updated version of AKS with 49-note 'real' keyboard and microprocessor patching system. Developed 1980-'81. Still advertised in February 1982.
Projected price: £3500 – £4000.
- Only one prototype made, shown at Frankfurt Show 1981 (and possibly 1982 – though Robin Wood says not!).
- Front panel looked as much like a board game as a synthesiser: the matrix board on the AKS was replaced with a matrix of push-switches – each with its own LED.
- Two envelopes plus analogue delay line.
- Actually worked (at least twice), but had a number of definite quirks.

● **POLYSYNTHI** – Polyphonic 49-note pressure-sensitive synthesiser. 1979 – c.'81.
Original price: £800 then £990 then £1491.
Target price: £100 – £300
- Only 50 or so ever made.
- Colour-coded front panel – extremely bright primary colours. Lots of pretty red, yellow or green LEDs.
- Whole keyboard tends to lurch when you press down for pressure-sensitivity.
- Full polyphony, but only one filter.
- VCOs, two VCLFOs, two ADSR envelopes, filter switchable to 12dB or 24dB.
- White noise; external input; envelope follower.
- Analogue chorus/flanger/delay line – with time parameter under voltage control.
- Optional polyphonic sequencer was claimed to provided ten minutes' worth of music, with transposition, editing, storage of VCF voltages, etc. Never appeared commercially, but it was up and running at the launch of the Polysynthi, and at the Frankfurt Show 1979. Possibly the first polyphonic sequencer ever.

Interface:	VFM:
Sounds: ★	Character: ★
Controls: ★	Collectability: ★★
Memories:	Ease of use:

● **PORTABELLA** – See Synthi A.

● **PUTNEY** – See VCS3.

● **SYNTHI 100** – Massive 2-keyboard, velocity sensitive, 64-note, 9-VCO, semi-modular synthesiser. January 1971 – '78 (updated in 1981).
Original price: £5500 – c.£12000.
Target price: £1500 – £3000
Users include: Radio Belgrade, Wolfgang Dauner, Daniel Miller, Melodia (Moscow record label), Bruno Spoerri, Karl-Heinz Stockhausen on *Zodiac* (CD 24) and *Sirius* (CD 26), University Of East Anglia electronic music studio.
- Only around 30 were ever produced.
- Too big to be portable – 2000mm x 950mm x 837mm – and correspondingly heavy.
- Three LFOs, eight VCFs plus two stereo outs.
- Horizontal control surface houses two massive patch matrices (3600 pin positions each), joysticks, and VCA sliders, pan, filters and mutes – plus a 'producer desk' section ➤

➤ where you can put your score/notes/coffee.

• Vertical surface houses the VCFs – four HPF, four LPF.

• Three envelopes (not enough, actually, but as with other modular equipment, you can patch in more); three ring modulators; two voltage-controlled spring reverbs; 8-octave fixed filter bank; fully-fledged oscilloscope; digital frequency readout; eight input amps, four send and return amps, six sine/ramp VCOs, three square/triangle VCOs, three VCLFOs, eight VU meters, three slew limiters, two envelope followers, sample-and-hold, two noise generators, a pitch-to-voltage converter and the sequencer output controls.

• Uses 0.5 volt/octave control (just to be awkward) – but you can set the gain pot on the inputs to half gain in order to interface with one volt/octave equipment.

• Incredible versatility: rather like three or four totally interconnected VCS3s linked into a mixer and simple sequencer.

• Revolutionary 6-channel 3-track digital sequencer with a maximum storage capacity of 256 events – nothing by today's standard, but at the time (well before the birth of the personal computer) it was unrivalled.

• Originally bought only by large college music studios and a few high-profile composers.

• Stockhausen's model cost 120,000DM c.1977 – a custom design with a big vocoder at its heart.

• Updated in 1981, with Curtis VCOs, filters and EGs, and much more sequencer memory, but only one was sold – to a music college in Spain.

Interface: ★★★	VFM:
Sounds: ★★★★	Character: ★★★★★★
Controls: ★★★★★	Collectability: ★★★★★★
Memories:	Ease of use:

● **SYNTHI A** – Re-packaged VCS3 in a suitcase. May 1971 – present.

Original price: £198

Target price: £300 – £600

Users include: Aphex Twin, Richard Burgess, Cabaret Voltaire, Steve Hillage/System 7, Richard Pinhas, Tangerine Dream, Klaus Schulze.

• A very neat and well-conceived re-design of the VCS3 housed in a black ABS briefcase.

• Controls rather more cramped than VCS3, but otherwise identical.

• Original prototype called Portabella – unique and collectable.

• See VCS3 for more details.

Interface: ★★	VFM: ★
Sounds: ★★★	Character: ★★★★★
Controls: ★★★	Collectability: ★★★★★
Memories:	Ease of use:★

● **SYNTHI AKS** – Synthi A with keyboard and sequencer built-in. March 1972 – present.

Original price: £420

Target price: £380 – £700

Users include: Cabaret Voltaire, Clock DVA, Depeche Mode, Brian Eno, Simon House/Hawkwind, Dave Hewson, J-M Jarre, Alan Parsons, Pink Floyd (*Dark Side Of The Moon*).

• 30-note non-moving mini keyboard (blue keys rather than white).

• 256-event digital sequencer fitted into other half of Synthi A briefcase.

• If anything, more sought-after than the VCS3, mainly because of the sequencer.

• Still on sale in late '80s, and available to special order today.

• See VCS3 for more details.

Interface: ★	VFM: ★
Sounds: ★★★	Character: ★★★★★
Controls: ★★★★	Collectability: ★★★★★★
Memories:★	Ease of use:★

Pack up your troubles with the EMS Synthi AKS

● **SYNTHI E** – Battery-powered patchable synthesiser for educational use. February 1975 – 1980.

Original price: £250 – £486

Target price: £100 – £150

• Housed in similar briefcase to Synthi A, but not as neatly.

• Mini-jack patch cords and sockets replaced the Synthi A's matrix board – mainly for cost reasons.

• One VCO, one LFO, one VCF, one envelope generator, a VCA/ring modulator, audio input and envelope follower, 50 mini-jack sockets, 12 sliders, good range of in and out connectors including microphone in, noise, inverter, simple 2-channel output mixer and tone control.

• Very basic design, but semi-modular construction still offers more control than conventional synthesisers. For example, low, band and high-pass outputs are available simultaneously from the VCF, whilst resonance can be voltage controlled.

• Included small internal speaker.

• Optional 18V mains adaptor.

• Curious (cheap and nasty) non-moving keyboard with one section like a ribbon controller and (underneath it) another split up into stepped segments, but not in piano key arrangement – just 24 small rectangles. The advantage of this is that you're no longer encouraged to think in conventional octaves (no bad thing when it comes to EMS synthesisers).

• Eventually (Feb 1977 onwards) an optional DKE keyboard became available for £180.

Interface: ★★	VFM:
Sounds: ★	Character: ★
Controls: ★★	Collectability: ★
Memories:	Ease of use:★

● **SYNTHI P** – Mark III version of the Synthi A. c.1974.

Target price: c.£1000

• Three EMS prototypes were made, and a fourth 'unofficial' machine is known to exist.

• Original VCS3/Synthi A designer David Cockerell re-vamped the design with chip-heaters to improve oscillator stability, and replacement filters/envelopes, etc – plus extra control possibilities.

• Different shaped case – more square at the top.

• Very temperamental – eg, strange filter responses. Basically, the design wasn't followed through; problems were left unresolved – probably because it was too similar to the AKS to justify the expense of setting up a new production line.

• One of the most collectable of EMS products.

● **SYNTHI QUEG** – Quadraphonic effects generator. c.1975.

• Four joysticks.

• Designed by Tim Orr.

● **VCS3** – The world's first portable synthesiser. A classic patchable design. November 1969 – present.

Original price: £330 – £1900.

Target price: £400 – £700

E&MM retrospective: Aug '86.

Users include: BBC Radiophonic Workshop, Biting Tongues, Tim Blake, Ian Boddy, Dave Brock/Hawkwind, Arthur Brown, Richard Burgess, Cabaret Voltaire, Vince Clarke, Vic Emerson, Brian Eno, Chris Franke, Pascal Gabriel, The Grid, J-M Jarre (six of them), Eddie Jobson/UK, King Crimson, Francis Monkman, Patrick Moraz, Michael Nyman, The Orb, Poli Palmer/Family, Todd Rundgren ('Something, Anything'), Pete Townshend/The Who (organ processing on 'Won't Get Fooled Again'), David Vorhaus (the first VSC3 ever made?) (*An Electric Storm In Hell*), Rick Wright/Pink Floyd (*Dark Side Of The Moon*)

• Remarkably good value when it first appeared: as well as being the first portable synth, it was also the first 'affordable' machine.

• Its most distinctive feature is the pin-matrix patchboard: a matrix of 16 x 16 sockets which serve the same function as patch leads on most modular synths. At first this can be mind-boggling, but does become intuitive in time. Nevertheless, you need to exercise care and have reasonable eyesight.

• If, for example, you want to patch VCO1 and VCO2 into the ring modulator, you simply insert small pins into the matrix where the rows and columns intersect. Putting together a simple voice requires quite a number of pins, but the basic idea is the same and there's no problem with patch cords getting in the way.

• As with the Minimoog, there are two purely audio VCOs, and one (frequency range .05Hz – 500Hz) which will work as an audio VCO in the mid and bass range, but is more usually used as an LFO.

• VCO pitch controlled by highly accurate vernier pots, but the oscillators are so unstable that any attempt to keep them

Pin tweaks: the legendary VCS3

in tune is pretty much doomed to failure.

• Awful as a melodic instrument but (almost) unsurpassed as a sound-effects generator.

• Curious envelope generator terminology, but, thanks to voltage control, highly versatile.

• Noise generator, ring modulator, in-built stereo speakers, and a spring reverb with wet/dry ratio voltage-controlled.

• Distinctive L-shaped hardwood case.

• First flowering of the joystick controller, nearly 20 years before the advent of vector synthesis.

• VU meter switchable to read either a control voltage or signal level.

• Mic and line inputs, stereo outputs with the advantage of voltage controlled panning.

• 37-note DK1 keyboard came as optional extra. Priced at £150, it was velocity-sensitive with an internal sawtooth oscillator. Later followed (c.1972) by the DK0 (a cheaper version without the oscillator), and then (c.1973) by the DK2, which was similar to the DK1 but duophonic.

• Early versions had slightly different pin-matrix configuration – meter output was in first column, and there were no white lines separating sections. These machines were unable to power the KS sequencer. Mark II versions (and the Synthi A) were designed (from March 1972) to overcome this problem, and also had slightly improved oscillator stability.

• Prestopatch socket (32-way edge connector) could provide instant patching set-ups – by inserting various configurations of a multi-pin plug – but you still had to set the knobs by hand.

• Originally, EMS planned to make up Prestopatches to customers' specification, but this proved very labour-intensive (and there was little demand), so they just produced three standard settings – 'Keyboard', 'Guitar', and (of course) 'Battle'.

• Some batches of VCS3s (and Synthi A/AKS) didn't have the Prestopatch facility and EMS eventually stopped providing them altogether. The socket was then referred to as a 'computer interface' – which one or two people actually got working.

• The matrix and the pins are susceptible to dirt, wear and damage, and are now very expensive for EMS to buy. Consequently, they may ultimately come to be seen as the machines' Achilles heel.

• Not easily interfaceable with other manufacturers' equipment. The (approx) 0.3 volts/octave spec is no big problem, but there are no readily-available gate input sockets. Modifications (by EMS) are necessary before using a MIDI/CV box.

• A range of other modifications are also available from EMS, such as oscillator sync and stabilisation, voltage control of waveforms, extended attack times – and so on.

• The VCS3 was originally called the Putney (still is in USA, where they and the Synthi A/AKS are highly sought after) and the DK1 keyboard was known as the Cricklewood. The intials VCS3, incidentally, stood for Voltage Controlled Studio Mark Three.

Interface: ★★	VFM: ★
Sounds: ★★★★★	Character: ★★★★★★
Controls: ★★★★★	Collectability: ★★★★★★
Memories:	Ease of use:★

● **VCS4** – Two prototypes were made:
Version A: 1971 design built by guitar-maker Kif Wood (Robin Wood's brother). A mustard-coloured box containing a VCS3 with a moving keyboard attached. Built as a prototype when EMS were looking for a compact, portable version of the VCS3. The competing design (Synthi A) not surprisingly won.
Version B: c.1971 design by David Cockerell for Peter Zinovieff – two VCS3s side-by-side above an organ-style 5-octave keyboard with knobs and sliders.

E-mu

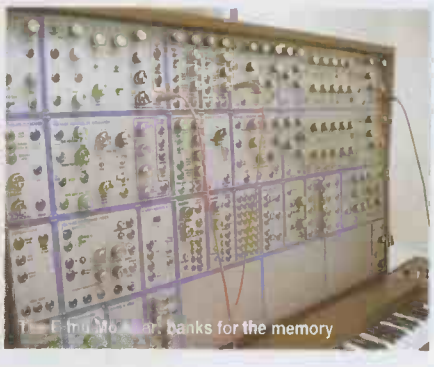
Still one of the most successful synthesiser manufacturers in the world, with their high-quality samplers and well-regarded Proteus, Morpheus and Vintage Keys modules, E-mu's history goes back through the first relatively affordable sampler, the Emulator, and their digitally-scanned polyphonic keyboard, to one of the most sophisticated and well-made modular systems ever manufactured.
Original founders and designers were Dave Rossum and Scott Wedge. E-mu also had a part in the design of the SSM chips used in early Prophet 5s.

● **25** – Monophonic synthesiser. c.1971. Only two machines ever made.

• Basic Minimoog-style synthesiser.

• Scott Wedge joined in time to make the second machine.

● **MODULAR** – Fully-fledged modular synthesiser, assembled to order. 1972 – '81.
Original price: $1500 (for basic system).
Target price: £2000 – £8000.


The E-mu Modular: banks for the memory

Users include: Vince Clarke, Darryl Dragon/John Kay band, Patrick Gleeson (*Beyond The Sun* featuring a 96-oscillator set-up), Herbie Hancock, Roger Linn, Hideki Matsutahe, John McLaughlin, Lenny Pickett/Tower Of Power, Leon Russell, Frank Zappa, Hans Zimmer.

• All the usual complement of modules, including lag processors, transient generators, analogue sequencers, reverb units and envelope followers.

• Excellent construction – solid aluminium panels, high quality knobs and switches.

• Buyer could make own choice of modules, so each one had to be hand-assembled to order.

• About 100 systems were made in all.

• Keyboard started out as a digitally-scanned monophonic unit – the first ever. This was then made polyphonic (and licensed to Oberheim for the 4-voice and 8-voice). Next came the 4060 polyphonic microprocessor-controlled keyboard, with a 16-channel sequencer. This was the catalyst for the development of the Prophet 5 and all subsequent polyphonic synths.

• From 1973 onwards, E-mu designed and worked on a guitar synth for John McLaughlin. He used it on tour from 1975, but it proved unwieldy and unreliable. Tuning (on six separate voice boards) took ten minutes, and patching longer still.

Interface: ★★	VFM:
Sounds: ★★★★	Character: ★★★★★
Controls: ★★★★★	Collectability: ★★★★★★
Memories:	Ease of use:

● **AUDITY** – 5-octave, 61-note synthesiser. The ultimate analogue synth? 1978 – '79.
Projected price: $70,000

• Peter Baumann commissioned a massive 16-voice computer-controlled synth from E-mu, with each voice having two analogue oscillators, several filters, VCAs, LFOs and transient generators – all digitally controllable. E-mu then decided to take the idea and develop the Audity.

• A fully functioning prototype was built with funds provided by royalties from SCI (for the Prophet 5 keyboard); but just as the Audity was about to be shown at the 1980 AES show, SCI pulled the plug on the royalties and the project was shelved. (E-mu saw the Fairlight for the first time at that show, and set about designing the Emulator – undoubtedly a far better move commercially!)

• Sharply sloping rear panel, with computer control systems on left, and synthesiser controls on right – 45 knobs plus numerous push-buttons and sliders.

ETI

Electronics Today International, **an electronic constructors' magazine, published several projects, including the predecessors of the Transcendent 2000 and Polysynth, 1024 Composer, and Vocoder.**

● **4600** – 4-VCO, 48-note (F-E) monosynth with pin-matrix patching. c.1970s.
Original price: Unknown
Target price: £100 – £300

• Circuitry later used by Maplin 3800 and 5600 synthesisers.

• Temperamental, but with its oscillator power and EMS-style pin matrix, full of possibilities.

• Two full ADSRs with extra delay control, and a transient generator – start level, delay 1, slope 1, hold level, hold delay, slope 2, and final level controls.

• Sine, triangle, sawtooth, inverted sawtooth and square waves available on all oscillators, with pulse width modulation.

• Good mixing facilities.

Interface: ★★	VFM: ★
Sounds: ★★	Character: ★★★
Controls: ★★★★★	Collectability: ★★★
Memories:	Ease of use:★

● **ORGATRON** – Electric version of reed organ.

• Produced in late '30s, then further developed by Wurlitzer.

to be continued...

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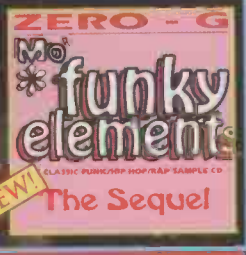

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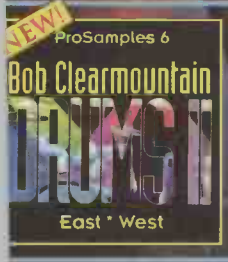

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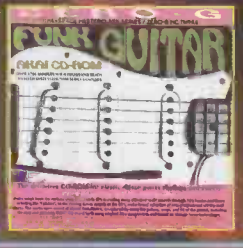

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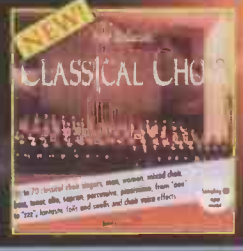

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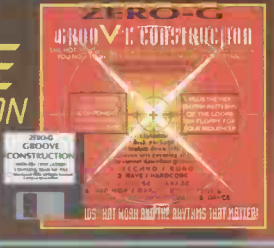

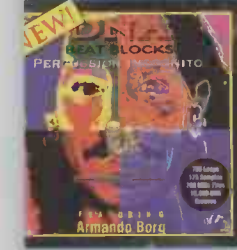

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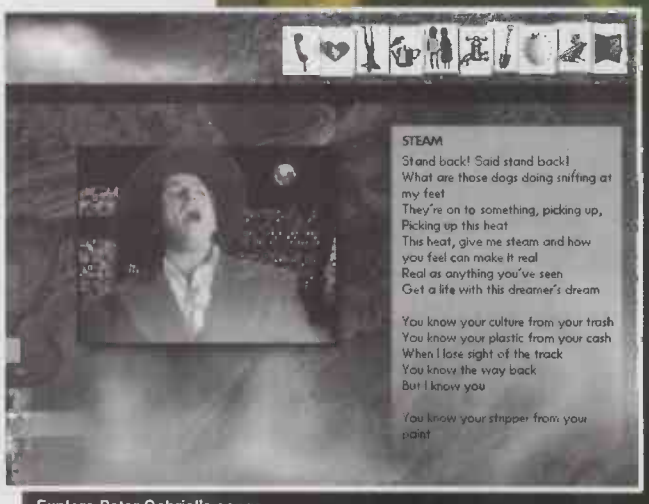
Peter Gabriel's CD-ROM *Xplora 1* combines audio, video, text and graphics within an interactive computer environment. Phil Ward meets the team behind it, and finds himself having fun - and, of course...

Games Without Frontiers

A few years ago, a software designer called Steve Nelson was working in California with Apple's Advanced Technology group. There, in the pioneering atmosphere of Silicon Valley, it struck him that he could take some of the readily available ingredients of one of his favourite albums – the video, the sleeve artwork and the music itself – and sample them into a prototype version of some interactive software that he'd developed.

As it happens, the album was *So* by Peter Gabriel, and the program became a basic CD-ROM demo that presented the album in a completely new way. Combining snatches of video, audio and promotional graphics which could be dipped into in any order by the user, the demo caught the attention and the imagination of one or two significant people. Including Peter Gabriel.

Next thing you know, there is not only a new company headed by Steve Nelson called Brilliant Media, but also a new company called Real World Multimedia based at Gabriel's celebrated studio



Explore Peter Gabriel's songs...

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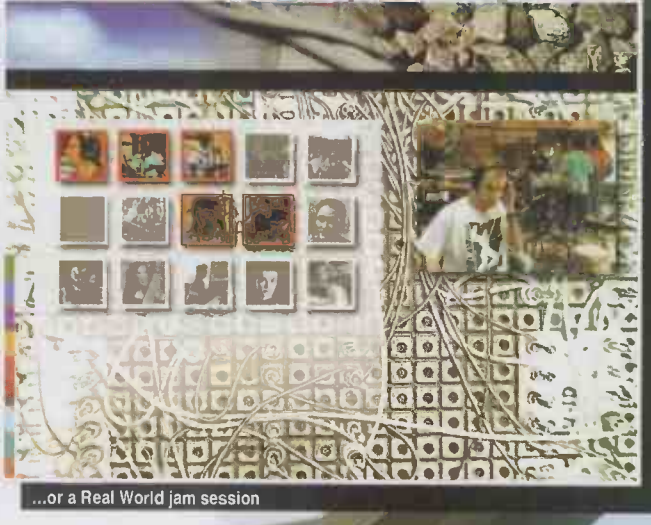
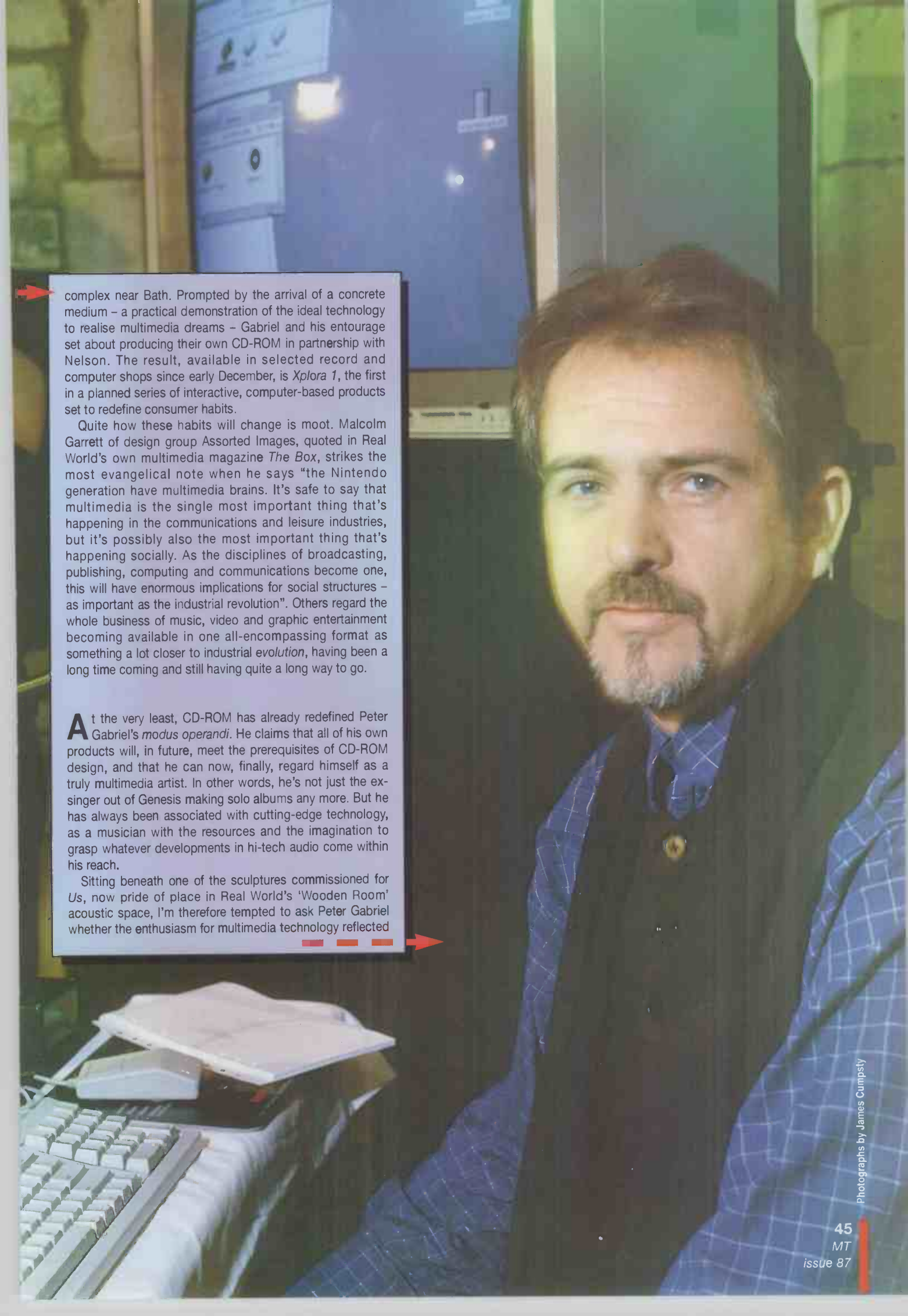

...or a Real World jam session



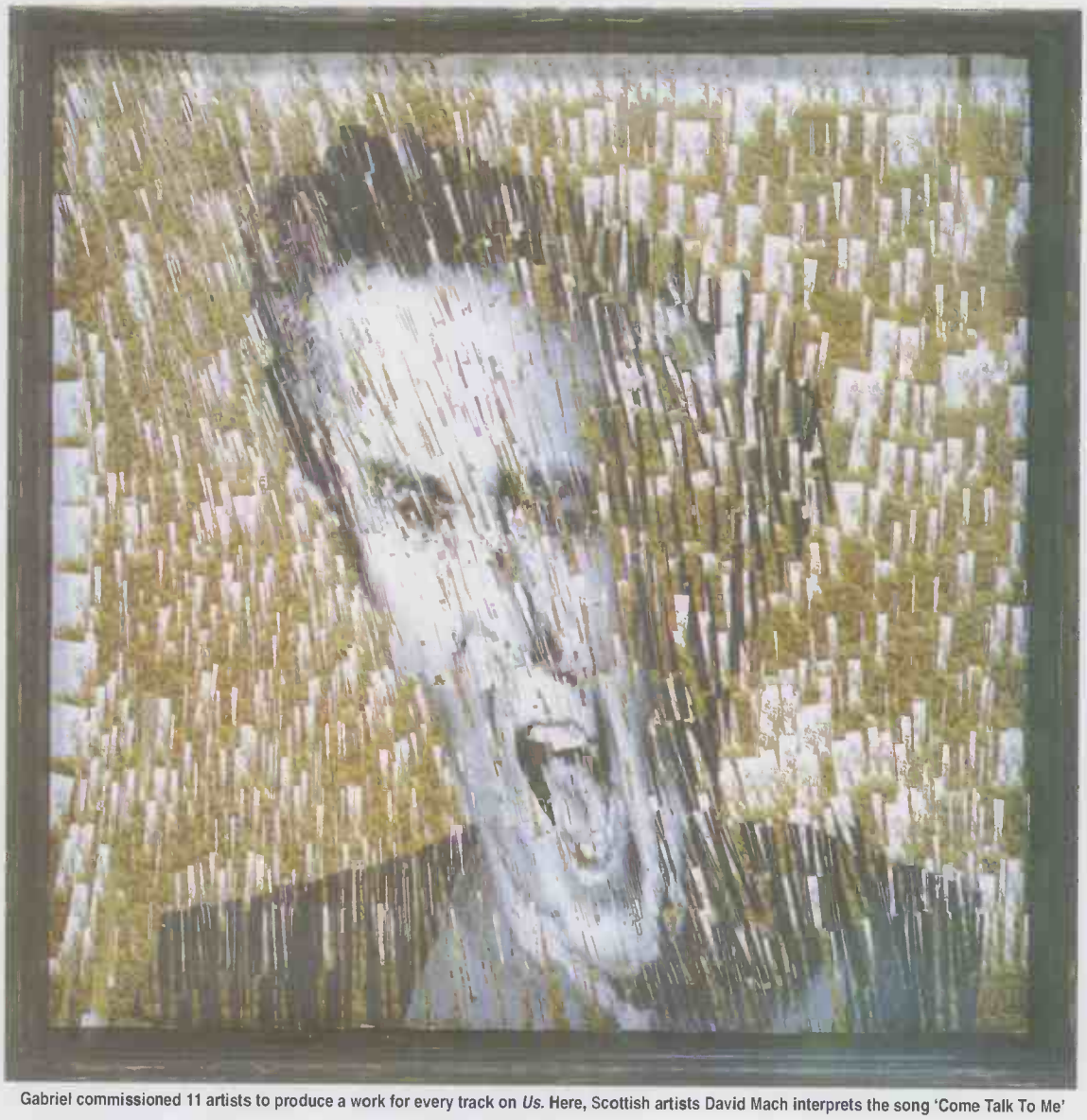
complex near Bath. Prompted by the arrival of a concrete medium – a practical demonstration of the ideal technology to realise multimedia dreams – Gabriel and his entourage set about producing their own CD-ROM in partnership with Nelson. The result, available in selected record and computer shops since early December, is *Xplora 1*, the first in a planned series of interactive, computer-based products set to redefine consumer habits.

Quite how these habits will change is moot. Malcolm Garrett of design group Assorted Images, quoted in Real World's own multimedia magazine *The Box*, strikes the most evangelical note when he says "the Nintendo generation have multimedia brains. It's safe to say that multimedia is the single most important thing that's happening in the communications and leisure industries, but it's possibly also the most important thing that's happening socially. As the disciplines of broadcasting, publishing, computing and communications become one, this will have enormous implications for social structures – as important as the industrial revolution". Others regard the whole business of music, video and graphic entertainment becoming available in one all-encompassing format as something a lot closer to industrial *evolution*, having been a long time coming and still having quite a long way to go.

At the very least, CD-ROM has already redefined Peter Gabriel's *modus operandi*. He claims that all of his own products will, in future, meet the prerequisites of CD-ROM design, and that he can now, finally, regard himself as a truly multimedia artist. In other words, he's not just the ex-singer out of Genesis making solo albums any more. But he has always been associated with cutting-edge technology, as a musician with the resources and the imagination to grasp whatever developments in hi-tech audio come within his reach.

Sitting beneath one of the sculptures commissioned for *Us*, now pride of place in Real World's 'Wooden Room' acoustic space, I'm therefore tempted to ask Peter Gabriel whether the enthusiasm for multimedia technology reflected

Photographs by James Cumpsty



Gabriel commissioned 11 artists to produce a work for every track on *Us*. Here, Scottish artists David Mach interprets the song 'Come Talk To Me'

any sense in which purely audio technology had lost some of its pioneering excitement.

"I don't think it's so much because audio is not exciting," he replies. "I've been working upstairs on a piece of music with Nusrat Fateh Ali Khan for an Oliver Stone film for the last three days, and I've found that just as exciting as I ever have. So I haven't lost my enthusiasm for concentrating on music at all. It's just that I've always wanted to be an 'experience' designer, in a sense. Some of the old stuff I used to do – *The Lamb Lies Down On Broadway* with Genesis, for instance – was still very much trying to incorporate visualised story ideas along with the music.

"The CD-ROM is an extension of all that, it's not that separate. I think that for some artists who have grown up with just music, and their dedication is to one instrument, then that is what focusses them. And there are others like me who haven't necessarily mastered a technique in any one direction, but who just like to explore ideas – artists who are more interested in ideas and writing than playing."

The absence of virtuosity in any one instrument aligns Gabriel with a new generation of artists who have found their voices by mastering the techniques of the computer, and who share that innate visual sense – a fact which has not escaped his attention.

"Yeah, I think that's really interesting and exciting. I think the actual tools are still going to change a lot, though. I don't think the mouse is God's gift to the creative process, it can be very physically frustrating. So we have to come up with new interfaces, and I think there are a few people working on it...

"But it is very exciting to be an artist at this particular time, because there is a fundamental revolution happening in the way that media are getting mixed together. It provides us with all sorts of possibilities as artists and as individuals, and I think it will change the way that we communicate with each other. Obviously, to be there at the birth of a new medium and have a chance to explore putting things together in different ways is very exciting. I think there are all sorts of possibilities now that I and a lot of others can't wait to get into."

Demonstrating *Xplora 1* with Peter Gabriel on this fine winter's day is one Mike Large. Mike is a significant part of the "eccentric bunch of enthusiasts" that now forms the Real World Multimedia entourage. For years he has run the recording studios as a going commercial concern – Real World is available to any clients who can afford it – and overseen the many technical developments which characterise this enviable facility. He too has heard the call of multimedia, and as an engineer has a precise notion of both its creative role and its position in the development of the technology available to musicians.

"People who are interested in technology," he believes, "and who have exhausted the possibilities that audio technology has to offer them, will want to get into this. But I don't think that has anything to do with the creativity involved, in that people make great records straight to stereo with a 4-channel mixer, and people make great records running 96 tracks through an SSL with more computers than you can shake a stick at. It doesn't make any difference to the quality of the art that comes out at the end. As Peter ➤

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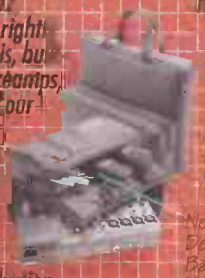

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says, some artists are going to get into this and others aren't, and there's certainly a side of him which has always been more than a musician, that whole visual side, which will only be satisfied by something like this.

"For me, the three biggest things to affect music over the last 20-or-so years have been 24-track recording, sampling and sequencing. They all brought their own revolutions. There may be something else to come, in terms of making music, and it may be that we all get carried away with developing multimedia instead of developing different things for the studio – but I don't think it's as clear cut as all that. Technology has progressed; computers have arrived with more speed and power. I encountered my first sequencer about 10 years ago, and that was because computers with the power to sequence were cheap enough for the likes of you and me to work on. Now, computers that can deal with multimedia are cheap enough for the likes of you and me to work on...

"At the same time, synthesis and re-synthesis has always been something that people are chasing. The de-reverberator... maybe at a time when it's cheap enough for us to buy boxes that can remove natural reverb, and completely re-create things, and do all the things people have been talking about for years, there'll be another revolution in the studio. But I don't think any of those things has actually changed what comes out of the studio in the end. This, however," he proclaims, nodding sagely at a computer screen now bustling with a video grab of pounding Burundi drummers, "this probably has, because it enables people to think in more than one dimension – if you can define music as being one dimension. And it's non-linear, so you're no longer creating something with an obvious beginning, middle and end."

Explore, if you will, the entire Real World Records catalogue...

One of the most compelling of *Xplora*'s interactive features is the 'tour' of Real World Studios itself, in which you can follow video footage from a camcorder carried around the complex, clicking on various doors as it pans and, in so doing, selecting and viewing the sequence for that particular room. Here's where you get to mix one of the tracks from *Us*, watch a writing session involving Gabriel and programmer Dave Bottrill, and encounter Brian Eno presiding *Gamesmaster*-style over a mix'n'match jam session featuring a selection – *your* selection – of Real World alumni such as Jah Wobble, Ayub Oganda and Sinead O'Connor.

The tour is typical of the disk's aesthetics: as you wander around the studio buildings – a converted mill in a leafy Wiltshire village – you hear birdsong, running water and the lazy crunch of footsteps on the gravel beneath your feet. Details like this remind you of two things. Firstly, technology of this kind can be anything you want it to be – you're designing software with such powerful audio and visual interfaces that the environment you create can be a true reflection of your personality. And secondly, this being the case, *Xplora* is quite patently the work of an ageing hippy on a mission to counter the *Bladerunner*-inspired urban imagery of most computer games.

"We spent a lot of time trying to get the interface right," Gabriel admits, "because obviously it's new territory and some of the stuff that I've seen so far looks a bit cold and sci-fi, a little dehumanising. We very much wanted something that was personal and warm and had some natural references, so you will see water, leaves, rocks, flowers and grass. It's these elements as backdrops which I think have helped to give this disc its character. It looks different to other stuff that I've seen around.

"In many of the screens, you see a marriage of hi-tech and handmade, which is part of the aesthetic philosophy for much of what we do. We wanted to get under the skin. There are things that you can deconstruct and reconstruct, one of which is my face, which is actually the vehicle that allows you to travel round to other parts of the disk."

Specifically, cut-outs of Gabriel's eyes, nose, mouth and ear act as a simple menu for accessing the four sections of the disk: *Us*, the album and videos; Real World Records, including a look behind the scenes at a WOMAD festival; a world music directory; and a 'personal file' which details Gabriel's involvement in Amnesty International, the Witness project, the Brits and Grammy awards, plus the studio tour.

Within the world music section of the CD-ROM, it's possible to select from a bundle of ethnic instruments and access a neat little demo screen, featuring text, video, photographic and audio examples of the chosen item. It's also possible, by clicking on the appropriate part of the picture, to 'play' single notes – ie. to trigger one of the samples. This enables you to get to grips with the sonic range of the thing, but don't expect to be able to use it as part of a sequence...

"That will be next," says Gabriel. "It would be great to have some kind of creative pack for the DIYers, especially using the tools that we worked with on a particular record. I think that would be a nice thing to look at next time. But we're taking it stage by stage."

For this reason, at this stage at least, *Xplora*'s educational properties frequently outweigh any sense of really creative involvement. The mixing options offered for 'Steam' in the *Us* section, for example, are steadfastly restricted to volume and mute for just four tracks – guitar, bass, drums and vocal. But according to Mike Large, this does not reflect any lack of confidence on the part of the potentially vulnerable artist.

"I don't think fear of what people might see will affect how you make the record. You can always polish everything that you're going to present, anyway. The four tracks of 'Steam' were created by Richard Evans, and there's nothing in there that Peter wouldn't want you to hear. It's still a controlled process; you're not getting to mix raw audio. What is true, though, is that Peter viewed this album as a multimedia project. Even at the outset, as well as recording an album he was thinking about videos; he was commissioning 10 works of art; he appointed Mike Coulson and Nichola Bruce to co-ordinate the whole visual side of the album; he launched a magazine, *The Box*; we produced a long-form video; and we produced a CD-ROM. There was a whole suite of stuff in Peter's mind when he started on the record."

You're suddenly nagged by the realisation that only one of these media actually represents new technology. Could it be that the crucial role for CD-ROM is as a catalyst for producing many disparate elements, with the confidence that there is now a medium which can draw them all together?

"I think it would have been in Peter's mind," Mike replies. "He's been thinking multimedia for a long time. I guess we became gradually aware that it would be possible – and then suddenly the technology had arrived. So it made sense to do a lot of the things that

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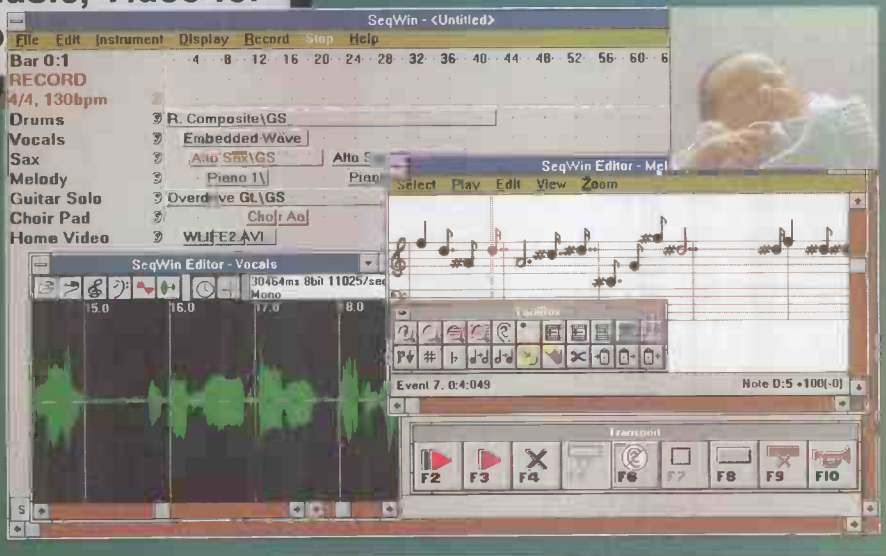

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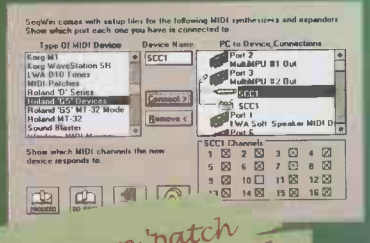

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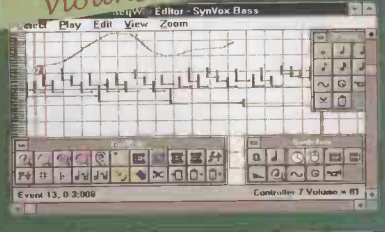

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by Lowrie Woolf Associates, Ltd.

Peter had wanted to do before, knowing that it was now feasible to produce something in which it could all be used."

Gabriel himself is happy to expose the creative processes, at least as much as a carefully designed CD-ROM will allow...

"What we are seeing here is really the first generation of the type of technology that lets people get inside the work of different artists. This is manifesting itself in the home in this type of equipment, and we are going to have more. We are still only beginning to feel our way into the home environment."

In the meantime, plans are afoot to take this kind of interactive experience out into the open, and build a sort of high-brow Disneyland to showcase the potential of the various new technologies. The project has already reached the stage of serious planning talks with the civic authorities of Barcelona.

"The idea," says Gabriel, "is to create a purpose-built experience park. A larger scale theme park is the closest analogy so far, but it will be something that will integrate some of the environments that you would normally come across in art galleries, churches, at Disney, in arcades and science museums. These influences are going to produce a new medium. I've been working on the idea with a large group of artists, and with Brian Eno and Laurie Anderson in particular. It will be a beautiful, natural environment, but also a place where you could explore and challenge yourself in the various experiences, which we would bury underground. Teams of artists would be collaborating to create the park, so you get architects, psychologists, sculptors, film-makers and musicians collaborating on creating these wonderful worlds that people can get inside and have some serious adventures in."

I heard a rumour that Kraftwerk might be among those artists...

"One of the guys we met, Rolf Engel, our German co-ordinator for the project, has worked with them on a few things, so he's trying to involve them in some way. We're certainly very interested in what they've done and some of their ideas. The whole park is still just about ideas; if it turns into lumps of stuff and becomes real, I'll be very happy. In the meantime, it still has a very important role to play for all of us who are involved with it, just as a pool for ideas, an inspiration."

That CD-ROM technology has fired Peter Gabriel's imagination, there can be no doubt. Furthermore, when it comes to discussions of the wider implications of digital information processing, Gabriel belongs in the same evangelical camp as Malcolm Garrett.

"I think the way people will interact with all this technology is going to change the way that we live and the way that we think. This particular medium will allow us to interact in real time and build new environments and communications as we go. There are some parallels with sampling technology, which is still fairly new to us. Musicians are suddenly able to grab any sounds, rhythms, colours, textures and noises and start throwing them together in different ways, even in their bedrooms. It doesn't necessarily mean that because you have 500 colours on your palette you are going to make better paintings – content is still everything – but it does provide people with a lot more tools.

"It empowers people, because it will give them access to so much. You won't need to acquire great skill levels in each field to utilise what these facilities offer – you can use other people's skills to help create something of your own. It's a fundamental cultural shift. This sort of TV/computer technology, which still is for most people a fairly passive relationship, is suddenly going to be something that can really activate us. There are times, I'm sure, that people will want to be a vegetable and just sit back and absorb – that's how I use TV sometimes – but it's also going to be able to be flipped around to become a creative catalyst to fire us, charge us and accelerate us down the routes that excite us."

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"I think it's extremely exciting and believe that the technology could transform a lot of the world both socially and politically. I know that sometimes people think it's arrogant and elitist for a rich westerner to be talking about the joys of computers and technology when in many parts of the world people are struggling to feed themselves, and I certainly accept that. However, if you look at the history of technology and the way that prices decrease, you will see that transistor radios, televisions, fax machines or telephones were all once luxury, elitist items – and I'm sure the price of this technology will come right down.

"The satellite communications systems that we are now developing along with global telephone links mean that any village on the surface of the planet could have a small information kit, which would allow them to satellite up-link and down-link. With a few low-cost PCs, people in these villages could become information processors, and the impact of that could allow the third world to shift into information economies. They can then communicate directly, without having to go through the government communications system, and with solar power they can power their systems without having to be dependent on their countries' power supplies. So I'm sure that it's going to be harder to control and censor information. It's going to be impossible to stop, just as the Soviet Union found it impossible to stop the introduction of fax machines. To me, it's a great source of joy that this sort of networking is going to happen whether governments want it or not, and there is a real chance of the technology empowering the people."

Perhaps it is the function of the visionary to perplex us with grandiose dreams. But if Peter Gabriel's unfettered optimism seems to get just a little carried away at times, *Xplora 1* is at least a bold, pioneering and downright fun kind of a product for an established rock star to be responsible for. At the very least, it's an excellent compilation for folks who just plain love Peter Gabriel. One foot, it would seem, is still firmly planted in the crunchy gravel of the real world.

"I think that we've learned a lot about what is and isn't possible at the moment, but also we have got a sense of what we would like to do in the future, and some of the other people that we would like to work with. I personally would like to see maybe 12 titles on the go by the end of next year. We are trying to involve some of the people that we have been talking to on this experience park project and bring them into this technology by creating some discs together.

"This type of work is really the most exciting thing that is going on at the moment, and I think it's going to become the centre of my work as an artist and also of what we do at Real World as publishers. In a sense, it's a move from being a record company into becoming a sort of interactive creator and experience design label – which is the name I prefer. It feels as if we are on the edge of a revolution." ●

Mike Large and Peter Gabriel launch *Xplora 1*

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A piano for every occasion – and a few more besides Ian Waugh

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REVIEW

Roland S-760

sampler

A slimmed-down rear panel with less outputs but a SCSI port for extra flexibility, and room for upgrades

Roland's latest contender for the sampler crown combines a heavyweight spec with a keenly competitive price. Andrew Jones puts on his referee's hat...

Believe it or not, nearly all the people *MT* has interviewed over the past few years have had one thing in common. Whether they be ageing synth pioneers, raving sample teensters, cutting-edge trancers or chart-hitting megastars, cast a glance down their equipment list and chances are you'll to see two words: Akai sampler.

It's fair to say that Akai have had a stranglehold on the sampler market for some while now. The company's S1000 sampler became the industry standard and a legend in studios around the world. Of their more recent models, the S01 with its sub-£700 price tag convincingly covers the budget end of the market, while the more expensive S2800/3000 and CD3000 models do the same for the high end.

Other manufacturers haven't exactly sat back and done nothing, however. Roland have mounted perhaps the strongest challenge. Back in 1990 their S-770 attempted to lure the most finnicky of sampler buyers away from the Akai fold but, while it was critically acclaimed, its price tag (close on £5000) put it beyond the reach of most users. A year later the S750 at around £3000 sold in greater numbers but never achieved the kind of success that it perhaps deserved.

Now comes the S-760. On paper it seems to have the same spec as the S-750, yet Roland have reduced the price dramatically, to just £1699. Clearly they've recognised a price gap in the market and decided to fill it.

The S-760 is a stereo 16-bit sampler with 2Mb of RAM as standard, expandable in 8Mb chunks to 32Mb using standard Mac SIMMs (the S750, in comparison, can only be upgraded to 18Mb). At the time of writing, fully expanding the memory would cost around £1400. The S760's cheaper price has of course meant some compromises. Most obviously, Roland have managed to squeeze all the technology into a 1U-high rackmount unit. Also, there are only four individual outputs as opposed to the eight found on the S-750 – and no mic inputs.

The sampler's reduced height inevitably means that it has a smaller LCD than its S-series companions. The 160 x 64-dot resolution allows for more detail than you'll find on many a 1U unit. However, while it's good enough to show sample waveforms and sample editing data, it's still a little limited for some operations. Also, while stepping through the heaps of choices available on the 760 you soon realise that Roland's design thinking is, as with their other samplers, based around mouse operation – which isn't implemented as standard on the new sampler.

Fortunately, Roland will be releasing an expansion card providing a mouse port and TV/monitor connector in early 1994. All the information currently displayed can then be shown on a monitor in much the same format as that displayed on the S-750's screen, and the options selected via the mouse. The card will also have four digital outs – bringing the total to eight – and two digital ins. The OP-760-1 card, as it is known, is expected to sell for £300.

The 760's front panel is quite a basic affair, with a set of cursors for stepping through screen options and two keys for

Jam-packed: The S-760 with free CD-ROM, system and sound disks.

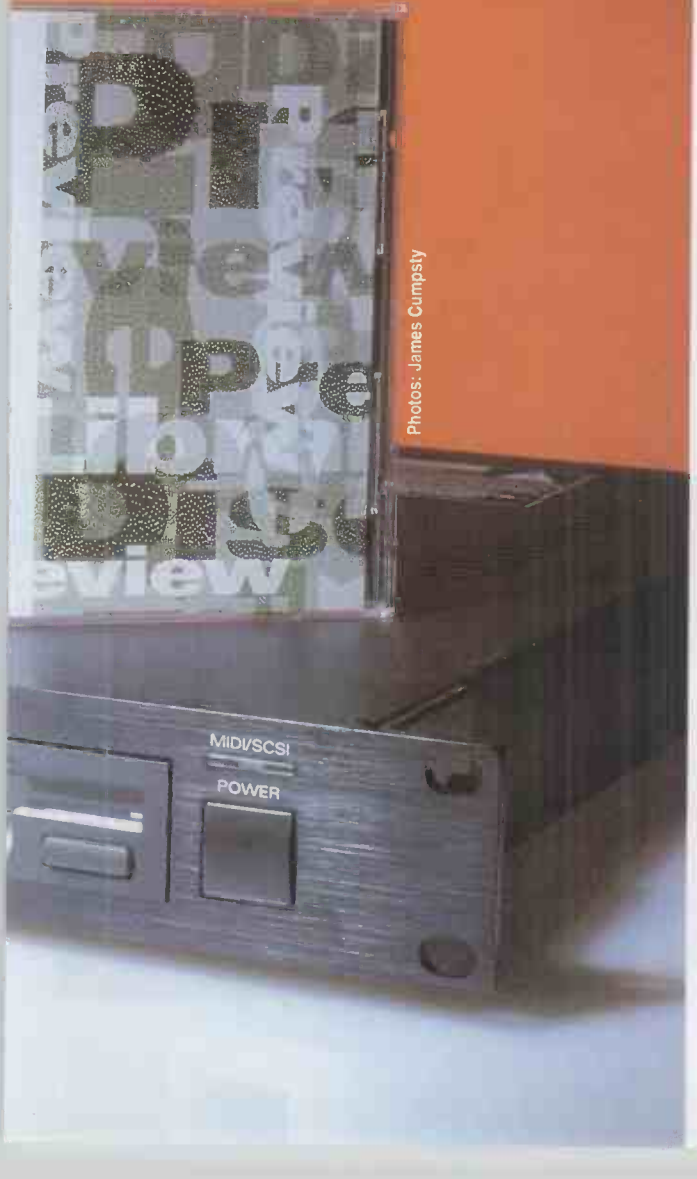
Hard fax

Sample RAM: 2Mb expandable to 32Mb
Polyphony: 24 voices
Sampling frequencies: 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz
Data format: 16-bit linear
Signal processing: 16-bit A/D; 18-bit D/A; 24-bit internal
Effects: 2-band EQ
Internal memory:
Volume = 1
Performance = 64
Patch = 128
Partial = 255
Sample = 512
Connectors: headphones, L&R stereo inputs, four individual outputs, MIDI In, Out/Thru, SCSI
Frequency response: At 48kHz : 10Hz – 23.4kHz (+0/-3dB)
At 44.1kHz : 10Hz – 21.5kHz (+0/-3dB)
At 32kHz: 10Hz – 15.5kHz (+0/-3dB)
Noise: Stereo outputs or individual outputs = <100dBm
Input level: -15dBm
Output level: 15dBm

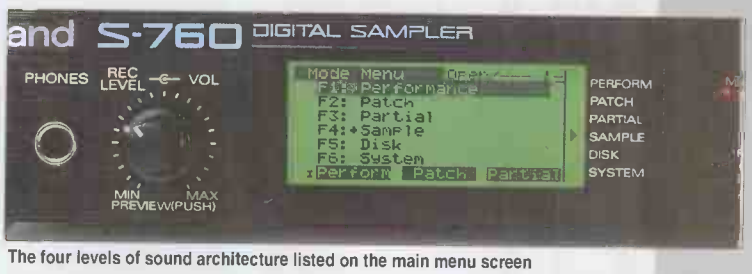
entering/opening menus, plus a set of function keys and two dials for adjusting input and output levels and editing onscreen values. Completing the panel are the 3.5" disk drive and the power on/off switch.

The sampler's rear panel includes a SCSI port for connection of storage devices such as hard disks and CD-ROM drives. In addition to Roland S series data, you can also load Akai samples and programs into the S760 via SCSI (with the exception, it seems, of S3000 and S3200 data); to paraphrase an old saying: if you can't beat 'em, make sure you can read 'em...

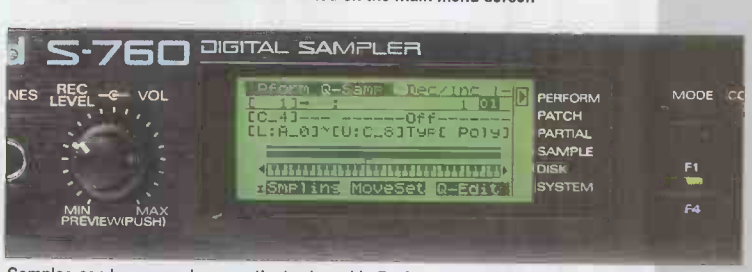
Included with the 760 is a free CD-ROM which provides orchestra, synth, world, rhythm and SFX samples – a great start to your collection should you wish to invest in the necessary



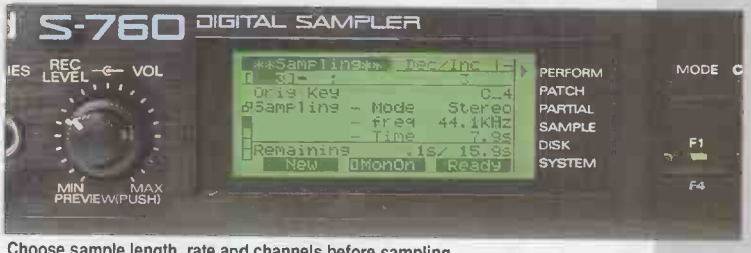
Photos: James Cumpsty



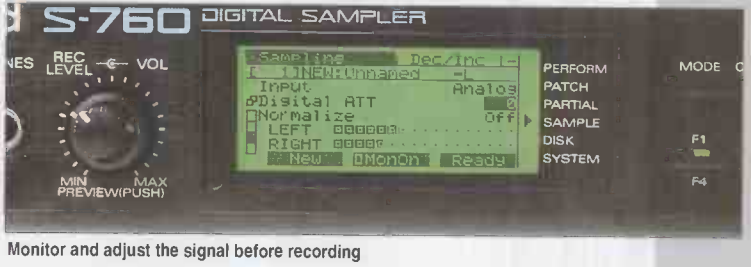
The four levels of sound architecture listed on the main menu screen



Samples can be mapped across the keyboard in Performance mode



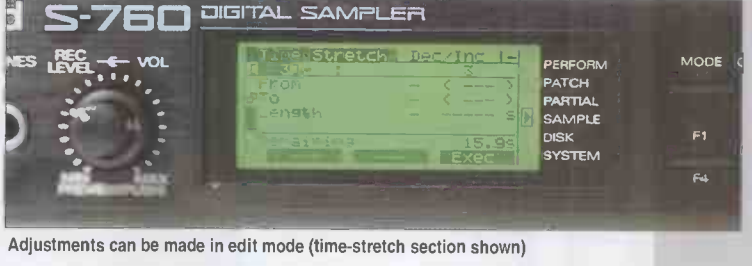
Choose sample length, rate and channels before sampling



Monitor and adjust the signal before recording

The signal is displayed onscreen after sampling

All the editing options listed in Sample mode



Adjustments can be made in edit mode (time-stretch section shown)

CD-ROM drive. As an added bonus, any purchaser of the 760 has free and unlimited access to Roland's existing CD-ROM sample archive; all you have to do is book time at the company's Fleet offices, then turn up armed with enough discs.

Those familiar with Roland's S-770 and S-750 samplers will recognise many of the commands and features on the 760. The main onscreen menu lists six options: Performance, Patch, Partial, Sample, Disk and System. The first four of these reflect the 760's sample architecture; while they're confusing initially, an understanding of them is essential to the operation of the 760.

A Sample is, not surprisingly, the actual raw sound data, and the Sample mode is where you do your sampling and sample editing.

Partial mode lets you combine up to four Samples to create a sound called, yes, a Partial. In this mode you can tune, transpose and pan these Samples, route them through a Time Variant Filter and Time Variant Amplifier, and apply LFO modulation to them. Patch mode is the next level up, allowing you to assign multiple Partials to the keyboard in order to create multisplit textures. If you sample at this level, the S-760 automatically assigns the data to a Sample, a Patch and a Partial for you.

The highest level is represented by Performance mode; this is where you assign your Patches to multiple parts for multitimbral MIDI playback, up to a maximum of 32 parts. Each part can be assigned a single Patch and given MIDI channel, volume level and keyboard range settings. Finally, all the data held in the S-760's memory can conveniently be saved to disk as a single file called a Volume.

A more detailed look at sampling on the S-760 will give you a good idea of what using the sampler is like. Sampling is best dealt with in Performance mode so that you can set up the Performance in one fell swoop. You're given the choice of Q-Samp, a 'quick' method of getting samples into the machine, followed by Q-Edit to make swift adjustments to your sample.

The Sample page indicates the present sample rate, allocated sample time, and whether sampling is in stereo or mono; adjustments to all these parameters are made using the inc/dec dial.

Stereo sampling at 48kHz into the S-760's standard 2Mb of RAM gives you 11.2 seconds sampling time. At the other end of the scale, a mono sample at 16kHz could be up to 67.4 seconds long.

The sample input level can be monitored and adjusted, with two horizontal 'moving bars' giving a graphic indication of the signal level for easy setting. When you're pleased with your setup, you simply press one of the function keys to begin sampling. The waveform is then displayed and the sample can be auditioned via MIDI (keyboard, sequencer etc) or by pressing the volume control button.

With your sample now in memory, there are a sack-full of editing possibilities at your disposal. It's easy just to go straight into Q-Edit where, depending on what mode you are working in, several options are available including the commonly-used Loop.

For more complex sound editing, you need to enter Sample mode and press the Value/menu knob to bring up a full list of options. These include a more extensive list of loop commands, auto-truncate, sample compression/expansion, rate conversion, cut, splice, erase, insert, mix and combine. You also get timestretch for sample length alteration that doesn't affect sample pitch, and a digital filter section with low/high pass selection and resonance. One notable parameter is Analogue feel, first seen on Roland's D-70 synth and also to be found on the S-750. This feature provides a subtle pitch modulation in an attempt to create a warmer, more natural sound like that of an analogue synth.

One notable absentee is the resampling feature which was a useful option on the S-750. This allows you to resample complete Performances, or arrangements such as chords, basslines and melodies made up of several Patches. These (re)samples can then be triggered from a single key. Roland tell us that resampling will soon be available for the S-760 as part of a software update.

As you might expect with such a high spec, the S-760 doesn't fall short in the sound quality department; it certainly maintains the high standards set by its two predecessors, with a quoted frequency response of 10Hz to 23.4kHz. Of particular note are a powerful bass end and a dynamic quality across the range. Load up the sound disk that comes with the S-760 and you'll get a full demonstration of the machine's capabilities; the drum set and strings sound particularly rich and dynamic.

At last Roland have come up with the goods: a quality sampler at a very attractive price that looks set to dominate the mid-budget section of the market while also appealing to those looking for top-notch sampling capabilities.

The S-760 is not without its drawbacks, but Roland's plans for the future may well iron these out. The limited number of outputs provided as standard will no doubt annoy some people, but the optional OP-760-1 board will at least give them the full eight; others in the market for a sampler at this price may well not have enough spare mixer channels to take advantage of so many outputs.

The presently limited screen and keystroke combination also have drawbacks. However, again with the upgrade the system will be able to benefit from a much faster and more intuitive mouse-driven operation and full-size monitor display. And even with the extra £300 needed for this upgrade, the whole system will still be very competitively priced.

The learning curve is steeper than most, but with the Q-Samp and Q-Edit options you'll find yourself in the world of sampling soon after power-up. Crossing the more complex bridges of sample editing can be made at a later stage, at your own pace. Those familiar with Roland sampling will certainly feel at home with the S-760.

So while cost-cutting measures are in evidence, most have left the S-760 untarnished and a sampler to be reckoned with. And with a spec right up there with the big boys, the S-760 is sure to draw much attention from those who previously thought that 'serious' sampling required an outlay of more than £3000.

THE LAST WORD

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REVIEW

Trade iT's

DigiTape

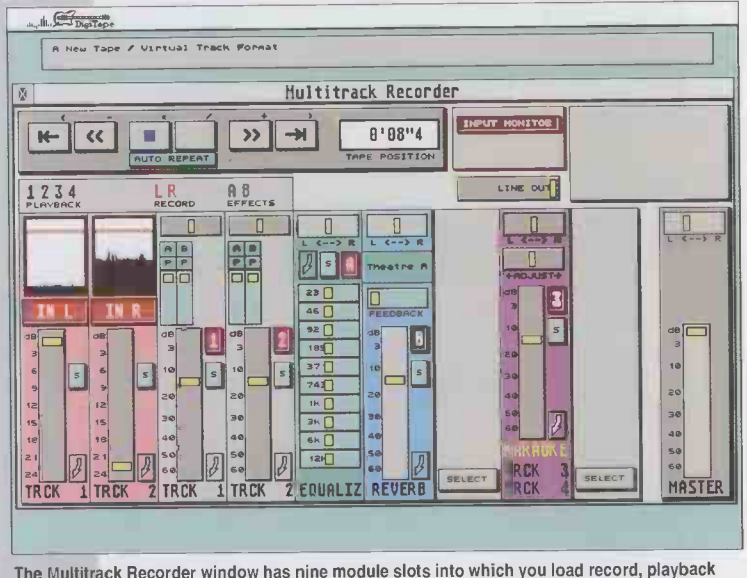
Direct-to-disk recording for the Atari Falcon

Atari may have produced a Falcon but is the software good enough to prevent it becoming a turkey? Ian Waugh carves it up...

Throughout its 'lengthy' gestation period, Atari's Falcon promised to be *the* new computer as far as the musician was concerned. Based on the ST – so existing Atari users would feel reasonably at home – it had all the requisite go-faster stripes and that all-important DSP (Digital Signal Processor) chip with its ability to handle direct-to-disk recording without any additional hardware – other than a large hard disk, of course.

The delay in its arrival in the shops, however, gave the PC and Mac the opportunity to make their own inroads into the music market. Many people, I suspect, will have already traded in their ST for one of these computers, spurred on by the fact that most sequencers are available on all three platforms so a change of machine doesn't necessarily mean a change of sequencer.

And software takes time to develop so it's only recently that the major sequencers have been made Falcon-compatible and the long-awaited direct-to-disk recording systems have appeared.



The Multitrack Recorder window has nine module slots into which you load record, playback and effects modules.

The Edit window lets you zoom in and edit up to two tracks at a time. You can link tracks to preserve stereo pairs.

DigiTape is the most recent of these systems. It is copy-protected by a dongle which plugs into the Falcon's DSP socket, leaving the cartridge port free for music program dongles. It requires a screen resolution of at least 640 x 400 and will work quite happily in mono or colour – although if you use more than 16 colours the manual says the performance may slow down and, conversely, running in mono may speed up an otherwise sluggish system.

The program uses a series of windows which are selected from GEM menus. None of the windows have their own menus: all functions are selected by clicking on icons within the windows and in many cases sub-menus pop up. A little unconventional but it works.

Before recording, it is necessary to create a 'Tape' by telling the program how many tracks you want to record, the sampling rate and the length of the recording. This minimises the work the hard disk has to do, especially if the recording is all in one area of the disk. It's a good idea to run a defragmenter over the disk before you start if it's sharing space with other files.

It must be pointed out that there was actually a problem with the Tape creation process with certain versions of the Falcon's AHDI which controls the hard disk. DigiTape won't work with v6.06 – the most recent release (as of writing) – due, according to the programmers, to a bug in the Atari driver. DigiTape was designed to work with v6.03, but this can also cause problems: namely the overwriting of a neighbouring disk partition if the partition you are writing to is filled! The programmers are currently working on a custom driver which should be available by the time you read this – but do check!

DigiTape supports eight sample rates – 8.195, 9.834, 12.292, 16.390, 19.668, 24.585, 32.780 and 49.170 kHz. These are determined by the Falcon's hardware which is why they may seem a little 'inbetween'. Other sample rates will be available with the S/PDIF (see Sound and the Falcon) including 44.1 and 48kHz.

As well as the program, you need to budget for a hard disk large enough for your music. A 4-minute song using all four tracks, for example, will require about 200Mb of disk space.

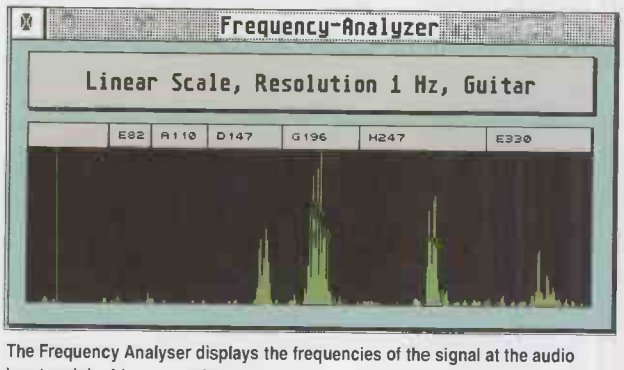
DigiTape uses a system of virtual tracks which simply means that it can access more tracks than it can playback at once – in this case 32 tracks with 8-track playback ability. Tracks may be linked in stereo pairs and edited together or singly. You can, however, only record on one or two tracks at the same time due to limitations in the Falcon's hardware.

Recording takes place in the Multitrack Recorder window. It

has the usual transport controls, a tape position counter, master volume control and nine module slots or channels. Playback, record and effect functions are assigned to these channels as required. If you need more than nine, you can hide modules and load new ones over the top – although some sort of scrolling window, perhaps, would have been a more elegant solution (or simply a window design which made better use of the screen).

The system supports eight playback lines (the signal processor supports eight time slots), two record lines (the left and right signals from the Mic input) and four effect lines. An information line above the slots tells you which modules are in use; the left and right outputs of every module are connected to the master fader.

The effects are used during playback – you can't add them during recording. At this stage, the manual points out that the performance of the system in terms of the number of playback and effects modules you can use may be limited due to (relatively) slow disk access speed and limited processor memory. Using a high sampling rate won't help, either. If this does prove a problem, the solution is to remove modules or reduce the sampling rate (although then you'll have to re-record your music).



The Frequency Analyser displays the frequencies of the signal at the audio input and doubles as a guitar tuner.

When recording, it's necessary to use the Input Monitor and the volume control of the Record channel to set the correct record level. This is crucial because overloading a digital input produces a distinctively horrible grunging noise.

To play back a track you need to assign a playback module to a slot. You can then run the signal through some effects modules, if you wish: the playback modules have a volume send control to determine the amount of signal passed to the effects. They also have a pre-fade button which stops the module's main volume fader affecting the output level to the effect. A Set-up file is created for each Tape which remembers the modules selected and fader positions.

As well as recording from the Mic input, you can record the left or right master output channel in order to mix down several tracks into one. Digital bouncing, of course, obviates the noise problems associated with audio tape mixdowns.

DigiTape has a cute – OK, *hideous* – karaoke playback option which attempts to remove the vocals from a record. It does this by assuming that the vocals will be in the middle of the stereo position and it subtracts the right channel from the left leaving the music on a single monophonic left channel.

Of course, this will take with it anything else panned to the centre and if the vocals are not close to the centre or if they use stereo reverb it won't work very well. Still,

Sound and the Falcon

In the review of the 4T/FX direct-to-disk software in the August issue I questioned the quality of the output from the Falcon. My experiments with DigiTape produced similar results – namely loss of the highs and a degree of muddiness to the sound – although DigiTape's EQ module can brighten the highs and soften the lows which helps compensate a little.

To put this into perspective, I'm sure that if you heard the playback only you'd think it sounded fine. It's when you do an AB comparison with the original signal that the difference becomes apparent – and even then it's more obvious with bright and dry sounds than with full bandwidth material.

Conversations with dozens of people involved with the Falcon and direct-to-disk (bearing in mind that some have declared interests in the subject) have so far proved inconclusive. Even Atari admit that there are customers who are unhappy with the sound output despite reports of the Falcon and direct-to-disk software being used in studios.

All of which leads me to the conclusion that either I have a suspect Falcon (it was one of the very early models fitted with TOS 4.01), or some people's idea of 'CD quality' is different to others.

However, the reduced quality theory seems to be reinforced by direct-to-disk software developers themselves. Both d2d and Trade iT are producing S/PDIF digital interfaces which will connect directly to the Falcon's DSP, so bypassing the computer's internal A/D converters. While these devices do offer more than simply an alternative A/D unit, it suggests that these companies have realised that the Falcon's circuitry could be better and that there will be a demand for higher quality recording.

The Trade iT S/PDIF interface has its own A-to-D and D-to-A converters and will enable DigiTape to access frequencies of 44.1kHz for CD and 48.0kHz for DAT. It also offers direct connection to CD and DAT via optical or coaxial connectors and it will allow you to master songs directly to DAT or Mini Disk machines (heaven help us) at 16-bit stereo. It will cost around £300.

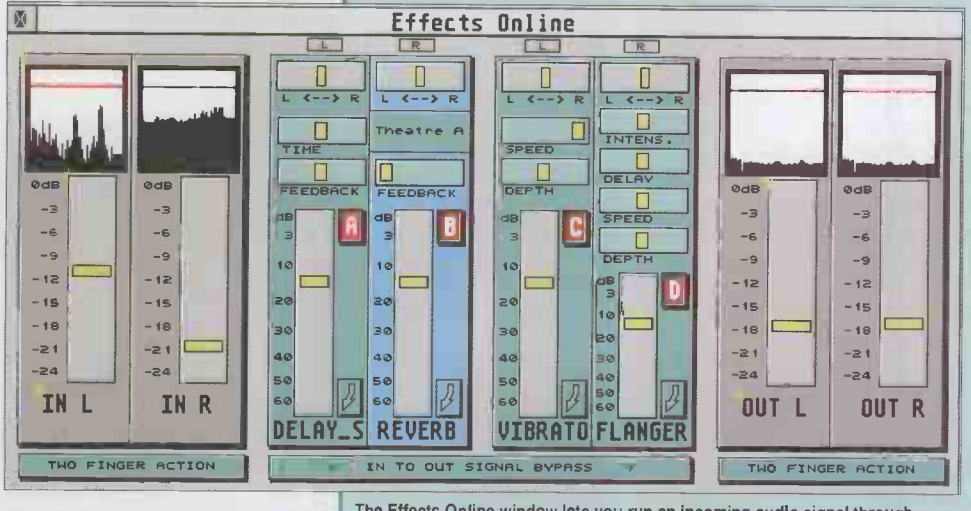
In view of the controversy surrounding this issue, we'd be very interested in hearing from anyone out there who is using a Falcon for direct-to-disk recording while we try to unearth some definitive answers on the subject. Let us know which Falcon you have, the version of TOS and what sort of results you are getting – good or bad. Ta!

The effects rack

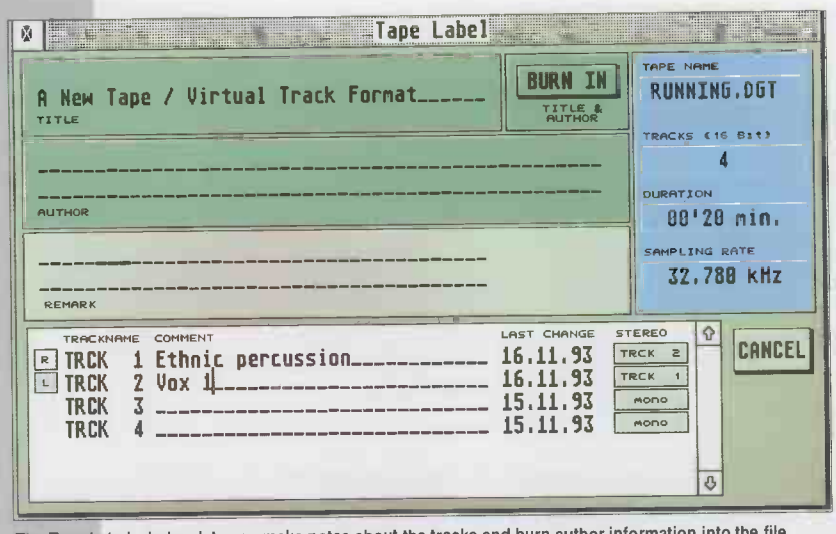
DigiTape has seven built-in software effects – Short Delay, Long Delay, Reverb (containing 12 preset types), 10-band Graphic Equaliser, Vibrato, Flanger, and a Noise Gate with Distortion. You can use them in the Effects Online page in real time or in the Recorder window during playback.

The effects are all usable although not quite on a par with dedicated units – which is to be expected. The EQ in particular is very useful.

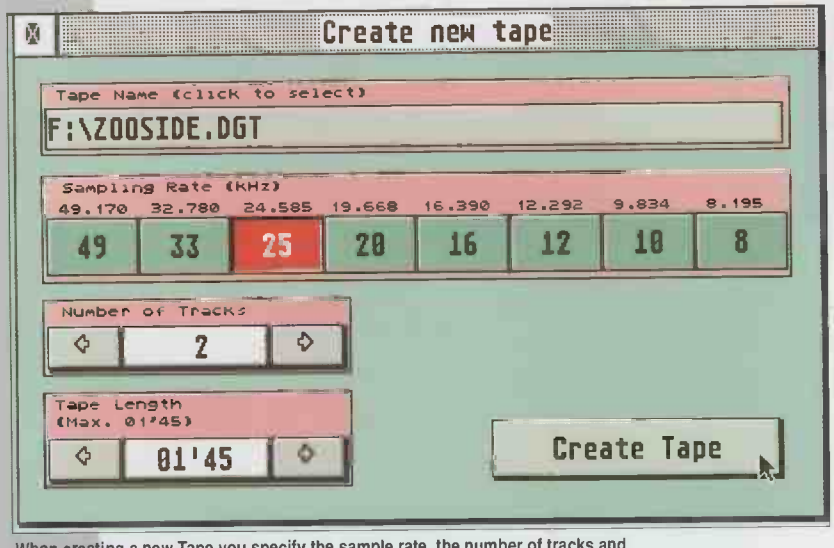
You can also load in new effect modules from disk. One, a hall-type reverb, is supplied along with detailed documentation about its construction. You'll need to be a nifty programmer to write your own modules, but this could lead to third-party module production – either as commercial entities or PD. Interesting...



The Effects Online window lets you run an incoming audio signal through various software effects modules.



The Tape Label window lets you make notes about the tracks and burn author information into the file.



When creating a new Tape you specify the sample rate, the number of tracks and the length of the recording.

it's another bullet in the armoury for crass entertainment and lazy club singers who can't be bothered to create or buy their own backing tracks.

A direct-to-disk system wouldn't be complete without some form of editing. In the Edit Tape window you can see up to two tracks at once, shuffle markers around and create blocks to perform copy, paste, delete and insert operations. You can export and import AVR files, allowing data exchange with other Atari sampling software. It's also a convenient method of saving blocks for use elsewhere in the music.

A time scale ruler above the edit windows can show time, MIDI beats or video time scales to help sync the music to whatever other format you may want to use it with. There's a snap-to-MIDI-beat function and DigiTape can output MIDI clock and Song Pointers so you can sync it to an external sequencer.

One strange omission is cuesheets. These are used in direct-to-disk software to playback sections of music. The cues only point to the area of the recording which is to be played so you can create loops and overlaps very easily without actually altering the original data – a process known as non-destructive editing.

DigiTape edits are performed on the original data which means you don't have the same flexibility as non-destructive editing and, of course, you have to be careful with your edits, backing up data before changes are made. The Effects Online Rack has separate left and right In and Out controls plus four signal processor slots into which you can load software FX modules. It processes incoming signals in real time and you can also use it to try out different effect combinations prior to recording – although, as previously mentioned, you can't add effects during recording.

Other features include a Tape Label window where you can enter track names and comments about the song. There's a neat option to 'burn' this into the file, a useful adjunct should someone rip off your masterpiece and you need to prove authorship. There's also a Frequency Analyser which, as well as creating spikes in response to the frequencies of incoming signals, can be used as a guitar tuner. Not being the owner of a guitar, I was unable to put this to the test and I'm not sure how much use it would be to the average user. But it's there if you need it – and it does look pretty.

Even though the program is already up to v2.0, the manual is still in preliminary form, which would seem to indicate that there is still a fair bit of development to be done. In part it's an obvious translation from the German, but the rest of it seems to have been written by a native Brit. In the way of most preliminary manuals, instructions are very brief and there are no illustrations. In fact, it's only just up to the job of explaining how the program works. Registered users are promised a final draft manual but by that time they will probably have sussed out how it all works anyway.

That said, although the program is relatively easy to use, once you get into it, it's not quite as straightforward as it might be. Having to assign modules to the nine channels is a novel way of integrating the various record, playback and effect functions but it's not the most obvious. The user is entitled to better documentation, especially at this price.

It takes time to produce a complex piece of software such as DigiTape. While it's easy to understand why the developers wanted to get it on the market as quickly as possible, I suspect it will need a few more tweaks before it is seen as being complete.

You can create your own wish list; certain features will be more important to some users than others – automated mixdown, punch in, time stretching, varispeed and fades. Personally, I'd like to see non-destructive editing. But the program as it stands does work and the updates are free.

Interestingly, the developers have also released a cut down version of the program called DigiTape Lite (£149). It has fewer tracks, generally fewer facilities and no editing functions at all.

DigiTape is the second major direct-to-disk system for the Falcon. As of writing, we await the arrival of Cubase Audio which promises MIDI sequencer and audio integration on the same computer – something the other two systems are unable to offer (although they can both sync to an external sequencer). In this respect PC direct-to-disk systems such as Session 8 (see review in our November '93 issue) offer far greater flexibility through their ability to sync with any compatible sequencer running concurrently within Windows.

However, if you don't need MIDI or if you already have a favourite sequencer running on your old ST, say, then DigiTape has real potential. ●

THE LAST WORD

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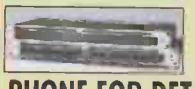
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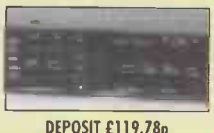
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REVIEW

E-mu

Morpheus

Z-plane synthesiser

Simon Trask listens to the evolving shape of synthesis as E-mu take sound creation to a new plane...

In recent years very few instruments have challenged the orthodoxy of sample-based synthesis, and of those probably only Korg's Wavestation has achieved mainstream success. Now E-mu, who have made a name for themselves with a series of popular sample playback modules (the Proteus range, Pro/formance, Pro/cussion, Vintage Keys), have dared to try something a bit different.

With Morpheus the company have retained the familiar subtractive synthesis architecture but re-thought the filter section. Like Korg with the Wavestation, they've also concentrated on providing a large number and wide variety of waveforms in the module's wave ROM, without excluding samples altogether. Much of Morpheus will be familiar ground to Proteus and Vintage Keys owners. In fact, despite the inclusion of the new 14-pole filters, two new Function Generators and an onboard effects section, you could be forgiven for thinking that Morpheus was just another E-mu module – it even comes in the same casing as Vintage Keys, though with a modified front-panel layout. Yet it has its own sonic character, and that is down to the preponderance of waveforms and the unique characteristics of the filtering.

It helps to think of a Morpheus filter as a cube, with Filter Frequency Tracking (previously Transform1) being the 'x' axis, Transform2 being the 'y' axis and Morphing being the 'z' axis, or depth (see *MT*'s preview in the November '93 issue for a graphic depiction of this cube). Now think in terms of keyboard tracking, velocity response and note duration respectively – and you have the relationship between the 'cube' and the musical effect of the filters. At each point on the cube is a filter frame, which is a 'snapshot' of the filter parameter settings; Morpheus interpolates between these various frames in response to key, velocity and a host of other note-on and real-time modulation sources, and generates a single, composite filter frame at any given moment.

Morphing, the process which gives Morpheus its name, is the process of continuous interpolation between two filter frames on the 'z' axis. There's a lot more to this than simple filter sweeping, which involves the progression of a single cutoff point from one value to another, as Morpheus's multipole filters allow a much greater degree of control over a sound's frequency content.

Morpheus allows you to assign any one of 198 filter types (including a null filter ie. no filtering) to each of the two oscillators, Primary and Secondary, which make up a Preset. In this way you can quickly create new sounds simply by trying out multiple filter types with a single source sound, or multiple source sounds with a single filter type – either way, it's a hit-or-miss process whose main virtue is speed.

Perhaps sensibly, E-mu don't allow you to create your own filter frames. In fact, the filter parameters are relatively few: type, level, morph offset, filter frequency tracking, filter transform2 and filter reverse on/off (in each case with separate Primary and Secondary values). Tracking, transform2 and morphing can each be put under note-on control from a variety of modulation sources, and morphing, additionally, placed under real-time control.

The modulation matrix is where you shape dynamic control over your sounds; E-mu's modules have always been good in this department, and Morpheus is no exception. The module provides 10 note-on and 10 real-time modulation paths, and allows you to use modulators to modulate other modulators. For instance, you can modulate morphing in real time using one of the Function Generators, and control the Function Generator depth (and therefore the morphing effect) from another modulator eg. assignable MIDI controller A.

The two Function Generators are eight-segment envelopes with level, time (0-4095 milliseconds), shape, conditional jump, conditional value and conditional destination segment values for each segment. An obvious application is to create a simple multi-stage looping envelope and assign it to modulate pitch – allowing you to trigger pitch sequences from a single note. You can also create sophisticated real-time morphing effects by modulating the morphing parameter from one of these Function Generators, or create an echo effect or a multi-stage volume envelope which jumps to segment eight on note release. The possibilities are many, and are well worth exploring if you want to get the most out of Morpheus.

Another feature worth experimenting with is Loop Offset. This allows you to set your own sample-loop start point and duration for each oscillator within a Preset; in this way you can create all manner of new source sounds out of the existing ones – useful enough in itself, but even more so when you combine these new sounds with Morpheus's filtering capabilities.

Onboard effects

FXA: Room, Warm Room, Small Rooms 1 & 2, Halls 1-3, Chambers 1 & 2, Plates 1 & 2, Early Reflections 1-4, Reverse Early Reflection, Rain, Shimmer, Stereo Flange, Phaser, Stereo Chorus, Delay, Cross Delay, Echo.
FXB: Fuzz, Fuzz Lite, Stereo Flange, Phaser, Stereo Chorus, Delay, Cross Delay, Ring Modulator.

Hard fax

Polyphony: 32 voices
Multitimbrality: 16-part
Sample ROM: 8Mb, 242 source sound locations (including multisound drum kits); linear 16-bit samples, 39kHz sample playback rate
Frequency response: 20Hz-18kHz
S/n ratio: 90dB
Patch memory: Internal: 128 RAM Presets, 128 ROM Presets, 128 RAM Hyperpresets; card: 128 Presets, 128 Hyperpresets
Preset architecture: fixed: one Primary and one Secondary oscillator, each with its own 14-pole morphing digital filter, AHDSR volume envelope, amplifier and stereo panner; freely assignable: one AHDSR auxiliary envelope, two LFOs and two 8-stage Function Generators
Hyperpreset architecture: up to 16 Zones, each of which can be assigned a Preset together with key range, velocity range, volume, pan and transposition settings; one free-running 8-stage Function Generator; portamento performance option
LCD: 2 x 16 characters, backlit
Connections: Main, Sub1 and Sub2 stereo audio paired outputs; MIDI In, Out and Thru sockets; stereo headphones socket; data card slot
Weight: 6lb 14oz
Dimensions: 1.75" (H) x 19" (W) x 8.5" (D)

Turning to the more familiar parameters, Morpheus lets you set the volume, pan position, key range, transpose amount, and coarse and fine tune amounts, and program Alt and Auxilliary AHDSR envelopes, LFOs 1 and 2, double + detune (off, 1-15), Xfade/Switch settings, portmento setings, solo mode on/off and priority, sound delay, sound start, sound reverse on/off, non-transpose on/off and loop enable on/off P all per oscillator. Other Preset parameters include pitchbend range, pressure amount, controller amounts, velocity curve, keyboard tuning (Equal, Just C, Vallotti, 19-tone, Gamelan and User) and mix select (Main, Sub1, Sub2, FXA and FXB).

With Morpheus, E-mu have also introduced Hyperpresets – essentially an extension of the Preset linking found on other E-mu modules. Up to 16 Presets can be combined in split/layer configurations, allowing you create some complex, or simply big and beefy, composite sounds. Bearing in mind that even single Presets can quickly eat into Morpheus's 32-voice polyphony when you're using both oscillators and some doubling/detuning, you're not likely to be able to use too many Hyperpresets at once – they're perhaps best used individually rather than in a multi-part sequenced context.

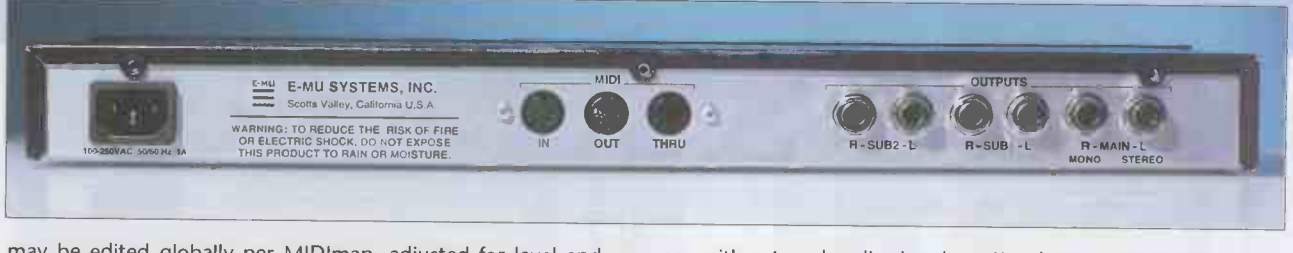
Like other E-mu modules, Morpheus can respond on up to 16 MIDI channels at once when set to Multi receive mode, with a single Preset or Hyperpreset assigned to each channel. You then edit a Preset/Hyperpreset 'within' whichever channel

Photos: James Cumpsty

is currently selected. MIDImaps, of which there are 16 (plus one stored in the battery backed RAM buffer), allow you to create 'snapshot' assignments of multiple Presets /Hyperpresets, together with volume, pan, mix, MIDI filtering, bank select and program-change map settings for each MIDI channel.

Effects assigned to the two effects processors, FXA and FXB, may be edited globally per MIDImap, adjusted for level and output routings (Main, Sub1, Sub2). You can also opt to route FXB into FXA, either splitting off the FXB signal as a percentage amount or routing it solely through A. FXA cannot, however, be routed through B, which means you can't, for instance, flange, phase or chorus a reverbed signal, which is a pity in my book.

The effects themselves are competent enough, but don't compete with the likes of Korg or Ensoniq for quality, variety or sheer adventurousness. E-mu haven't exactly gone overboard on effects editing either – there's only one reverb parameter, for instance – and there's no dynamic control over effects. It's worth bearing in mind that the Sub1 and Sub2 outputs can be used as effects send/returns or, alternatively, as inputs for routing other instruments via Morpheus's main stereo outs. But you can't route these sounds through the module's effects, nor through its synthesis architecture, as you can with external audio signals on Korg's Wavestation A/D.



Each channel within a MIDImap can be assigned to Main, Sub1, FXA or FXB, or can adopt the Mix asignment of the selected Preset/Hyperpreset. However, you can't set individual effect send levels. Limiting effects assignments to the global, MIDImap level keeps things simple, and is fine for multi-part sequencing, but if you actually want to play single Presets or Hyperpresets with specific effects, then the only way to do it is to call them up as MIDImaps, which limits you to 16 onboard effected sounds. ➤

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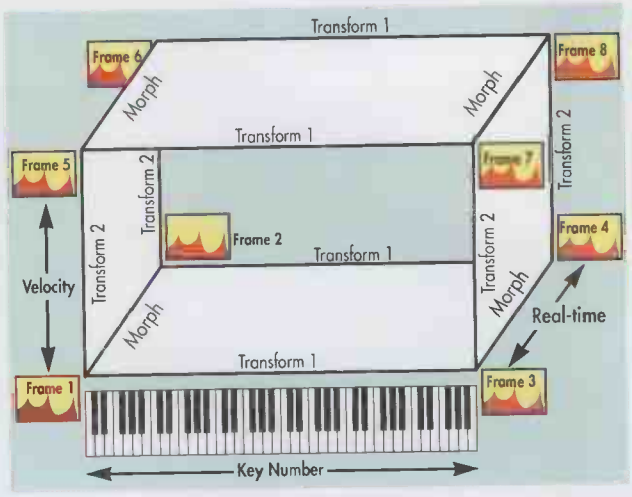

Perhaps learning a lesson from Korg's experience with the Wavestation, E-mu have ensured that sampled instrumental sounds are present and correct on Morpheus – including the inevitable acoustic grand, a versatile electric piano, some sparkling guitars, an effectively breathy flute and a healthy number and selection of drum and percussion sounds. You could, if you wished, put together a complete demo using just Morpheus.

But overall this is an instrument which is geared towards creative rather than recreative synthesis, and to my mind it's all the better for it. There are some wonderful fat synthbass sounds – Morpheus has a punchy, deep, well-rounded bottom end – together with a plentiful and varied collection of full, rich pad sounds, evocative atmospheres and vibrant leads.

Overall, Morpheus's sound has great presence and energy, and achieves an intriguing and effective combination of digital and analogue, clarity and warmth (though technologically it's a purely digital instrument). Although the module doesn't scream "14-pole morphing filters" from the rooftops, its unique angle in this department does, er, filter through many of the preset sounds.

I'm not sure that morphing is quite as radical in practice as I thought it was going to be (perhaps you'd need to be able to create your own filter frames for that), but equally there's clearly plenty more potential to be wrested from Morpheus through skilled programming. Hopefully, E-mu or a third party will bring out graphically-based editing software, because the module cries out for it; the filter cube concept is itself essentially graphical in nature.

Morpheus is the sort of module that many people will want to add into an existing setup, but it's also credible and appealing for anyone just starting out. I can see it finding a niche for itself in film and TV soundtrack work alongside the Wavestation (the two instruments are actually quite different in character, but have similar strengths), and also appealing to the dance/ambient/industrial fraternity.

Despite its original approach to filtering, Morpheus comes across as an evolutionary rather than a revolutionary instrument – but it's a very appealing evolution. ●

THE LAST WORD

Ease of use	Straightforward operationally, more demanding conceptually
Originality	Innovative filtering section within familiar synthesis architecture
Value for money	Fair
Star quality	A confident and versatile performer with some unique talents
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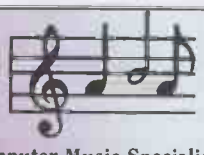

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REVIEW

dbx

120XP Boom Box

subharmonic synthesiser

Photo: James Cumpsty

Looking for something to give you a lift at the bottom end? A boom box could be the answer. Bob Dormon asks how low can you go?

We've all seen those belly-dancing Coke cans gyrating in response to sound, but have you ever seen your speakers pull the same trick? Well now you can with the new dbx 120XP Subharmonic Synthesiser. The 'P' indicates that it's a professional unit – the 120X having been around for some time now – designed to produce that low, low bass that gets complaints from residents five miles away from the club it's being used in.

In fact, dbx have been making subharmonic synthesisers – boom boxes to you and me – since the late '70s, identifying the need/trend for something throbbing around the bottom end. Their use isn't confined to just DJs and clubs: in recent years the boom box has begun to infiltrate film theatres and even recording studios, making low-end rumble an acceptable component of sound, rather than a symptom of a sick turntable.

With good neighbourly relations foremost in my thoughts, I gingerly unpacked this 1U black magic box, only partially reassured by the accompanying blurb that my speakers were not about to meet their maker. Not unless I was deliberately cruel anyway.

Turning up the Subharmonics control varies the intensity of the bass synthesis, and this is used together with the two Synthesised Frequency controls which alter the subharmonic mix within their respective ranges of 24Hz-36Hz and 36Hz-56Hz. Above each of these two knobs are three LEDs (green, yellow and red) which indicate the amount of new (subharmonic) signal being generated for that range.

It's all dependent on your source material, of course; if there's no bass, there's no pretty lights – and therefore no subharmonic activity. But you'd be surprised by what signals have a low enough content to bring the 120XP to life. Connecting up my video recorder, I discovered that not only did the predictable sonic booms and gut-wrenching growls in a movie like *Die Hard* elicit a response, but that even the effect on the human voice was quite marked (in this case the dulcet tones of Ian 'Lovejoy' McShane).

From a musical perspective, reggae has much to offer at the bass end, and as you might imagine produced lots of pretty lights on the front panel and a deep, dramatic boom from the speakers. In fact, the effect was a little too dramatic and I found a bit of tweaking of the two synthesised frequency pots was necessary so that instead of the exaggerated boom, you get punch with depth.

Of the remaining controls – LF Boost works rather like the 'loudness' switch on many domestic hi-fi amps. It's quite independent of the others, so you really can tailor the whole of this narrow bass/sub-bass band of frequencies to suit your needs. Sub-Woofer controls a separate output for feeding a (you guessed it...) sub-woofer system and switches at the rear allow you to select crossover frequencies of 80Hz or 120Hz. The main stereo output can also be switched – for full range or HF only.

The great thing about this unit is that the audio spectrum above the working range remains completely uncoloured by the processing. There's no muddying of the low-mid range: it's bass, the whole bass and nothing but the bass you're dealing with. This, apparently, is thanks to the 'Waveform Modelling' intelligent processing system employed by the dbx 120XP to produce bass notes below those in your source material.

Not having a sub-bass set-up, I fed the separate sub-woofer output into a bass amp and found this generally worked well. Having the opportunity to tap off this signal into equipment capable of operating at these frequencies is definitely the right approach as far as I'm concerned – it allows you to take full advantage of the audio range of the device.

Comparing the dry/treated signals by means of the Bypass switch reveals sounds that were once faint background whispers suddenly brought to fore, as if at last recovering from their shyness.

I was also impressed by the quietness of the 120XP in operation, and the degree of control it offers so that just the right amount of punch – or roundness – may be added without unduly affecting the overall mix.

I have to say, I haven't been a great fan of the mixing on a lot of dance music. On most desks the EQ doesn't deliver in the range that really cuts it. The dbx 120XP is, I'd say, the missing link between bass and bottom end, and I'm sure they'll all live very happily together.

THE LAST WORD

Ease of use	Simple enough
Originality	Boom boxes are still a relatively recent development
Value for money	Not bad – given that it is likely to see regular use
Star quality	An interesting departure in audio technology
Price	£304.33 inc. VAT
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REVIEW

Roland P-55

piano module

A piano for all seasons. Ian Waugh tries Pythagorean Temperament and ends up flat Baroque...

There are some things you can never have enough of. Polyphony is one of them. This is never more true than when writing music with a piano part. Play a left hand chord, an arpeggio or two, stomp on the sustain pedal and there goes 20 notes straight away.

Or perhaps you want a bigger range of piano sounds than your current equipment offers. Some synths have very distinctive pianos – the M1 is a firm favourite with house musicians – and variety, as they say, is the spice of life. If you find yourself in either of these situations, it may well be worth considering a separate piano module. Such as the Roland P-55.

There have been piano modules before – and there will no doubt be piano modules again – but the P-55 has several particularly interesting features which definitely stand it out from the crowd. First of all, it's a member of the Sound Canvas family – it says so on the front panel. When it receives a GM System On or GS Reset MIDI message it goes into GM mode. No, it doesn't have the usual range of GM sounds but it does respond to the GM Program and Bank Change messages which select GM piano sounds and GS variation tone piano sounds. We'll look at its use with GM modules in a minute.

Secondly, it responds to Damper (Control 64), Sostenuto (Control 66) and Soft (Control 67) MIDI messages, and if you're nimble on your feet you can practise half-pedalling techniques. These help make it more like a real piano and are features which pianists will appreciate.

It also has several other 'real piano' attributes such as Stretch Tuning. In contrast with true equal temperament, the higher notes on an acoustic piano are normally tuned slightly higher in pitch and the lower notes tuned slightly lower. The P-55 has three Stretch Tuning settings to help simulate this.

Finally, to help set the instrument up to suit your style of playing and the keyboard you are using, there are nine velocity curves. These determine how the volume and timbre respond to the velocity information. If you're more a synth player than a piano player, you may want to select a curve which makes the notes in the weaker lower range of the keyboard louder using less velocity. Looking just at these aspects of the P-55, you can see that Roland has attempted to incorporate as many performance features into the P-55 as possible. And there's more to come. But let's look at the basic layout.

It's a half rack unit and can be rack mounted, along with another half-width module if you wish, using the optional RAD-50 Rack Mount Adaptor. The front panel belies its Sound Canvas heritage – a nice orange 3-digit LED and orange indicator lights.

There are eight parameter indicators – each containing two sets of parameters, the operative one depending on the parameter mode (stick with it!) and eight pairs of up/down parameter buttons for altering them. There's a volume control and a headphone socket on the front, and stereo audio Ins and Outs on the back along with MIDI In, Out and Thru sockets. Power is via a mains adaptor.

So let's try a few sounds. There are 32 of them, based on 4Mb of piano waveforms including some from the SR-JV-80 series and the latest HP models. The range covers acoustic and electric pianos including the RD-1000 and the harpsichord from the C-50. There are also a couple of Vibraphones, Celesta and Clavi.

I'm tempted to say that there is something here for everyone but that's to ignore the utter individuality of *MT* readers (*gush – MT reader*). However, you can tweak the sounds in several ways to accommodate your own pianistic perversities. For example, there's the Brilliance control. Give it a boost for an up-front rock 'n' roll piano. Turn it down for a moody *sotto voice* classical piano effect.

The P-55 also has eight reverb and nine chorus effects with adjustable depth. They include room, hall and plate reverb, delay, panning delay, four types of chorus, flanger and short delay feedback. They do make a considerable difference to the sound.

You can also add a sub-instrument to the main instrument – which is another way of saying you can play two sounds at once. And it's possible to give them different volume levels and detune them – more scope for customisation.

Pan position of the sounds can also be adjusted and there's a fascinating random pan setting which causes the sound to move randomly back and forth with each note played.

For the experimenter, there are six alternative tunings – Equal, Just, Mean Tone, Werkmeister, Kirnberger and

Pianos on the table

The P-55 has two instrument tables. The first gives you access to all 32 sounds using Program Change numbers.

The second uses Program Numbers 1-9 to select GM equivalent piano sounds and Number 12 to select a vibraphone. It also responds to Bank Change messages to select variation tones used in Roland's GS system:

Program Number	Control Number	Name
1	0	Grand Piano 1
	8	Acoustic Piano 1
	16	Grand Piano 2
2	0	Acoustic Piano 2
	8	Acoustic Piano 3
3	0	SA Piano 1
4	0	Honky Tonk 1
5	0	Rhodes
	8	Pop Rhodes
	24	E Grand 1
6	0	E Piano 1
	8	E Piano 3
7	0	Harpsichord 1
	8	Harpsichord 2
8	0	Clavi
9	0	Celesta
12	0	Vibraphone 1

Photos: James Cumpsty

Pythagorean Temperaments. It's nice to see these on an instrument even if they tend not to get used very often. Anyone out there use alternative tunings? Drop us a line and tell us about it. There's also a Baroque Pitch setting which sets A4 to 415Hz rather than the 440Hz we use today. Ideal for evenings with your baroque ensemble.

If you do much tweaking you will, naturally, want to hang onto your new sounds – and on the P-55 you can, by saving them into the 16 User Patches. These can be selected via MIDI, too.

So how would the P-55 fit into your setup? It's 3-part multitimbral – just in case you compose piano trios – and 28-voice polyphonic. As ever, the definition of voice causes confusion. Most reasonable people would equate voice with note, but more than one musical instrument company, including Roland, takes it to be a single sound element.

The pianos, therefore, use between one and four voices which could cut the polyphony down to seven notes! Add a sub-instrument and you're well on the way to three-note chords – and you'd better lay off the sustain pedal, too.

If you really want to use the multi-voice sounds, a stacking mode lets you connect up to eight P-55s for a maximum polyphony of 224 notes. Or 28 notes if you pull out all the artillery! In practise, you will probably use 2- or 3-voice sounds, the 1-voicers being a touch on the thin side, so you'll be looking at an average polyphony of 10 to 14 notes.

The P-55 could well appeal to people with an existing GM module. Many GM units, however, are unable to mute individual parts and so respond to information on all 16 MIDI channels. In such cases, the P-55 and the GM unit would play the piano part together – not an ideal situation. Some GM units, however, such as the Roland Sound Canvas Mk II can mute parts, in which case everything would be hunky dory. Check your GM unit's manual carefully, because some allow you to mute parts using SysEx messages. Speaking of which, you can also tweak the P-55's FX parameters via SysEx, making it an excellent companion for one of the high-end computer sequencers such as Cubase or Notator.

The manual looks excellent and contains lots of photographs of the various parts of the box along with drawings of hands and fingers pushing buttons. It contains all the info you need but it's a very dry read and not, perhaps, as accessible as it could be. It's a shame really, coming as it does after a press conference at Heathrow when both Roland's UK MD and the Japanese Corporation President admitted that manuals could be better. I'm still amazed that after all these years, foreign companies (and I'm not singling Roland out here by any means) still refuse to run their manuals past a native English musician and writer who knows his job.

The only other slight gripe – more an observation, really – is that some of the buttons have dual functions depending on the mode you're in. The alternative would be more buttons or a menu system, neither of which would appear practical on a unit this size. Although if it had an LCD like the Sound Canvas...

The P-55 is a rather neat and desirable unit, well suited to a variety of situations. Given its wide range of features, I suspect it will appeal to a wide range of users and at the price it's going to be a tough act to beat.

THE LAST WORD

Ease of use	It's plug in and go but you must read the manual for the tweaks
Originality	An original collection, if not an original instrument
Value for money	Excellent range of features at the price
Star quality	Likely to be much in demand
Price	£469. Roland is also bundling the P-55 with the A-30 keyboard (normally £535) for £799
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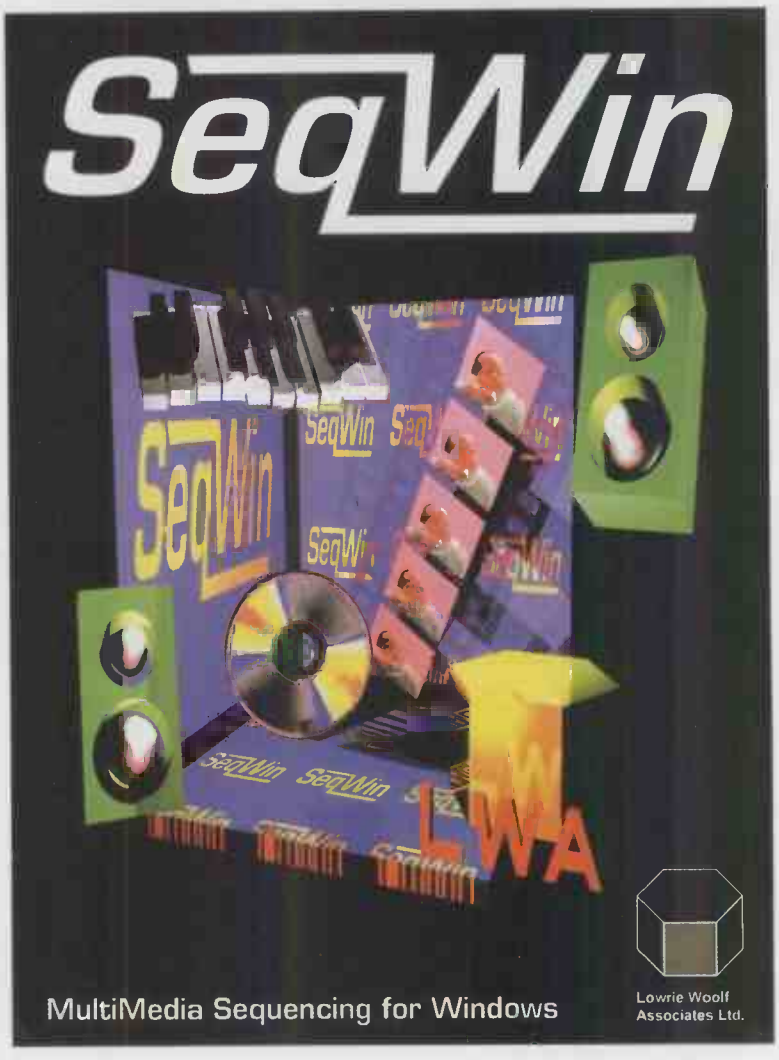
REVIEW

Lowrie Woolf Associates Ltd

SeqWin v2/MultiMedia

for PC Windows 3.1



Affordable multimedia – now. Ian Waugh sings for you *covered* in SeqWin's...

After reading so much about multimedia over the past few months – or past few years if you're real hip to the groove – you may be wondering where it's all going to end. On the other hand, you may be wondering when it's all going to start. When are we going to see affordable tools which let the average user put together successful music, sound and graphics production?

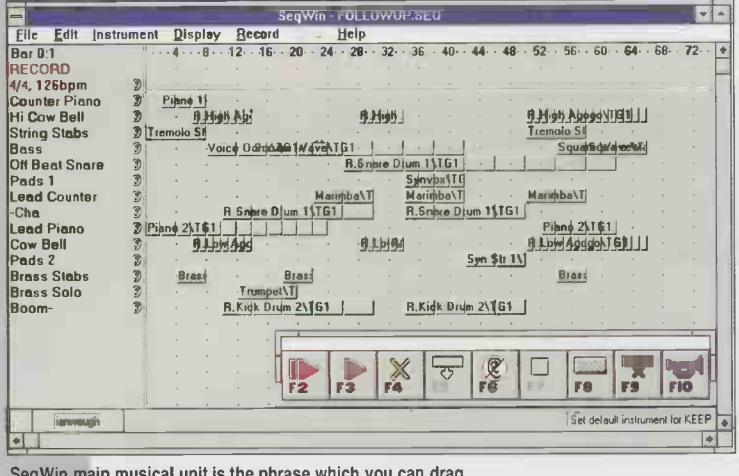
SeqWin v2/MultiMedia could be the answer. According to the designers it's intended for first-time PC users wanting to get started in MIDI, and ready to be hooked into multimedia.

Basic operation is quite simple but there are a wealth of options and facilities lurking beneath the interface. SeqWin's main musical unit is the 'phrase'. These appear on the main edit screen as rectangular bars – a system not unlike Cubase's Arrange page. Interestingly, the manufacturers swear they had the idea first. But whatever, it will come as welcome news to anyone already sold on this method of working.

The primary difference is that phrases are not limited to MIDI data. They can also hold instructions to play digital audio wave samples (sounds in Window's .WAV format), video files (in Window's .AVI format), a CD track (assuming you have a CD-ROM connected), and even a MIDI file directly from disk.

I'd normally gloss over basic sequencer functions in a review such as this in order to concentrate on the more interesting individual aspects of the program, but SeqWin's sequencer functions are in themselves rather interesting.

For example, there is no record button. As soon as you press Play, the program goes into record mode. There's no danger of recording over an existing phrase as the new recording appears in its own track at the top of the screen. After recording, you decide whether to keep it or not.



SeqWin main musical unit is the phrase which you can drag around the screen to create a song.

You can cut, copy, paste, clone and do all the usual manipulatory functions with phrases in order to construct your song. Most of these functions are accomplished with the left and right mouse buttons in combination with the position of the pointer in relation to the phrase. The cursor changes shape to let you know what options are available.

Editing is via a grid page or a very simple notation display – just enough to show you the pitch and position of the notes. In addition, there's a whole range of tools housed in three sets of windows – Toolbox, Switch Box and Palette – with a total of 45 icons covering most of the editing functions you're likely to need.

One of SeqWin's most interesting features is the way it handles sounds. The idea is to let you select sounds by name rather than by Program Change number. Certain other sequencers do this to an extent, but SeqWin takes it considerably further.

When installing SeqWin, you can load a number of instrument maps; in fact, you must load at least one map otherwise the program won't let you continue the installation procedure. 30 maps are supplied including seven drum maps,

What you need

SeqWin requires an IBM PC compatible running Windows 3.1 or later, 2Mb or RAM and a VGA (640 x 480) display or better. The documentation doesn't state a minimum PC spec such as a 386 or 486. The review software was tested on a fairly high-end 486 running at 66MHz – although any multimedia PC system which doesn't fall over when playing MIDI, audio or video should do the job.

Anyone considering the purchase of a PC for music or multimedia shouldn't really be looking at anything less than a 486, running at 33MHz or more. Multimedia is very processor intensive, and it has come to light recently that some sequencers display timing problems when running on 386 machines – and even the slower 486s. A 486 is not now much more expensive than a 386, typically around £150.

If you want to play digital audio files you'll also need a suitable sound card. To play video clips you will need Video for Windows which is supplied with most video cards although a Trial version with playback only is freely available. Obviously, you'll also need a CD-ROM to play CD audio files.

maps for the Ad Lib and SoundBlaster cards, General MIDI and Roland's GS devices and Yamaha's PSS range of portable keyboards.

An instrument map is basically a list of instrument names and their associated Program Change numbers. However, they also contain the MIDI channels to which they are assigned and the PC Port to which they are connected. You can assign a default sound to a recording, allowing you to bang away at a piano part, for example. You can also assign a sound to a phrase after recording by scrolling through the list in your instrument map.

The sounds are arranged alphabetically, which is useful. You can also view the names by description via a list of similar instruments such as pianos or strings. If you load a file which contains different instruments to those in the current map, SeqWin will find replacements based on the instrument descriptions. Again, this is very useful.

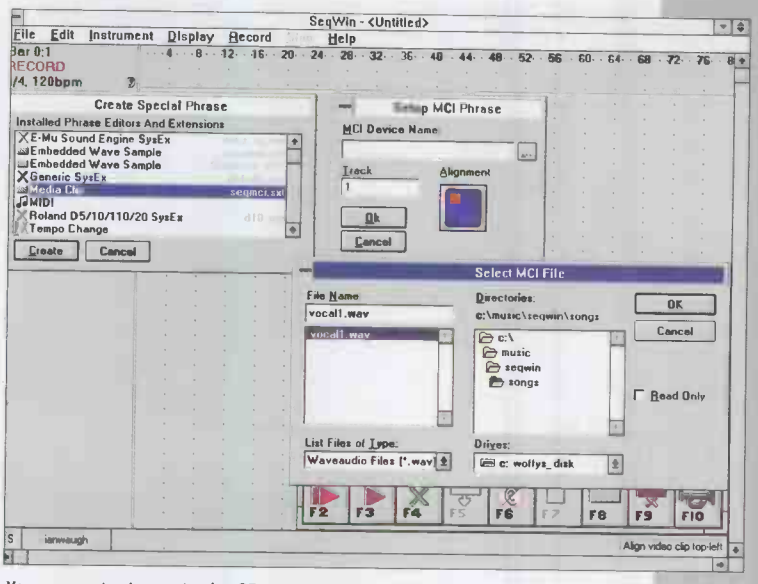
It's also possible to add and amend instruments if your setup changes. This involves entering a name, a description (an instrument group such as Piano, Woodwind, Ethnic and so on) and the instrument definition – ie. the MIDI Driver, the MIDI channels it can use, transpose and velocity values and so on.This is a very powerful feature indeed and far more sophisticated than merely linking program names with program numbers. That said, it may well seem rather daunting to a beginner trying to set it up.

OK, let's get to the multimedia part of the program. SeqWin lets you create phrases containing multimedia 'triggers' using the Create Special Phrase option. These include adding an embedded wave sample, media clip (from an audio CD or video) or a tempo change – the latter placed at the top of the arrangement.

To use a multimedia file you simply use the selector to browse through your disc until you find the file you want. There's no need to enter any tortuous MCI commands. You can copy, move and clone these phrases just like any other phrase and integrate them with your MIDI sequence. Wave samples may be recorded in real time; with a good quality sound card you could, for example record a vocal over a MIDI backing.

There are a range of simple editing facilities for .WAV files such as filtering and adding echo, but it's not possible to cut and paste the actual sample itself.

Of course, when combining MIDI with video and audio in this way, you have to remember the limitations of your PC system. High quality samples require lots of memory and if a video file contains audio data there will be a conflict between it and the sample file. Also, these phrases are timed in minutes and seconds unlike MIDI data which runs in bars and beats. You need to be aware of this if you think you may want to alter the tempo of a song at a later date.



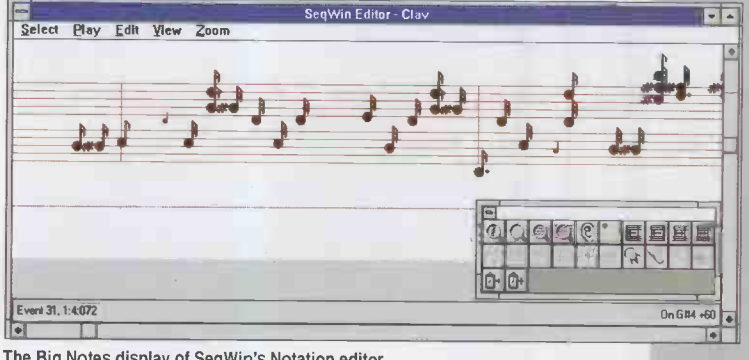
You can create phrases to play CDs and trigger digital audio and video clips, too.

The grid editor's three tool boxes against a backdrop of a lead guitar part with squadrillions of Modulation data.

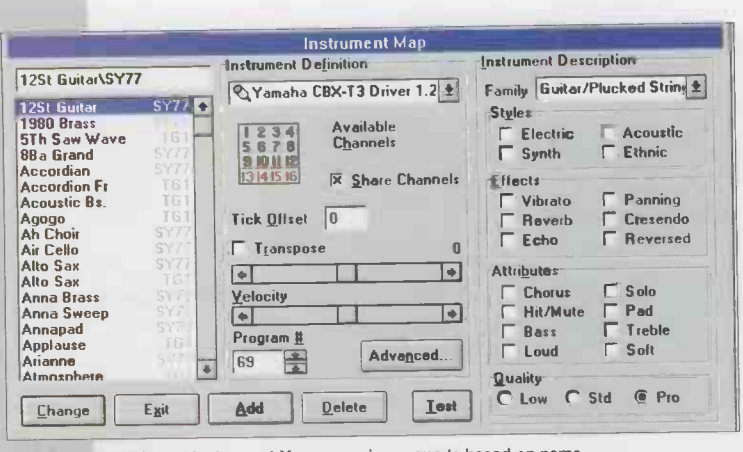
SeqWin has a host of interesting extra functions designed to make life easy. For example, it saves your work automatically – allowing you to specify how often this takes place, or whether the function is switched off altogether. Also, after quitting and booting up again, it will offer you the last unsaved file you were working on.

The program can be extended via Phrase Extension modules so you can sequence different types of information. The main ones such as MIDI, digital audio, CD playback and video are all supplied, of course, but it's nice to know the system may be further expanded.

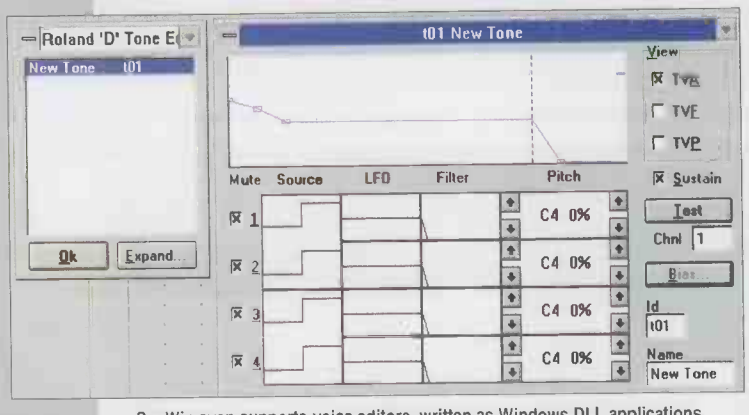
SeqWin also supports simple System Exclusive editors. Two are supplied with the program – for the E-mu Sound Engine and the Roland D series. These are actually Windows DLLs ➤



The Big Notes display of SeqWin's Notation editor.



SeqWin's sophisticated Instrument Map recognises sounds based on name, definition and description.



SeqWin even supports voice editors, written as Windows DLL applications.

➤ (small independent programs) and the enthusiastic Windows programmer with a knowledge of C can write his/her own. Details are supplied in the Help file.

A whole menu is devoted to changing the colours and fonts of SeqWin's various windows and displays. Again, it's nice to be able to customise, but I do think this function would be better hidden away behind a single menu option.

The manual is very informative but a little techy in places and has no index. It could be arranged a little better, too. Raw beginners will have to pore through it slowly if they are to avail themselves of the info and advice. But pore through it they must: despite the on-screen help, this is a program that takes a little getting used to.

And for all its good, nay, excellent points, there a few aspects which could be improved – such as the addition of a count-in or pre-roll facility. Also, although you can alter the size of the grid on the main screen, using a setting of less than four bars causes the bar numbers to squash up. You can't actually zoom in on the phrases, either, which is a nuisance, especially as the size of one and two-bar phrases makes them rather awkward to arrange.

SeqWin has a .WAV file editor with filters and the ability to add echo.

Although there is a Setup file which contains lots of default settings, there are several parameters it doesn't save such as the settings for converting MIDI files. SeqWin has a myriad of options for loading and saving MIDI files and while these will be useful to some users, the majority simply want to load or save the things. A facility to call up these options in an advanced setup window would help avoid possible confusion.

Also, in spite of the range of options, the manual doesn't tell you which to select to save in Format 0 or 1. Neither does SeqWin support MIDI Song Position Pointers or MIDI Time Code. This won't be much of a loss to most users, but MTC is sometimes used to sync internal programs running concurrently within Windows.

OK, so I'm whinging a bit. But these are all thoughts which came to mind while using the program. Although the designers make no claims for SeqWin being a professional sequencer, it could certainly be made more 'pro' by a little extra attention being paid to the interface. This would make it easier for beginners, too.

SeqWin is quite a sophisticated piece of software and requires a corresponding degree of knowledge and ability from the user – not only to set it up but also to get the most out of it.

It is, however, a multimedia sequencer in every sense of the word and that will undoubtedly be its main appeal. Anyone involved with presentation work would certainly do well to check it out. For the aspiring muso armed with a video card, there seems no reason why they could not combine sound and vision to produce an acceptable music video – although I doubt if it's going to worry Steven Spielberg.

SeqWin is an excellent product at the price. It's great fun and it brings together sound and vision in a way which would have been beyond our means only a couple of years ago. ●

SeqWin – the sequel

SeqWin v2/MultiMedia is based on the first version of SeqWin which has been around for a year or so, and the latest version has a host of new facilities. If you don't want the multimedia hooks you can buy the straight sequencing package and save a few quid. However, SeqWin v2/MultiMedia also comes with a piece of software called MIDI Master Plus which lets you use multiple Windows applications at the same time with both MIDI playback and record. It also lets you route messages between programs so you could, for example, channel the output from an accompaniment generator directly to your sequencer.

Oddly, there is no direct reference to MIDI Master Plus in the manual at all. You have to look at the installation Help file and open Windows' Drivers panel, load the driver and explore its Help file. I must confess I didn't get this working quite as easily or as well as I had hoped. Some MIDI programs didn't seem to like it, but then PCs are a bugger to configure anyway.

For the sake of saving a few quid, there seems little point in *not* going for the Multimedia version.

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8-bit COMPARISON

	MONO		STEREO	
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No Of Sound Standards	2	2	3	5
AdLib	●	●	●	●
Sound Blaster Version 2	●	●	●	●
Sound Blaster Pro II		●	●	●
Covox Speech Thing			●	●
Disney Sound Source			●	●
FM Synthesiser - OPL2	●	●		
FM Synthesiser - OPL3			●	●
Manual Volume Control	●	●	●	●
Digital Software Volume Control			8 STEPS	16 STEPS
Digital Bass & Treble Control			●	●
Sampling Rate, Recording Up To:	23KHz	15KHz	44.1KHz	44.1KHz
Sampling Rate, Playback Up To:	44.1KHz	44.1KHz	44.1KHz	44.1KHz
Game Port, With MIDI Option	●	●	●	●
Dynamic Filtering For Better Sound	●			●
CD Audio In	●			●
Can Use Microphone And CD During Digital Playback	●		●	●
SMT Board For Better Reliability	●		●	●
Free Speakers	●			●
CD-ROM Interface (AT-Bus)				
Panasonic Interface				●
Mitsumi Interface				●
Sony Interface				OPTION
CD-ROM Interface (SCSI)				OPTION
Microphone AGC Amplifier	●		●	●
Stereo Microphone Input				●
Software Selectable IRQ, DMA & Address Setting Configuration Retained When Power Off				●
Mixer Support From More Than One Source During Recording	●			●
Built-In Amplifier	●	●	●	●
Stereo Lines In And Out			●	●

16-bit COMPARISON

	STEREO				
	AZTECH SOUND GALAXY NX PRO 16	AZTECH SOUND GALAXY BASIC 16	CREATIVE SOUND BLASTER 16 ASP	AZTECH BUSINESS AUDIO BOARD	MICROSOFT MSOFT WINDOWS SOUND SYSTEM
No Of Sound Standards	6	6	2	2	1
AdLib	●	●	●	●	
Sound Blaster Version 2	●	●	●		
Sound Blaster Pro II	●	●			
Microsoft Windows Sound System	●	●		●	●
Covox Speech Thing	●	●			
Disney Sound Source	●	●			
FM Synthesiser - OPL3	●	●	●	●	●
Digital Software Volume Control	●	●	●	●	●
Digital Bass & Treble Control	●	●	●	●	●
CD Quality Sampling Rate, Record & Playback Up To:	44.1KHz	44.1KHz	44.1KHz	44.1KHz	44.1KHz
Game Port, With MIDI Option	●	●	●		
Dynamic Filtering For Better Sound	●	●	●	●	●
CD Audio In	●	●	●	●	
Can Use Microphone And CD During Digital Playback	●	●	●	●	●
CD-ROM Interface (AT-Bus)					
Panasonic Interface	●	●	●	●	
Mitsumi Interface	●	●		●	
Sony Interface	OPTION	OPTION		OPTION	
CD-ROM Interface (SCSI)	OPTION			OPTION	
Microphone AGC Amplifier	●	●		●	●
Stereo Microphone Input	●	●		●	●
Software Selectable IRQ, DMA & Address Setting Configuration Retained When Power Off	●	●			
Mixer Support From More Than One Source During Recording	●	●	●	●	●
Option For Upgrade To 16-bit Wave Table Synthesis	●	●	●		
Stereo Lines In And Out	●	●	●	●	●

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I've lost count of the number of times I've been stuck at traffic lights when a large throaty Ford XR pulls up next to me with three 17-year-old, gelled-up lads leering out and a solid 120bpm vibrating through the chassis like a hammer drill. As they speed off ahead the last thing I see before being engulfed in a cloud of blue smoke is the word 'Goodmans' on the rear parcel-shelf speakers.

Far from being 'just' in-car speaker manufacturers, Goodmans have been involved in the manufacture of a range of audio products for nearly 70 years now, and though the company hasn't held onto much of its former reputation for producing rather conservative, high-fidelity separates, they do still manufacture hi-fi loudspeakers and those tiny speakers for connecting up to your walkman.

Their new 'active' speaker range is a progression of the latter, aimed at the CD generation of personal stereo owners, but also perfectly suitable for connecting up to keyboards and synthesisers – and the latest generation of multimedia computer add-ons.

The Active 75 speakers reviewed here sit at the top of a range of three models, and feature built-in amplification and volume, bass, treble and power controls – situated on just one of the speakers. Connecting them is a simple matter of plugging one speaker into the mains and then connecting the speakers together. The output of your keyboard – or whatever – is taken via the headphone socket and connected to one speaker using the lead supplied. You'll need an additional adaptor for this if your headphone socket is the larger 1/4" type.

I tried the speakers with an assortment synthesisers and keyboards with built-in speakers and found that the 75s out-performed each of them by some margin. Being able to adjust the tonal characteristics of the sound – via the bass and treble controls – is obviously an advantage here, and I found the tonal range sufficiently wide to produce some pretty interesting results (not least of which was how much noise the average synth generates!).

The reproduction on most sounds was crystal clear and, though clearly *tailored* to avoid troublesome frequencies at the bottom end, surprisingly full and rich. That said, some of the denser sub-bass presets did cause the speakers to groan and grumble under the weight of the sound, but this is to be expected and can be corrected using the bass control.

If the speakers are used as replacements for the built-in keyboard speakers they will, of course, offer improved stereo separation – and perhaps bring a little extra definition to the sound – particularly where this includes percussive instruments. The rather vague quoted music power of 80 watts is in practice rather more than you'll get, but the speakers are certainly loud enough for home use and probably pack just about enough punch for a gig in your local (if it's a small one). But really, this isn't the purpose for which they are are designed. These are *convenience* speakers intended for practising and pre-production work (where a full mixing and monitoring system would be inappropriate) and with the new all-in-one computer music systems such as Yamaha's Hello! Music! (*MT* review, November '93). And what the hell... you can even plug them into your Walkman if you like!

Goodmans have taken an original idea, added a few quality ingredients and intentionally or not, produced an attractive and flexible monitoring system which most musicians should find of use. *Andrew Jones*

Price: £64.99 inc VAT

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Dance/ Industrial II

sample CD

To many people, the words 'industrial music' conjure up images of leather-clad, chainsaw-wielding, anvil-bashing serial killers strutting around mountains of samplers, screaming distorted lyrics to a bunch of wacked-out Euro kids in a disused warehouse in Belgium. Others, perhaps acquainted with East West's acclaimed Dance /Industrial sample CD released last year, may hold a rather different view.

True, there were a variety of sounds which could only have been produced using factory floor machinery, but for the most part, the CD boasted an impressive collection of thrusting, dynamic rhythmic loops which illustrated only too well how effective – and useful – these ambient, industrial sounds can be when programmed sympathetically.

The sequel, Dance/Industrial II just released by Time + Space, picks up where the first CD left off, but broadens its appeal to include an even greater variety of loops and effects. A double-CD package, there are 154 loops in all, spread across both disks and listed with their BPM figures in the accompanying booklet.

The first CD contains the majority of harder-edged loops, suited to the more uncompromising styles of industrial dance, with droning machines and throbbing atmospheres providing the menace, and enormous basses and sparkling snares maintaining the relentless beat. Chaotic choice cuts include the techy Number 9 (no names here, just numbers) with its Deutscher beat and walls of sound entering loop by nasty loop. Number 29 also stands out with its backdrop of screaming crowds and crashing rhythmic sequence.

Many of the rhythmic structures are fairly recognisable, but have been strengthened and padded out with the addition of dynamic samples, such as booming basses, and a variety of other sounds – the precise origin of which one can only speculate on.

Also included on the first CD but more prevalent on the second, are loops with that distinctive American flavour one immediately associates with rap and hip hop. Whether or not you use them in this context is, of course, up to you; with the adoption of the popular loop and partial method where the rhythm loops are followed by the ingredient samples, it's possible to produce your own loops using the same sounds or the same loops minus any sounds you don't like. This brings a far greater level of flexibility to the whole process and allows you to customise breaks to preserve a degree of individuality. But that's not all: a set of MIDI file rhythm patterns are also included with the package, so it's even easier to 'tailor' a pattern to suit a particular track.

Of course, the bottom line with any sample CD is how inspirational it is. All I can say is after half an hour with this CD, I found my head brimming with ideas and I was even considering changing the drum tracks on a couple of songs I've been working on in favour of two included here. Ideal for metal bashers, technofiends, rappers and anyone in need of a bit of attitude. And at a touch under £60 for two CDs and the MIDI file disk, great value too. *Andrew Jones*

Price: £59.95

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BRIDGE RECORDING COMPANY

Charlie Morgan's Master Drums

sample CD

Question: what have all this lot got in common? Kate Bush, Tina Turner, Elton John, George Michael, Beverly Craven... and no, I'm not referring to the fact that their all rampantly rich and filthily famous. The answer is that a certain sticksman by the name of Charlie Morgan has played drums for all of them.

In the rough, tough world of session drumming our Charlie is tougher than most – so tough, in fact, that Elton recently hauled him off around the world on tour. Before he boarded the plane for megastardom, however, Charlie popped into London's Townhouse Studios to record this Master Drums sample CD.

The result is over 100 samples of carefully chosen, tightly played and smartly recorded drum loops, along with individual hits and a click-track intro for each sample.

Though Charlie has played on a wide range of pop and rock records, the grooves on offer here are, perhaps surprisingly, hip. Many of them would lend themselves to the kind of rap, hip hop or house tracks which normally rely on loops sampled off vinyl. And that, indeed, was Charlie's intention.

Aside from the playing, which is uniformly tight without ever becoming 'metronomic', the most impressive thing about the disc is the care with which it's presented. Every pattern contains four bars of the groove, stop/start sections and a couple of neat fills, and each loop is repeated at different tempi so that no matter what kind of track you're working on, you should find something that more or less fits the bill, time-wise.

There are no cymbal crashes to decay, and then abruptly cut off at the loop point; if you want to add cymbals, there are individual samples of ride and hi-hat loops elsewhere on the disc. I did find myself becoming a little weary at the constant use of the two drum kits (Premier Soundwave and XPK) throughout the CD, though of course this occurs only when listening to the CD in its entirety – which wouldn't be the case for listeners to individual loops selected for your music.

The recording quality is fine – in terms of noise and usability. Though there is no obvious acoustic ambience – the samples were recorded completely dry – the character of the drums comes shining through and provides an object lesson in drum miking. Charlie's playing is an education, too – particularly for non-drummers. If you've been relying on machine-programmed drum tracks up to now, you really owe it to yourself to find out what a real drummer can do. If you only use this disc as a means of learning more about what kicks that favourite groove along and apply this to your own programming, it'll be worth it.

In addition to providing the foundation for tracks, these loops could be twisted and turned every which way by anyone with a passion for sample editing. Alternatively, gate out a particular sound

and use it to trigger, say, a bassline or other percussion sample. Above all, get Charlie Morgan to inject a little of his impeccable feel into your tracks – without having to be rich, famous, or even particularly clever. *Colin Lemmon*

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dare!

Keep those tapes coming to Dare!, MT, Alexander House, Forehill, Ely, Cambs CB7 4AF.

OK, which bastard stole the first tape? I was looking forward to playing Teknik's '2000' – a stately slab of techno flourishes and boxy beats – but just before the Forum convened on 27th November at the London Music Show somebody swiped it. Our apologies therefore go to Jonathan Russell, the brains behind Teknik, who accepted his misfortune with a philosophical shrug and the inevitable acknowledgement that he hadn't brought a spare copy along. Still, I'm certain we haven't heard the last from Jonathan.

Other than that, our Saturday panel – comprising producer Ian Catt, Meat Beat Manifesto's Jack Dangers and music journalist Andrew Jones (who reviews demos every month in *Home & Studio Recording* so boy, does he know what it's like) – had a good time and voted 'Believe In' by Mesh as worthy of the free QR10 generously donated by Yamaha. One of two QR10s, in fact, because another one went on Sunday to Woob for the ambient epic 'Up The Garden Path' – clearly not somewhere you could lead the panel as it included ambient maestro Mixmaster Morris himself, along with Colin Newman, founder member of new wave legends Wire and now running his own label (see page 29), and a repeat of Andrew Jones.

My sincerest thanks to all the panellists for their invaluable insights, and to the artists whose well-above-average efforts ensured that, as usual, there was much to admire, inspire and discuss. ●

Saturday 27th November

Bass Odyssey

'E-Space'

Ensoniq ESQ1; Atari 1040ST; Steinberg Pro 24; Akai S950, S1000 (4Mb); Fostex 2016 line mixer; Alesis Midiverb III; Aiwa XD-S260 DAT, NSX-DS hi-fi.

To prove the point that, as far as *MT* is concerned, demos do not have to come laden with hooks, riffs or even melodies, 'E-Space' grooves along quite happily for a good six or seven minutes without any of them – and you certainly wouldn't get away with that on *Juke Box Jury*. Jack out of Meat Beat Manifesto was especially interested in this track, combining as it does layered drum loops and synth sounds with a strong dub influence. But what was missing was the kind of tumult of found sounds which is a Meat Beat trademark; in other words, the rhythms were too interesting to be pure trance, yet not involving enough. Andrew Jones particularly liked it, though, feeling that it built and sustained a mood throughout despite minimal components. Like I say, who needs hooks?

Contact: Jamie Ash Meakes, 081 428 0863 (Harrow)

Jack Dangers, plus beard

Teknik

'2000'

Akai S1000 (10Mb); Roland U220, R8-M, Alpha Juno 2, Juno 106, SH101, TB303; Yamaha YS100; Atari Mega ST (2.5Mb); Cubase v3.0; Studiomaster Sessionmix Gold 16:2 mixer; Boss SE50 multi-FX; Alesis Midiverb III, Microverb III; BBE Sonic Maximiser; Sony DTC55ES DAT; recorded at Out Of The Blue, Manchester

Teknik has featured in these pages no less than four times in the last year or so, for which I make no apologies at all. And given the association with 'Dare' and its predecessor 'Demo Takes', it makes it all the more ironic that the panel were actually unable to hear this track. A billowing analogue phrase ushers in rigid but not stroke-inducing beats, and

WINNER

Mesh

'Believe In'

Emax II (keyboard), Emax II (rackmount); Akai S950 (expanded); Roland Juno 106, Jupiter 6, SH-101, MC202, MKS30, MKS50, TB303, R8, TR727; Korg Wavestation; Chase Bit One; Casio CZ101, MG-510 MIDI guitar, DAR-100 DAT; Sequential Circuits Pro One; Oberheim Matrix 1000; E-mu Vintage Keys; Yamaha TG77, TG55, TG33, TX7, REX-50; Boss DR-660, SE-50, NS-50, CL-50; Cheetah MDR-16; BBC UMI; Atari Dr.Ts KCS; Creator; Groove MIDI-CV; Seck 18:8:2 mixer; Fostex R8; Sony DTC55ES DAT; Shure SM58 mic; Alesis Quadraverb; ART Multiverb LT.

Apparently, according to Mesh (who were reviewed in our November issue), "Chrysalis Records rang us up the day the magazine came out and asked if we'd send them a tape". Well, there you go. Whether there was a representative of that august organisation present at the Forum, I don't know, but if there was, he or indeed she will have felt the full force of Mesh's hardware. 'Believe In' is a large, expansive song with many moving parts and a good deal of steam emanating from the engine room. Cynical as we may be about hooks, the chorus probably swung it for the lads, being a bit of an epic culled from the Depeche Mode academy of music and drama. Jolly good, as they say, show.

Contact: Neil, 0272 671067/601759 (Bristol)

A delighted Nigel Lord presents Mesh with their QR10

the whole thing ebbs and flows with measured assurance. '2000' was conceived as a tribute to Manchester's bid to host the bi-millennial Olympic Games, and just because that failed there's no reason why we shouldn't reschedule it for the Northern Music Show later this year.
Contact: Jonathan Russell, 0273 464142 (West Sussex)

Ian Catt, last-minute panellist and DF saviour

Hard Sync
'Ravin Bananas'
Atari ST running Cubase; Korg PolySix, M1R; Akai S1000; Roland MKS50, EX8000, DRV1000, DRV2000; MV1602 mixer; Aiwa HDS1 DAT; Fender Stratocaster; Morley wah-wah pedal

I first heard this band when I was reviewing demos for *Home & Studio Recording* magazine, and I was impressed then. The track's called 'Ravin Bananas' for very elegant reasons: it's rave, and it features bananas. Or more precisely, it features an impudent steal from 'Shy Boy' by Bananarama, through which a cascading cluster of backing vocals from the girly trio dances in and out of an admittedly quite formulaic beatbox backing. The wah-wah pedal is important, adding an unusual texture to the sequenced melange, brightly recorded directly to DAT. I suspect the panel were being a little purist in the face of cheeky pop insolence when they failed to produce garlands of praise for this consummate novelty. Or even laugh.
Contact: Paul Donald, 0753 650057 (Bucks)

Sunday 28th November

The Furniture Beetles
'Wow'
Atari ST running C-Lab Notator 3.1, Unitor II; Korg 01W/FD; Akai S950; Gibson Les Paul; Alesis Quadraverb GT, 3630 compressor; Teac A2340SX 4-track; Casio R-100 DAT; Sony Professional Walkman; AKG D140E microphone; Teac 2A 6:4 mixer

The Walkman is used to make location recordings, in exotic places like Malaysia, no less. Not that any such ephemera clogs up 'Wow', which simply bleeps along Shamen-like without the rap. Once again, standard pop structures are happily ignored, and the panel had less trouble with this than with the suspicion that more challenging material may be lurking elsewhere in The Furniture Beetles' catalogue, just as more interesting sounds might be lurking elsewhere in the memory banks. Mind you, you can't blame the band for giving the impression that the chosen track suggests more ability than it proves, firstly because it at least establishes something of a good impression, and secondly because (ahem) I chose it.
Contact: Dave Warren 0245 346490 (Essex)

Necroscope
'Dying Moments'
Akai S900; Alesis MMT8; Roland SH101, Juno 106; Kawai K1; Korg Polysix; Yamaha QY10; recorded at The Reptile House (16-track), Lichfield

The dark and doom-laden brand of technology-based rock identifiable with the likes of Ministry, and spreading like a tumour (forgive the metaphor, but it is apt) across Western civilisation, got a good look in at the Forum courtesy of this crunching diatribe from Necroscope. Possessing all requisite graininess, grunge and metallic clout, this is an excellent example of its kind. What Mixmaster Morris took issue with was the unrelenting and sometimes irrelevant obsession with hideous and cruel imagery that unfailingly accompanies product of this type – and judging by some of the examples he gets through the mail you can hardly blame him. But Necroscope are nice boys, really, and damaged nothing on the way out.
Contact: Phil Price 021 422 5265 (Birmingham)

Ladies and gentlemen, Mr Andrew Jones...

Sunday's winner Paul Frankland (Woob) reveals a suitcase of demos for Mixmaster Morris (left). Phil Ward has seen it all before...

Vital Sign
'Serious'
Equipment list not supplied

A repeat appearance for Vital Sign, who featured at Wembley last year and who came up with another rich and tuneful offering. Unfortunately, songs were not the order of the day, and the panel seemed disinclined to examine the merits of making programmed instruments sound like the real thing. Although this is a very interesting area of music technology – especially for songwriters and arrangers – it could just be that we've achieved a degree of sophistication in the sounds and sequencing options available now that makes them too subtle to be interesting, too discreet to inspire. None of which, of course, detracts from the natural musicality of Vital Sign.
Contact: Justin Birt 0883 717834 (Surrey)

WINNER
Woob
'Up The Garden Path'
Atari 520STFM running Sequencer One Plus; Korg M1 plus soundcard; Akai S950 (expanded); Alesis Microverb II; Studiomaster Diamond Mix 16:2; Boss digital delay; Aiwa DAT; Kenwood cassette; "very old" Tascam Porta One

Woob's campaign is very singular. Following persistent and colourful flyers, a box shaped like a house arrives, containing one demo. Then, regular newsletters begin, supplemented by a detailed questionnaire. "Do you use Woob music to... relax/dance to/drift off to sleep to/other (please state)", for example. I suppose under "other (please state)" you could include 'expound the virtues of ambient electronic listening music', because that's exactly what Mixmaster Morris did. And so did the rest of the panel, interestingly enough. That a highly abstract and lengthy stretch of gently throbbing music can walk off with first prize in an event of this kind is certainly one in the eye for hookdom, and not even a dodgy pan-pipe sample could stay the panel from its brave course in voting ambient tops. As if that wasn't enough, afterwards Woob (aka Paul Frankland) met and exchanged ambience with Mixmaster Morris, too. Lucky git.
Contact: Paul Frankland 0252 733256/0628 785460 (Surrey)

Woobie Brothers: Paul gets his prize from Phil Ward (left)

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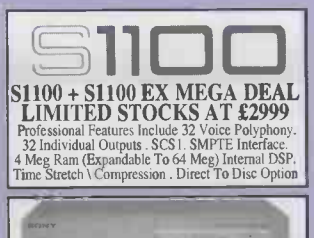

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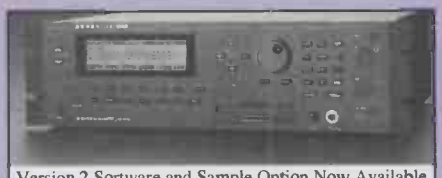

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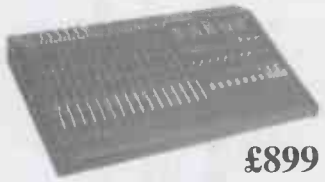

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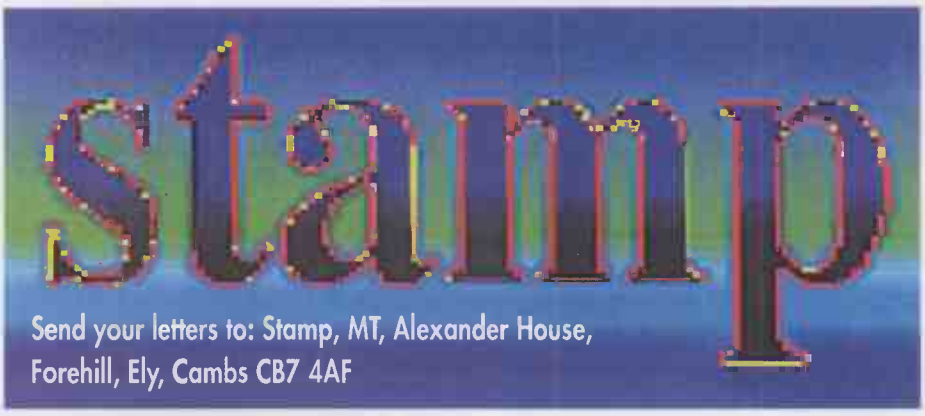

Public convenience

● *Much of the development in music technology has borrowed and benefitted from the computer industry. Workstations, samplers etc, have beneath their sleek 'musical' interfaces, microprocessors, data buses, RAM, ROM etc...*

Musicians have familiarised themselves with the hardware, bits, bytes, SCSI drives and other trappings of current computer technology. So many now enjoy the power and freedom of expression these developments have made in home recording. And yet, after all their hard work they still meet the dinosaur of the 'Recording Industry' when it comes to selling their works or getting airplay.

I wrote some time ago along these lines, but what struck me recently was another feature from the world of computing which could benefit musicians. The 'home programmer' has little or no hope of interesting the software giants such as Lotus, Borland or Microsoft. These companies promote and develop their expensive products with all the advertising hype at their disposal. Sounds familiar doesn't it? Just like the Sonys and EMIs of the music industry. Well, what happened in the world of computing was PDS – public domain software.

Just in case anyone is not familiar with such software; simply put, you buy it for just the cost of the disk – or copy for free – and if after using it you decide you like it, you pay the originator a reasonable fee. You're also free to copy and distribute such software to friends. The programmer relies on your honesty for the chances of some revenue, rather than the far less likely 'big deal' from Microsoft. If you look at the public domain catalogues you will find thousands of cheap software titles – some useless, but some better than their so-called professional counterparts.

So how would PDM – public domain music – work? Well, first you would put a PDM logo on your work which would allow and encourage copying, together with a cost and an address to which anyone who likes it could send your cash. Initially, you would advertise and charge only the cost of the media and postage; cassettes about £1.50, CDs less! At such low costs the public could afford to try before they buy. Next, some enterprising businessperson (someone at MT?) *could produce a catalogue and distribute PD music by taking in master tapes, cheaply copying and distributing these to the public at minimal cost.*

The argument against PDS is that programmers get ripped off with widescale pirating of software, but the growth of PDS proves this wrong – as does the fact that I'm writing this using Glite, a PD wordprocessor which I tried for £2.50 and subsequently bought for £30. To paraphrase the dictum of shareware, "one day all music could be sold this way".

James Whitehead
Coventry

➤ I can certainly see the potential of the idea, James, though I think there are a couple of questions that remain. For example, given that CD is by far the most popular of the current recording mediums, could musicians afford the initial outlay for production costs (£1000+) with no guarantee of recouping their investment? Also to be considered is the question of copyright; I personally would feel rather nervous of placing my musical ideas (as limited as they may be) into the public arena without the weight of a record company behind me to fight any legal battles which might ensue were those ideas to be 'appropriated' by anyone else. I certainly couldn't afford to meet the legal costs involved myself and I doubt if others could.

And one final point: it would trouble me greatly to think I had no control over the way in which copies were made of the music I produce. If the wildly varying quality of cassettes we receive is anything to go by, many people still don't value their own music enough to record it on reasonable quality tape, why should they take the trouble with other peoples'? This, I believe, is where the parallel with software breaks down. Copying disk data is much less problematic.

I hope I don't appear to be pouring cold water over the idea – I'm sure these difficulties could be ironed out with thought. **NL**

Generally lacking

● *Your reply to Robert Grimes in the November issue was of great interest to me as it highlighted a developing situation with regard to 'General MIDI' products that could be misleading to your readers.*

You suggested that Robert might like to check out the CD-1 Hyperkeyboard from General Music which you said was General MIDI compatible. In fact, the CD-1 is not *GM compatible. It only offers 6-part multitimbrality over MIDI, falling a long way short of the 16 parts defined in the GM specification. If you try playing a full 16-part General MIDI song file that you've bought specifically to go with your 'GM' keyboard and play it through the CD-1, the result will probably be lacking in something (like 10 parts of the arrangement!). But General Music have proudly adorned their CD-1 with the General MIDI logo and this is perhaps where you, and potentially many others, have misunderstood. A closer look at the logo will reveal the 'Sound/Perc' overwritten in small print. This is supposed to indicate that only the sound set and drum map conforms to the General MIDI specification.*

This in itself is a useful feature and I'm not casting aspersions on the quality of the CD-1 as a keyboard per se, but General MIDI compatible it most certainly isn't, and as such should not, in my view, be sporting the GM logo – albeit overwritten.

As the use of MIDI has grown in popularity and has appeared on less and less expensive equipment over recent years, I think it fair to say that there has been some confusion – particularly in the domestic user section. I have had several calls from confused customers wondering why they can't get any sound out of their 'Midi' hi-fi when its connected to the MIDI out socket of their keyboard. The development of General MIDI is undoubtedly going to result in more questions from users, many of which will be directed to MT *with your reputation for technical expertise.*

It is the responsibility of manufacturers to make clear the capabilities of their product so that all of us in the industry can help customers take advantage of new technology as easily as possible.

So check that GM logo and spec. Is it really fully GM-compatible or is there any 'small print'? Even if a product only falls short of the GM spec by, for instance, not supporting the GM on/off message, it is not fully *compatible and may therefore not show the GM logo, but it may be so close that it represents excellent value for money and you'll never notice the one small shortcoming.*

General MIDI is an important development and I am sure that all major keyboard manufacturers will soon be offering GM product. However, it is important to keep things clear and accurate – if customers are confused or feel misled, they won't buy.

Martin Lawrie
Casio Electronics

On his case

● *So Robert Casey ('Stamp' Dec '93) wants no more 'my computer is better than yours' talk.*

Why then does he go on to boast about MultiTOS being "truly pre-emptive multitasking unlike Windows 3.1's tarted-up task switching"?
Alan Farthing
Norwich

Gi's a job

● *I am writing to you for two reasons. Firstly, I enclose a copy of my demo tape which I hope you will be able to review in 'Dare!'. It was produced on our school equipment – a Korg M1R, Atari 1040STFM running C-Lab Notator and a Cheetah mother keyboard.*

I am now half-way through my A-levels at Wells Cathedral School and am studying composition. I first took an interest in synthesiser music three or four years ago and since then have become a 'Synthesiser Prefect' and deal with much of the organisation and technical management of our somewhat limited school facilities (I have no equipment of my own). I have had some of my music published on a commercial relaxation video, but this demo tape represents my first foray into the world of music production in the proper sense.

The second reason for writing is that I intend to take a year out after my A-levels during which I would like primarily to try and gain some sort of foothold in the music industry before going on to study astronomy or astrophysics at university.

Trying to get a job in a recording studio seems like it could be a good idea, to build up contacts and experience – but I am still looking for other ideas.

Perhaps there may even be a job opening with your magazine for a year? Again any help you could offer would be greatly appreciated.
Julian van Eyken
Shepton Mallet

➤ Where to begin, where to begin...

You're absolutely right, Julian, getting a job in a recording studio is a good idea. Unfortunately, it's just about the most difficult idea to put into practice you could have had. The industry is currently awash with young people like you who are quite prepared to subject themselves to the most appalling working conditions and endure all manner of indignities for the chance of a job as tea boy (or girl) in a studio. In fact I've known of a number of people offering their services free of charge just to get the "foothold" you yourself would like. The difference, I feel I must point out Julian, is that these people plan to make this the beginning of a career in the industry, not just a 12-month 'sabbatical' after which they'll leave to study astrophysics.

Really, you have to ask yourself if you were looking for someone to fill a junior position in a studio would you go for someone prepared to spend the next few years of their working life with you or someone you knew was leaving after 12 months?

I'm afraid that's something I would have to take into consideration when selecting staff for *MT*. **NL**

Eye, eye

● *Whilst leafing through your magazine last month, an article took my eye. Could I please have it back?*
Nellie Maynard (Mrs)
Tunbridge Wells

➤ There's been no sign of it round here, Nellie, but I'll keep an eye out for it and if anything rolls up I'll let you know – OK? **NL.**

Opinions expressed in readers' letters are not necessarily those of the Editor, who cannot be held responsible for their contents and reserves the right to abbreviate letters where necessary.

That was Then

Great Moments In Techno, 7: *Arnold Dolmetsch perfects a method of modulating the frequency output from a voltage-controlled oscillator with an LFO. Dolmetsch was a misunderstood genius who was considered to be far ahead of his time. But then, it was 1786 and electricity hadn't yet been discovered. Prat.*

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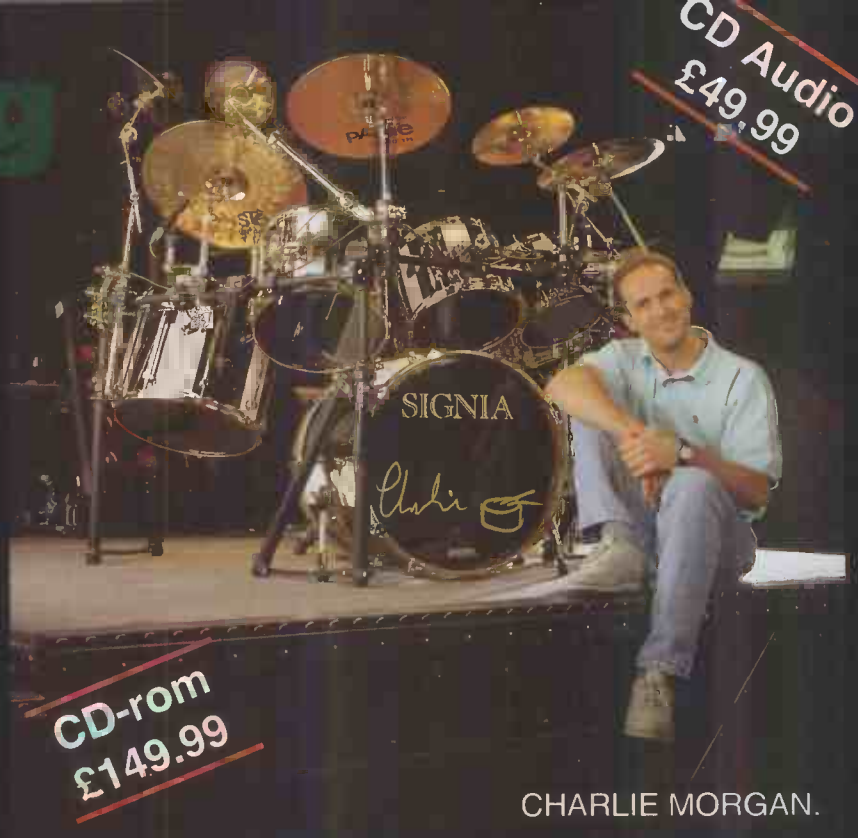

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Colin Lemmon (Home & Studio Recording review, June 1993)
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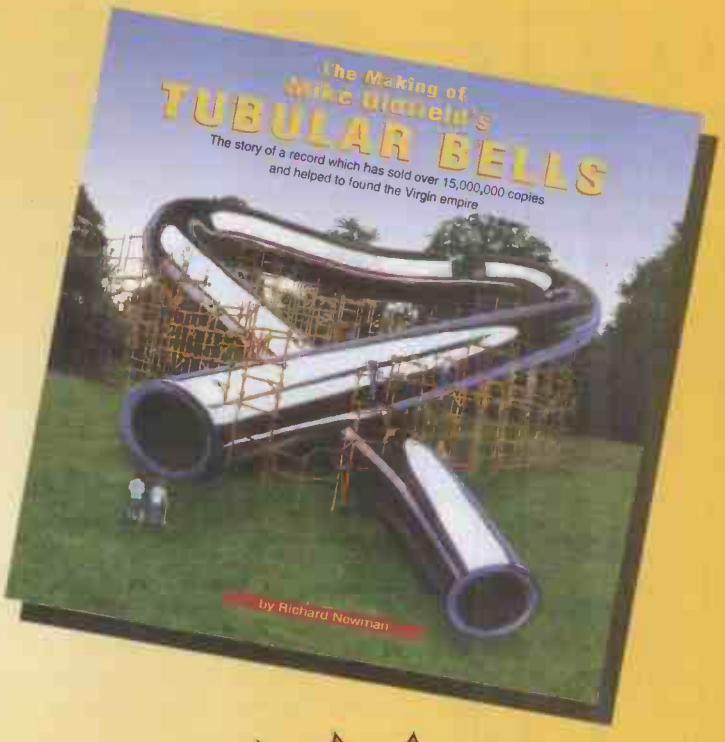

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GRIEF

Write to Grief, MT, Alexander House, Forehill, Ely, Cambs CB7 4AF.

Q *I recently bought a small Roland keyboard setup – a PC150 and a Boss DS330 – and I am already dreaming of sequencers and samplers, but I'm uncertain of what to get. It seems that a computer-based sequencer will be more versatile, letting me upgrade to more professional software later on.*

My problem is what type of computer to get. Which make/range is the best value for money (I'm on a tight budget) and which runs the best range of software? I am also unsure of what software to get. I would like to get something affordable but not too limiting.

It is difficult to get objective advice as shop assistants are either ignorant or biased towards their own products.

Michael King
Witkoppie Ridge
South Africa

A Appreciate your problem, Michael. With so many computers and so much software on the market, it can be difficult making a decision. The whole subject really requires a full length article and that's exactly what you'll find in this very issue (see Computer World, page 20). But here's the short answer...

PCs are about to take over the world but they're absolute pigs to set up and to troubleshoot. You get more power for your pound with a PC – but you need it to run a program within Windows and on top of DOS. Apple Macs are, in my opinion, much better, and far, far easier to use. Also Apple are wont to cut the price and rehash the range every week so that they are just about, almost, nearly becoming affordable.

The ST is cheap (particularly secondhand) and there is more music software for the ST than all the other computers put together. With the advent of the Falcon, however, development on new ST software will inevitably slow down. The Falcon is nice but a lot of music software won't (at present) run on it.

From a musical point of view you can forget the Amiga – Commodore seems to have – and there's really not the range of music software for the Acorn Archimedes for it to be taken into consideration.

There's a growing range of music software for the PC and most new development work takes place here and on the Mac. The most popular top-end program is probably Cubase which is available for the ST, PC and Mac – although the PC version is rumoured not to be without its problems. Emagic's Notator is my preferred choice for a sequencer-cum-scorewriter. It's currently only available for the ST but Notator Logic is even more mega and will soon be available for the ST/Falcon, Mac and soon for the PC.

There are lots of less-expensive programs for all formats although the greatest range and choice, again, is for the ST. The Mac has a cluster of good programs but the range is not vast and there are not many budget ones. The PC is starting to show out in this area.

As you don't say just how tight your budget is, it's difficult to give specific advice. You can do the most with the least lolly by going for an ST and a budget sequencer – although you might like to consider buying a major sequencer, one which you can take with you if you upgrade your computer. Some companies have cross-platform upgrade policies so if you started with Notator on the ST you could upgrade to Notator Logic on the Mac or PC. **IW**

Q *As a huge Jean-Michel Jarre fan, I was especially interested to read your interview with him in the August issue. I have all of his albums but was interested to see the large collection of other records he has released that I never see in the shops. I am very keen to get hold of a copy of 'Chronologie (Part 4)', with the remixes your list mentions. I presume that the only way of doing this is by going through the record company, so is there any chance you could send me the address of both Polydor and Dreyfus?*

Jonathan Buchanan
Hants.

A 'Chronologie (Part 4)' is still in the shops, having recently charted (slightly) following an appearance by Jarre on *Top Of The Pops*. Which should mean that if your local shops don't have a copy actually in the store, you can ask them to order one for you. The title, artist and label is all they need. The larger retailers should have a database of catalogue numbers for

every record currently available in the UK, which they use to place orders with the record companies. As for the albums, Polydor say that all of Jarre's back catalogue is still available by following this procedure; nothing has been deleted. Furthermore, they do not supply recordings directly to customers.

Dreyfus is a French label with whom Jarre has a separate deal, who should be able to supply *Waiting For Cousteau* (1990) and the compilation album *Images* (1991) directly. Write to them at: Francis Dreyfus Music, 26 Avenue Kleber, 75116 Paris. **PW**

Q *I regularly buy your magazine and would like to congratulate you on a first class publication. Whilst there is as much interest in electronic music here as in any other country, we do not have a national magazine and rely on imported magazines for information. So please keep up the good work.*

I am interested in purchasing some MIDI connection equipment and on 7th September I wrote to Philip Rees after seeing their ad in your May issue. I regret to say that after two months I have not received a reply. Since you were offering a free V3 as a subscription incentive I assume you have a good relationship with the company and would be most appreciative if you could ask them to respond to me.

John Colville
Colonial Entertainment
Brisbane
Ozzie Land

A Such flattery. Such honesty! We blush.

Yes, we do enjoy a good relationship with Philip Rees and on their behalf I would like to pass on the message that your letter was never received. Perhaps one of Her Majesty's postal workers thought it contained Castlemaine XXXX vouchers or something. Anyway, a catalogue is winging its way to Australia and should be with you by the time you read this.

Actually, the company does a fair bit of business Down Under, so in theory there should be no difficulty dealing with them. As for their gear, I can only recommend it. G'day... **IW.**

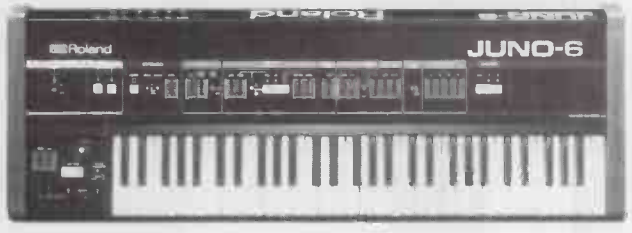
Q *Over the past few years I have been building up my bedroom studio which entails: Roland S-330, Roland Juno 6, Roland SH-101, Moog Prodigy, Akai X7000 + upgrade, and Cubase on the ST. I write dance music, progressive underground, not like this commercial bullshit, mentioning no-no-no-names (ha! ha!).*

Anyway, my problem is that I am sampling all my sounds. It's OK for the drums but when I sample my lovely analogue keyboards I can't change the parameters of the sounds while they're playing – obviously.

I've come to the conclusion that I need a Kenton retrofit for my Juno. With C/V outs I can, so I've been informed, run my SH-101 and my Prodigy. If this is so will all the functions on the SH-101 and Prodigy work as normal?

Could you please answer this for me before I go and spend £300-odd on a retrofit?

Mark Slyfield
Tonbridge, Kent



The Moog Prodigy (above) and the Roland Juno-6 (below) – MIDI retrofits are possible but tricky.

A Now then, Mark, the 'Stamp' pages are the place for your musical rantings. We get enough Grief here as it is. We just try to get the gear working – what kind of noise readers make with it is their own business.

I'm afraid your problem isn't quite as straightforward as it may at first appear. For example, how old is your Prodigy? Some early models didn't have a CV or S Trigger. But Kenton can supply a kit to add them for £9.40 or the company will do the job for you for £35.25.

The Juno 6 is not the best keyboard in the world to retrofit with MIDI. While it can respond to pitchbend and velocity info, the keyboard is not velocity sensitive and doesn't handle aftertouch – so it can only transmit note on and off info. But the retrofit is available at £229.

The best solution depends on exactly what you want to do. For example, it may even be worthwhile buying a separate keyboard to use as a master. Kenton's main MIDI-to-CV converter is the Pro-2 (£189) but the company is currently developing an even more mega machine, the Pro-4, which could well be a better option for you.

All things considered, the best thing I can suggest is to contact Kenton directly and head honcho, John Price, will explain all your options. He'll also be able to give you more info about the Pro-4 which is going into production at the time of writing. Tel: 081 974 2475. Fax: 081 974 2485.

Of course, you could get rid of your antiques and go completely MIDI. But somehow I don't think you want to do that... IW

Much as we'd love to, we simply don't have the time to reply to readers' queries by phone or individually by letter. Similarly, if you phone us with a query you are more than likely to catch us in the middle of something, so we wouldn't be able to devote the time to you that we would wish.
More to the point, most questions involve a degree of research – books, magazines, manuals, massage parlours, phone calls and so on – so many queries couldn't be dealt with on the spot anyway. Contrary to popular belief, we don't know the answer to everything. We answer as many as we can as quickly as we can through these pages, to which end we appreciate written queries – help us to help you and all that.

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We are authorised agents for every major brand, and as such, we can offer an unbiased and objective assessment of products from an end users point of view having worked with the product ourselves. Our breadth of product coverage from MIDI to tape makes us the number one package specialist and our system based approach pledges us to supplying you with a working solution to include all the necessary accessories and peripherals right down to installation and training in your studio if you wish.

Although our product range is probably Europe's widest under one roof - having fifteen full time demonstrators enables us to train them in depth on particular products. (you've probably dealt with stores who know little about what they sell but we're confident that if you have a question or a problem using your equipment, we will have someone 'in house' who will have the answer). We will never tell you to '...ring the manufacturer',

We are now the U.K.'s largest music dealer for most of the products we sell (ask the manufacturers). In practice this means that our prices are the cheapest, often by a substantial margin. More importantly our products are backed up by a staff of over 25 including engineers, on hand long hours to provide a quality of after sales service that stems from almost 40 years serving Britain's leading music professionals. Put simply we understand that the equipment you purchase from us is used to produce music, often in a commercial situation, and our first priority is to keep you working at all times.

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8 & 16 Track

In true Turnkey 'Hands On' tradition, all the popular desks and recorders are on permanent demo. Don't take the so called 'advice' of the cardboard box shifters; - Choice of EQ and Noise Reduction for example is highly personal, features should be carefully compared and specs are often deceptive. Please come and listen for yourself.

HOT TECHNOLOGY JUST ARRIVED & AVAILABLE NOW ON INTEREST FREE CREDIT 0%

Alesis adat, BRC & SRC. Alesis X2 desk. Allen & Heath GS3 desk.

SOUNDCRAFT SPIRIT AUTO £POA

The quality of the SPIRIT desk is already legendary. Now SPIRIT AUTO gives you professional studio automation at a home studio price. Fader automation is provided for every channel with mutes for both monitors and channels. Assignable software groups are also available through Steinberg's excellent automation software which gives graphic controller editing as found in Notator etc... and also doubles the fader resolution. Available Now.

Soundcraft SPIRIT FOLIO - in stock

FOSTEX R8 & 812 EIGHT BUSS DESK

MTC1 Available

£1999 NEW BOXED

Outsells the other 8 tracks 10 to 1. Dolby C first choice for narrow gauge multi-track. Used with ground breaking MTC interface you control tape transport from MIDI sequencer. We've pioneered this interface and are experts in the field 812 console is modular, MIDI mute ready, has full bar-graph metering and UK designed EQ.

ALESIS ADAT (BRC here!

WHICH DIGITAL 8 TRACK?

or TASCAM DA88

CRAZY ADAT PACKAGES THIS MONTH ONLY

ADAT + SPIRIT 16 All new £479
ADAT + MACKIE CR1604 All new £399
ADAT + A & H GS3 All new £499
DA88 PACKAGES BEST PRICES PLEASE CALL

40% OFF • SECOND HAND EX DEMO • END '92

DEMO ADATS	available	Tascam 238S	£1399
Alesis BRC	£1279	Tascam 2500	POA
adat / Spirit 16	£4799	Fostex G16S	£3999
adat / CR1604	£3999	Fostex 812 new	£749
Fostex R8	£999	Soundcraft 1" 8 tr.	£799

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turnkey PRO

SOUNDCRAFT DC2000 MOVING FADER CONSOLE

The future of mixing now, utilising the most advanced digital technology. The DC-2000 offers moving fader automation and a host of software and hardware features associated with the largest studio consoles. Add to this Soundcraft's renowned audio quality, sophisticated EQ, and an aux section that can be configured to suit a whole range of needs. Call Spike Burridge or Nick Thomas for details on 071 240 2041.

ROLAND DM80 8 TRACK + DM80-R REMOTE

We've secured a limited quantity of these units, making them the best value in digital recording / editing by a huge margin.

The RRP is £10,500 - we can't print our price, save to say it makes this product competitive even with digital tape-based systems, but with all the advantages of direct-to-disk.

Stocks are very limited. If you're going multi-track digital in the near future, check this offer out while its still available.

PRO DAT

Tascam DA30	Call
Panasonic SV3700	Call
Aiwa XD-S1100	£779
HHB Pro 1	£929
Casio DA7 new	£699
Kenwood DX7	£389

SONY DTC690 full-size OAT £469

Scoop purchase, limited stocks at this price

Lowest ever prices on these Sony DATs - unprintable !!!

SONY TCD-D7 portable DAT POA

Leading portable with optical I/O

EFFECTS

EX DEMO • CASH REBATES • SECOND

ART FXR	£169	dbx boom box new	£299
AlesiQuad'verb GT	£359	dbx 363x gate new	£249
Alesis 3630 new	£239	dbx 163xcomp new	£159
Alesis MEQ230	£199	Drawmer LX20	£199
Alesis microverb3	£158	Ensoniq DP/4 new	£999
Alesis MIDIverb3	£219	LA 4x4 new	£299
Aphex Type C II	£259	Lexicon LXP1 & 5	£399
BEHRINGER ALL NEW		Lexicon LXP15	£799
Behringer Composer	£299	Lexicon ALex	£359
Behringer Ultrafex	£222	Roland SDE / SRV330	
Behringer Duallex	£125	both on demo	£549
Behringer Denoiser	£185	Sony DP range lowest UK	
Boss SE50	£275	Yamaha SPX990	£599
Boss SE70	lowest UK	Zoom 9001	£179

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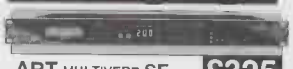
QUADRAVERB+ £299



ART MULTIVERB SE £325 NEW BOXED

24 bit, 20 kHz bandwidth, 90dB dynamic range. 50 effects, up to 4 at once. Control of up to 8 parameters over MIDI offer breaks all previous limits. No real competition! R.R.P. £499

ZOOM 9120 only £295

BBE 362 / 462 BEST UK POA

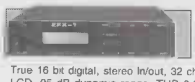
To insure the frequency components of any audio signal reach the listener in the proper relationship, the BBE process uses phase correction for the 3 frequency bands. It does not add artificially created harmonics of any kind. Both units are stereo and offer Definition and Lo-contour adjustment, while the 462 has separate controls for both channels.

VISCOUNT STUDIO MULTI-EFFECTS

turnkey FACTORY DIRECT exclusive

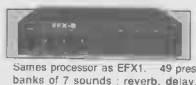
When our product specialists fir heard the prices on this new range multi-effects, they were sceptical. brief listen, however, quickl revealed the strength of Viscount' custom VLSI technology. In ke departments like dynamic range, and signal to nois they out-perform units at twice the price. But mo impressive are the algorithms themselves Developed in Europe by a team of leading musician to suit current up-front mixing techniques, they ar characteristically smooth and free from the harsh grainy overtones associated with many of today' budget units Reverbs for example are clean, natura and spacious. And we're confident enough to sa that if you are not fully satisfied return the unit to u within 5 days for a prompt and courteous refund.

AS REVIEWED IN SOUND-ON-SOUND NOV 1993



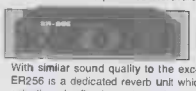
EFX1 £239

True 16 bit digital, stereo in/out, 32 character back-lit LCD, 95 dB dynamic range, THD 0.02% Full MIDI control (in/out) Excellent sound quality, shimmering reverbs, full editability, up to 6 simultaneous effects - reverbs, chorus, phasing, flange, delays, echo distortion, pitch-shift ±2octaves, compression, noise suppressor, 128 presets (105 user spares) space saving half rack design (rack mount kit available)



EFX £139

Sames processor as EFX1. 49 presets made from banks of 7 sounds : reverb, delay, chorus/flang phase/pitch-shift, multi, guitar1, guitar2. All th convenience of a preset machine with the advantage editting the most useful parameters e.g. reverb time, dela time, chorus depth, etc... Footswitch control, -20/+4 operation. 95 dB dynamic range, 0.02% THD, Peak LED. Ideal for project studio users. Up to 6 effects once, half rack size (rack mount kit available)



ER25 £149

With similar sound quality to the excellent EFX2, ER256 is a dedicated reverb unit which offers a wid selection of refined reverbs and delays. As the na implies, there are 256 different presets.

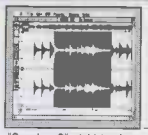
DIRECT to Disk

Our digital suite is up and running at all times featuring all the leading edge technology. We demonstrate and support applications from AV sound effects/foley editing, and stereo mastering/12" remix editing , through to hard disk multitrack integrated with MIDI. We are the natural choice for any Mac based system being fully Apple authorised. (99% of pro audio dealers are not) Call in or make an appointment with Nick Thomas or Spike Burridge.

digidesign main dealers

HOT TECHNOLOGY JUST ARRIVED & AVAILABLE NOW ON INTEREST FREE CREDIT 0%

Akai DR4D, Digidesign TDM buss, Lexicon NuVerb, SMPTE slave driver, Macintosh Track Manager software for DM80. New Quadra 40MHz 68040 under £4000!



SESSION 8 AUDIO MEDIA II SOUND TOOLS II PRO TOOLS £Call

"Session 8" eight track recording system for 386/486 PC compatibles running Microsoft Windows 3.1.
Audio Media II (LC) , Cubase Audio and StudioVision compatible, digital I/O c/w Sound Designer II software at unbelievable price. (Also LC version for £1175)
Sound Tools Pro Master 20 - state of the art 20-bit digital recording
Pro Tools expansion chassis adds twelve NuBus™ slots to your Mac II

AKAI DR4d (hard disk extra) £POA NEW BOXED

ASK ABOUT OUR EX DEMO DR4d's

Exciting new 4 track CD quality hard-disk recording system at a staggering price. This product is perfect for those wanting a simple system which doesn't take ages to learn. A computer is NOT required, thus reducing the cost significantly. Also, backup is to DAT, so there's no need to buy expensive tape streamers etc... which are necessary with some other systems. This is a wi

CALL TO BOOK A DEMO

Digidesign Session 8 £great

A breakthrough in direct to disk recording ! The new Session 8 provides 8 track hard-disk recording running on the IBM® compatible PC. (you'd be amazed how cheap modern PCs are!) Built-in digital mixing with EQ, and SP/DIF interface on entry level model, and AES/EBU on XLRs with pro version. Multi-tasks with some PC sequencing programs including MaxPak v2.0

ATARI Falcon CUBASE AUDIO POA

AudioPack (Cubase Audio + SMPII)	£1350
Cubase Audio + SPDIF	£1173
Falcon 4 Meg RAM, 65 Meg hard disk	£799
Falcon 14 Meg RAM, 65 Meg hard disk	POA
Falcon compatible VGA screen	£85
SPDIF interface	£349

Call for the best deals available.

DJ producer

TECHNICS SL1210 industry standard record deck inc cart. POA

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Gemini PMX12	£156	Vestax PMC-05T	£239
Gemini PMX15	£210	Vestax PMC-10-II	£299
Gemini PMX2000	£340	Vestax PMC-15	£443
Gemini PMX2500	£370	Vestax PMC-20SL	£948
Gemini PMX3000	£399	Citronic MasterMix	£485
Gemini PMX3500	£420	Citronic SM150	£199
Gemini PDM1008	£350	Citronic SM250	£299

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PRICES GUARANTEED*

nn | YAMAHA | CASIO | Studiomaster | STUDIOMASTER | KAWAI | BOSS | FOSTEX | TASCAM | JBL
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Numark PPD | gemini | Technics | EV MACKIE | ARBITER Vestax | JLCOOPER | DAC dbx | TOA | KURZWEIL | GEM

MIDI hard ware

AKAI S950EX PACK £999 NEW BOXED

Package Includes :
- Time & Space CD with 1000 samples
- 750k RAM expansion
- 50 floppy disks

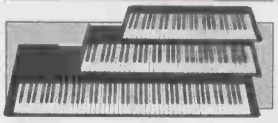
Scoop purchase on the last of these industry standard machines and the best selling sampler ever. 11 outputs • Timestretch • Exchange disks with S1000 • 48 kHz sampling rate • Huge library available • 1.5 Meg RAM • SCSI & SP/DIF option cards • Full synthesis features. No other sampler gives all these features at anywhere near this price. Turnkey galactic exclusive. Hurry while stocks last !!!

S3200, S3000, S2800, CD3000, S01 Unbeatable prices

E-MU MORPHEUS £POA NEW BOXED

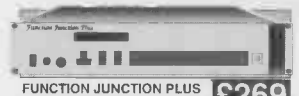
The most exciting new synthesizer for years ?? In addition to the superb 16-bit sound quality and straightforward user-interface that Emu are famous for, Morpheus' Z-plane technology offers new sounds and expressive control that you've never experienced.
SOS Review : *This instrument is the fifth absolute definite winner I have encountered in my lifetime - Sell the family heirlooms, prepare your credit card and bank account, pick up the telephone, get your order in now! If synthesis is your game, Morpheus is THE instrument to buy - Martin Russ, Sound on Sound, Dec 1993*

EVOLUTION EVS1 rack synth £199



FATAR STUDIO MASTER KEYBOARDS

The 49 & 61 synth-action keyboards offer full-size velocity sensitive keys (128 levels) with a firm but light action. Keys are designed for minimum flex and positive seating. FATAR's flagship models feature a fully weighted and counter-balanced action keyboard with 88 piano depth keys. Both models have a split capability, and the PLUS also has pitch & mod wheels, 3 separate outs, adjustable key-response curves, and assignable footswitches and pedals.
We feel that these keyboards are the best we have played. If you disagree, we will give you your money back.

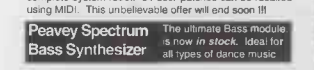


FUNCTION JUNCTION PLUS £269
16 x 16 Programmable MIDI Patchbay

FUNCTION JUNCTION £169 NEW BOXED
8 x 8 Programmable MIDI Patchbay

Both these patchbays have a unique 8-way merge facility. Additional features include : Zoning, MIDI filtering, transposition & delay, velocity offsets, scaling, compression, expansion, switch and cross-fade, Controller remapping, MIDI "panic" button provides complete system reset. 64 user-patches can be recalled using MIDI. This unbelievable offer will end soon !!!

Peavey Spectrum Bass Synthesizer The ultimate Bass module is now *in stock*. Ideal for all types of dance music



YAMAHA RM50 drums £399 NEW BOXED

The ultimate drum module - over 1000 sounds, 16 part multi-timbral, spread a single sound across the keyboard. Full synthesis including resonant filters 5 MIDI controllers per channel assignable to pan, filter, balance, decay, pitch etc... velocity cross-fading, 8 outputs, 6 trigger inputs, MIDI sample dump option, 4 card slots (Huge range of up-to-date sounds available). Unbelievable spec, mind-blowing sound quality ridiculous price ! Hurry Hurry Hurry !

40% OFF • SECOND HAND & EX DEMO • UP TO 40% OFF • INSTANT CREDIT • CASH REBATES • SECOND HAND & EX DEMO • CASH REBATES • UP TO 40% OFF • INSTANT CREDIT • CASH REBATES • SECOND HAND & EX DEMO • CASH REBATES • UP TO 40% OFF • SECOND HAND & EX DEMO • UP TO

SYNTHESISERS			
Boss DS330E new	£299	YamahaTG100	£299
Ensoniq SQ1	£799	Yamaha QY20	£349
Ensoniq SQ2 new	£899	SAMPLERS/PLAYERS	
Ensoniq SQR	£449	Akai S1000	£1899
Ensoniq KS32	£1399	Akai S01	£635
Evolution EVS1	£139	Akai S950	£849
GEM S2	£1399	Ensoniq EPS16+	£999
Roland A30 76 note GS master kybd			£349
Kawai K-11 new	£699	Ensoniq ASR10	£1799
Kawai G-Mega new	£449	Roland SF700	£1499
Kawai Spectra	£299	Roland S750	DEAL
Kawai XS1	£149	S950 750k card	£89
Korg M1	£799	S1000 2M cards	£129
Korg WavestnA/D	£1099	ProteusMPS +	£899
Korg WavestnSR	lowest	Proteus/1	£499
Korg O1WproX	£2250	Proteus/1 orch	£645
Roland S750 24 bit stereo sampler			£2399
Korg O1Wpro	£2449	Proteus/2	£599
KorgO1WFD	£1350	Proteus/2XR	£799
Korg O1R/W	£799	Proteus/3	£479
Korg O3R/W	£599	Proteus/3 XR	£645
Korg O5R/W	in stock	Vintage Keys	£749
Korg X3	MEGADEAL	Proformance	£249
KurzweilK2000	£1979	Proformance+	£295
Roland SC55 Mk2 Sound Canvas			£449
Oberheim M1000	£399	MOTHER KBDS	
Peavey DPM3	£1090	Roland A30	£299
Roland MKS80prg	£1999	Roland PC200Mk2	£189
Roland JD800	£949	Roland FP8	POA
Roland JD800 new	£1099	DRUM MACHINES	
Roland JD990	£999	Alesis SR16	£199
Roland JV1000	£1699	Alesis D4 new	£299
Roland DJ70 sampler - great for MCs			£1175
Roland JV80	POA	Boss DR660	BEST
Roland JV30	POA	Emu Procussion	£449
Roland JV880	POA	Roland R8 Mk2	£599
Warldorf Microwave	£899	Yamaha RY30	£349
Yamaha SY85	DEAL	Yamaha RY10	£199
Yamaha SY35	£599	SEQUENCERS	
YamahaTG500	£899	Alesis Datadisk	£315

40% OFF • SECOND HAND & EX DEMO • UP TO

VISCOUNT RD70 data filer £239 NEW BOXED

Records straight from your sequencer or plays back type 0 and 1 MIDI files from Double Density MS-DOS disks (from 1040STE, PC and Mac) Programmable playback abilities similar to top CD players. Uses direct to disk storage for very large note capacity. Stores SysEx dumps. Competitive units costing 50% more don't do most of this.

KAWAI EXCLUSIVES

while stocks last	RRP	DEAL
G-MEGA 32 part Synth Module	£649	£449
K-11 great sounding fully editable 32 part synth with resonant filters, vel & A.touch keybd	£949	£699
MDK61 5 oct Master Kybd with aftertouch, pitch and mod wheels	£309	£239
Q-55 MIDI sequencer 3.5" disk drive	£409	£299
Q80EX 32 track MIDI sequencer, huge memory, excellent editing facilities	£549	£399
RV4 multi-fx unit with 4 stereo ins and outs plus digi I/O fantastic quality, unbelievable value	£809	£599

DREAM GMX-1 General MIDI sound module £159 NEW BOXED

The perfect module to include in your first computer music setup. 128 General MIDI sounds including full range of natural and synthetic sounds and drums. Includes built-in MIDI interface for PC windows 3.1, Macintosh and Amiga serial port. 16 part multi-timbral, 20 note poly, responds to MIDI volume and pan for computer controlled automated mixes. Must be heard to be believed.

GMX1 / PC200-II	£315
GMX1 / Kawai MDK61	£369

KORG WAVESTATION SR !!! £750

YAMAHA QY10 £149 NEW BOXED

Almost half price! 8 part multi-timbral, 28 note poly sample player (TG100 sounds), with 8 track sequencer + full MIDI spec - built-in keyboard, wide range of drum sounds, selection of preset patterns if required. Ideal as writing tool / sound module / backing machine. Smaller than a video tape - sounds on the move ! Ideal stocking filler. Runs from batteries or AC adapter (optional). These are the last units available anywhere - order now, don't be disappointed - these will fly.

QY10 / PC200-II	£319
QY10 / Novation MM10	£299
QY10 / Kawai MIDIkey	£379

ROLAND JD800 MEGADEAL £Call

VINTAGE

Synthology~ at Turnkey. We buy, sell, service, and provide full back-up for Analog Synthesizers. We carry the largest inventory of analog including ARP, Moog, Roland Buchla, Serge, Oberheim, Korg, Sequential • modular synths, polyphonics and monophonics. We can locate all rare synths and rare parts. Unusual machines include 1920's RCA Theremin, The Ondermoog, the last brand new Xpanders and Matrix12s in the world, Moog string filter.

Super Jupiter with programmer	£1999
Sequential Circuits Prophet VS rack	£2299
ARP 2600 Modular System	£1795
Roland MKS70 Super JX	£795
PPG Wave 2.2	£899
Yamaha CS70M	£595
Emu Emax	£799

ANALOG HOTLINE : 071 240 6044

COMPUTER

Personal Computers now form the heart of every MIDI Studio, and have been our core business for some years. Experience in this area differentiates the serious dealers and we have specialists in each of the three main areas. We are fully Apple Authorised - 99% of music dealers are NOT.

DIGIDESIGN SPECIAL DEALS
Call to discuss your Mac package

Cubase Lite	£99	EZ Vision (#1 seller)	£99
Cubase Mac	lowest UK	EZ Starter Kit	£229
Cubase Score	£425	Finale 3.0	£699
Cubase Audio	£649	Mac interface	£69
Emagic Notator Logic	POA	Vision 1.4	£299

PASSPORT MAC & PC SOFTWARE

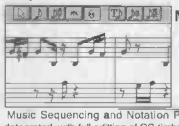
Mastertracks Pro 4.9 (Easy to use sequencer)	£199
Encore 3.0 (64 stave pro score package)	£469
MusicTime 1.2 (Popular budget version of Encore)	£229
Trax 3.0 (New budget sequencer with score)	£116

ROLAND ATW-10 PACKAGE in stock ! with MIDI kit Call!

Almost every PC owner we speak to is looking for some way to combine proper hard-disk recording and MIDI playback. The ATW10 card includes 2 channels of CD quality hard-disk recording, a full Roland General MIDI synthesizer (like an SC7), and a multi-effects processor. Bundled Sound Impression software offers full WAV file editing, mixing, playlisting and integration with MIDIfiles and CD audio. You can use it with *any* MIDI sequencer.
COME IN AND SEE IT IN OPERATION !!!

MIDI QUEST version 4.0 Universal Editor and Librarian packages £219*

THE WIDEST MIDI DEVICE SUPPORT AROUND
For Atari, Macintosh, DOS, Windows and Amiga. Now supports 185 MIDI devices, including Vintage Keys, Kawai K11 & G-Mega, Wavestation SR, X3 ,2 and i3, Waldorf Microwave, SY85, TG500 and TG100, and many more. *235 for the windows version.



MUSICATOR FOR WINDOWS £295

Music Sequencing and Notation Printing Seamlessly integrated, with full editing of GS timbres and effects
You used to have to buy 3 separate packages to do all this! **Ideal with DS330, SC-1, SC7, SC55, etc...**

FREE ACCESSORIES • SECOND HAND 3

Steinberg Cubeat	£79	1040 + Monitor	£350
Steinberg Cubase	£289	Atari Falcon from	£499
Cubase Mac	£375	Emagic Notator Logic	
Cubase Score	£425	new copy at	£289
Cubase Audio	£699	Emagic Creator	£169
Cubase windows	£179	Emagic Notator	£219
Steinberg Midex+	£399	Emagic Unitor2	POA

UP TO 40% OFF • ACCESSORIES AND SOFTWARE • CASH REBATE • DEMO • FREE

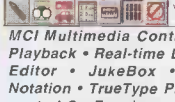
New Atari 1040STE + Monitor £349
or £369 with free Steinberg Sequencer

LAST STs EVER !

+ Notator £599 | Cubase Lite £429 | + Cubase £649

BOSS DS330 "Sound Canvas" £299

IBM® PC COMPATIBLE



MAXPAK FOR WINDOWS version 2.1 £235

MCI Multimedia Control • Sample Playback • Real-time Drum Pattern Editor • JukeBox • Multi-stave Notation • TrueType Print-out • 200 control SysEx mixer • Generic Bulk Librarian • MIDI Machine Control etc...

WE DON'T SELL PCs!

But we can advise you what and where to buy, what to avoid buying, and what to do with it once you've bought it. Call us now !!!

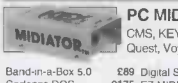
TRADE IN YOUR ATARI CUBASE 3.0 TODAY !

CUBASE FOR WINDOWS 4 PC versions available

FACT : PC Cubase for windows is already the best selling version of Cubase worldwide. WHY? The PC is the only true industry standard (ie all of industry). Reliability is total, the PC is a domestic home computer. Because of ferocious PC competition, you can now buy a 486 PC for a pittance. It is many times faster than an 8 MHz 1040. - 32 bit chip, up to 66 MHz clock, IDE hard-disk, Industry Standard expansion slots etc... There is no doubt that the PC has the largest range of serious business software too!

OFFERS INCLUDE A *FREE* PC MIDI INTERFACE

Cubase Lite (score only)	£149
Cubase 1.02 (key, grid & drum only)	£249
Cubase 2.5 (everything except printing)	£449
Cubase Score (full version)	£549

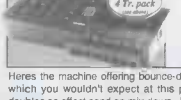


PC MIDI interfaces CMS, KEY, MIDIMan, Music Quest, Voyetra, MOTU...

Band-in-a-Box 5.0	£89	Digital Soup	£99
Cadenza DOS	£175	EZ MIDI Pro sequcr	£69
Cadenza-Windows	£295	Finale Academic	£345
Cakewalk Live	£39	Logitech Sndman 16	£189
Cakewalk 4.0	£115	MicroLogic	£POA
Cakewalk Prof.	£189	PC Drummer	£45
Cakewalk win 2.0	£295	QuickScore Deluxe	£115
Coda Finale 2.2	£699	Wave for Windows	£115

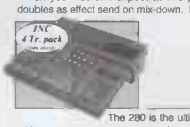
The UK 4 TRACK Centre

It is fair to say that Turnkey is the birth place of personal Multitrack, indeed the company and its founders were instrumental in the development of the first Japanese products of the early '80s. The philosophy was always to use innovative technology to bring multitrack within the realms of the musician. Our current catalog is still the definitive guide to the subject - comparing all the current machines. Call us for a copy



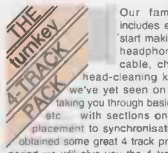
FOSTEX X18 £279 NEW BOXED

Heres the machine offering bounce-down and sync jacks which you wouldn't expect at this price. Monmix bus doubles as effect send on mix-down. Dolby R.R.P. £289



FOSTEX 280 £599 NEW BOXED

The 280 is the ultimate 4 track for use with computer sequencers such as cubase.As well as Dolby C, 8 inputs, 3 band sweepable EQ and 2 auxiliaries, the 280 sports MIDI machine control via the MTC1, so that your multitrack can be slaved to the computer rather than the other way round which is the norm. 2 autolocation memories, autoplay and



Our famous 4 track pack includes everything you need to start making music Sennheiser headphones, microphone with cable, chrome tapes, cables, head-cleaning kit and the best book we've yet seen on multitrack recording, taking you through basic track laying, mixdown etc with sections on everything from mic placement to synchronisation and MIDI. We've obtained some great 4 track pricing AND for a limited period we will give you the 4 track pack (normal price £59.95) absolutely free with the units featured herein

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NEW Fostex 380S + 4 track pack	£POA
NEW Tascam 424 + 4 track pack	£459
NEW Tascam 488 + 4 track pack	£1099
NEW Yamaha MT8X + 4 track pack	£POA

TASCAM Porta 07 £349 NEW BOXED

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Tascam 688 8 trk	£1899	Fostex X18	£249
Tascam Porta 03	POA	Fostex X28	£325
Tascam Porta07	stock	Fostex X28H	£349
Tascam 424	£449		

YAMAHA MT120 £369 NEW BOXED

Yamaha's new double speed four-track features 4 mic inputs, a stereo graphic eq

STUDIO hard ware

STUDIO RESEARCH MIDI SYNCHRONISERS

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MacSyncMan	as above with Mac I / F		£249

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Fostex MTC1 new	£199	Shure SM58	lowest
JBL Control 1/1+	LOW	XR300 new	£199
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MIXERS

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Imagine a 24 channel mixer that introduces no additional noise. 20 jack inputs and 4 balanced XLR mic inputs. Using your sequencer to control the MIDI volume and MIDI pan on your MIDI keyboards and sound-modules, the NEM24 offers unequal value - 4 sends, built-in headphone amp, 19 " rack mounting • Irresistible . Also available is NEM8, a basic 8:1 or 4st:2 noise eliminating mixer for £79

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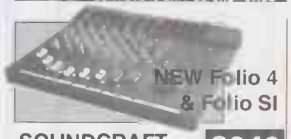
Phonic BX8600		Seck 24:2 new	£799
Phonic PEQ3400		Seck 12:2 new	£399
Phonic PEQ3600			
Phonic PMX1600			



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Harvey Bainbridge
Interstella Chaos (Taste)

If only Harvey had been commissioned to write the soundtrack for *Cosmos*, Carl Sagan's seminal TV series on pop astronomy first screened in the late '70s. Then his swirling, vibrating keyboard sketches – with titles like 'The Sun In Hydrogen Light' and 'Dense Dust' (try saying them in Sagan's slow Californian drawl) – would have found a natural home. Mind you, at that time he wouldn't have had access to the thick clouds of digital synthesis which sweep through this recording like meteor showers.

Once you've heard the album, it doesn't surprise you that Harvey Bainbridge, as the press release cryptically reveals, "was Hawkwind keyboards 1978-91". Why not? Because there are a few telling details which distinguish this cosmic ambience from that peddled by the likes of The Orb, ski hats or no ski hats. Firstly, the aforementioned digital synthesis. The rave generation favours a blend of analogue synthesis and sampling, and while there are a few burbling sequences on *Interstella Chaos* the main thrust is decidedly FM, LA and AI². This makes the sounds much more identifiable with specific products, not unlike corporate demos. Secondly, the sampled sound bites which commonly link the dance generation's collages with commercial and media reality – and which do so with wit and irony – are entirely absent. And furthermore, take a look at the logo. Not even Roger Dean could compete with such a monstrosity.

So while the ambient wave is rehabilitating entire squadrons of space cadets from the original psychedelic era and its aftermath, the differences between old school and new school persist, and remain in evidence no matter how abstract the musical form. Hey, now *that's* cosmic. PW

Sect
Telekinetic (Third Mind)

"Ideally," says Mike Victory of Sect, "our material would be sold with software and/or hardware for a complete virtual experience." Well, here's hoping. At the moment, though, you have to content yourself with interacting with the play, pause and stop buttons on your cassette deck only. Which is worth it, if a tad old fashioned, because Sect's debut album is a fascinating take on rave-influenced electronic music. Hailing from Canada, and citing industrial legends Skinny Puppy and Front Line Assembly as major influences, Sect are now engaged in the business of assimilating European dance culture into their sound.

The result has a hard edge without being hardcore, with rasping synth lines threatening to remove a layer or two of skin on their way to the back wall, and yet an evenly paced, nay jolly collection of bouncy beats. Above all it's a positive, confident mood which the machines create, which certainly does reflect the optimism of rave culture, and which mercifully counters the doom-laden industrial waste of grunge-stained youth on that side of the Atlantic. PW

Jansen Barbieri Karn
Beginning To Melt (Medium)

Medium Productions is, to the three former members of Japan, pretty much what Swim is to Colin Newman (see page 29). Recorded at the home studios of Steve Jansen and Richard Barbieri, *Beginning To Melt* is defiantly experimental in purely musical terms, but pushes few barriers technically. Fluid, growling bass lines and swelling keyboards spar with Jansen's resonant percussion textures in songs and

instrumentals which, however carefully layered on the multitrack, retain an improvisational air and a spontaneous beauty.

The album is only available by mail order, which may be a sign of things to come, at least: order yours from Medium Productions Limited, 74 St Lawrence Road, Upminster, Essex RM14 2UW; prices are £12.00 UK, £12.50 Europe, £14.50 USA or £15.20 Japan. PW

Jam & Spoon
Tripomatic Fairytales 2001 & 2002 (Dance Pool)

Well known as a remix team, Jam El Mar and Mark Spoon, producer and DJ respectively, perfectly combine the twin disciplines of a new breed of musicianship. Their experience behind both desk and deck enables them to conjur a delicious array of electronic beat

styles – not just four-on-the-floor-fillers, but subtle rhythmic workouts in which every sound is perfectly placed. There are two CDs – *2001* and *2002* – the first designed for the dance floor and perfectly acceptable in the car or at home, the second designed as ambient listening and acceptable just about everywhere.

There are one or two Euro-indulgences (Jam is from Frankfurt); 'Right In TheNight' utilises a classical guitar phrase which to snobby Brit ears (mine included) lurches perilously close to those awful disco hybrids from the Continental '80s. But what the hell, Giorgio Moroder was a genius, even if at the time of 'I Feel Love' informed rock musicians wouldn't give him the the *tempo del giorno*. The significant thing about these releases is that, like the output of Harthouse, Rising High, Sabres Of Paradise and a host of others, they set new standards for the non-musician. Sound itself is the music; the studio is the instrument. **PW**

1993 – a year in music technology

MT's award ceremony, in no particular order. All of them, one way or another, have given the wheel a turn...

Albums of the year:

Aphex Twin *Selected Ambient Works 85-92*
808 State *Gorgeous*
The Beloved *Conscience*
Sheep On Drugs *Greatest Hits*
Sven Väth *Accident In Paradise*
Orbital *Orbital*
William Orbit *Strange Cargo III*
New Order *Republic*
Ash International *Scanner*
System 7 *777*
Speedy J *Ginger*
Amorphous Androgynous *Tales Of Ephidrina*
Fluke *Six Wheels On My Wagon*
Björk *Debut*
Ultramarine *United Kingdoms*
The Drum Club *Everything Is Now*
Pet Shop Boys *Very*
Mixmaster Morris & Pete Namlook *Dreamfish*
The Higher Intelligence Agency *Colourform*

Events of the year:

Steve Reich *The Cave*
The Megadog MIDI Circus
U2 *Zoo TV*
The Orb *Ultramarine in Copenhagen*
Cyberseed

Videos of the year:

Cyberdelia
Flying High With Mixmaster Morris & The Wisemen
Future Shock

Innovative product of the year:

Peter Gabriel *Xplora 1*

THE MT INDEX

Material
Hallucination Engine (Island)

Bill Laswell's supergroup continue to get their instrumental passports stamped in and out of all sorts of musical territories, under the strong dub influence of the bass-playing eclectic warrior himself. Funky tabla!

Ice Cube
Lethal Injection (4th & Broadway/Island)

A refreshingly mellow vibe infiltrates the normally pounding loops of Ice Cube's hip hop, courtesy of co-producer QD III (son of Quincey Jones) and a guest appearance by the godfather of a more innocent funk, George Clinton.

Ash International
Scanner 2 (Touch)

Even though they've misquoted *MT*'s last review in their press release (Psychic *BT*, guys), I'm delighted that another volume of these profoundly disturbing sound bites has appeared. A grainy, gruelling soundtrack to human foibles.

DiY
Strictly 4 Groovers (Warp)

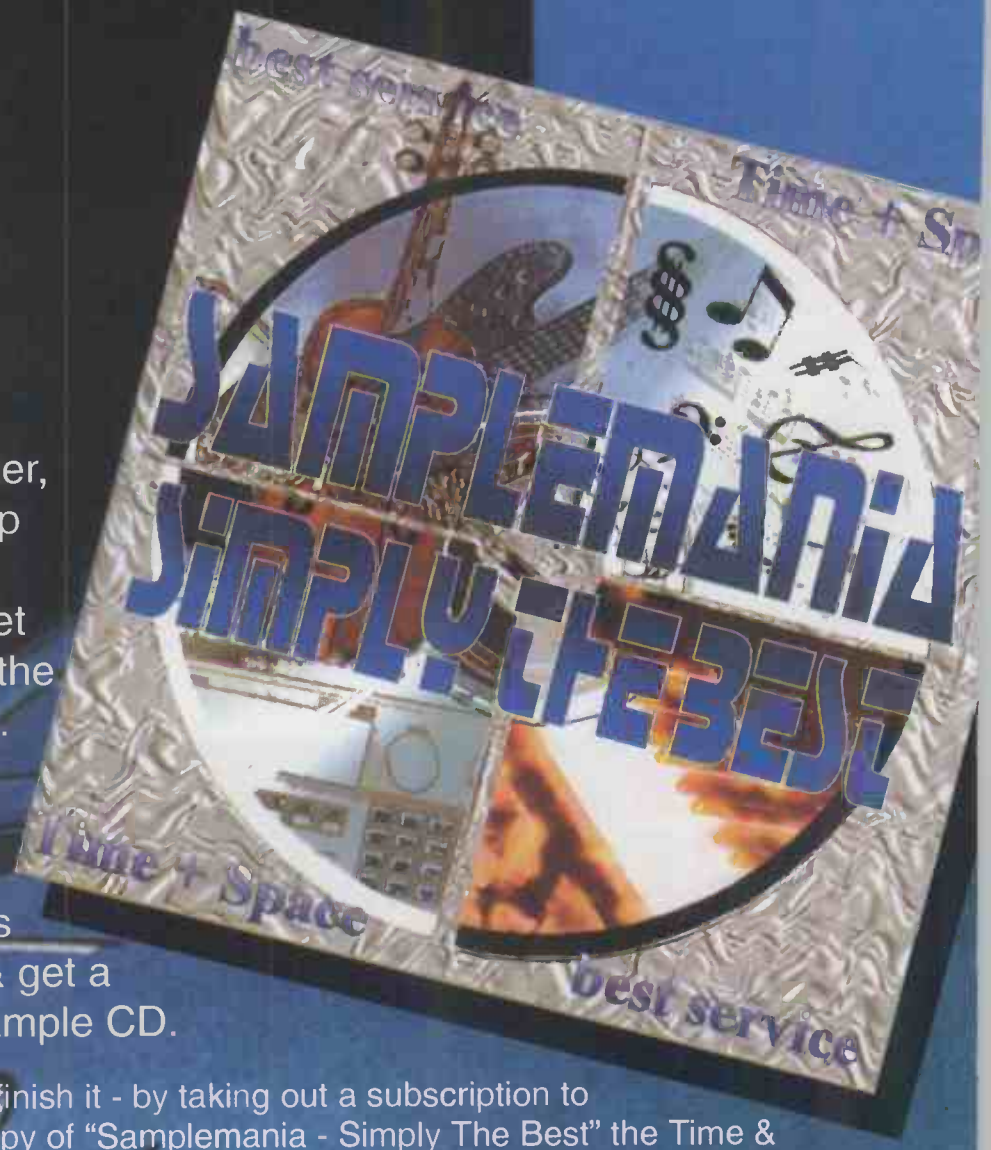
Minimal dance grooves and a final rinse of ambience from Nottingham's collective of no less than 14 different DJs, engineers and "personnel". It all revolves around a studio with a generous open-door policy towards local talent, and this debut album – more a compilation – proves there is no dearth of local talent.

sounding like this. Let's hope their emerging computer literacy encourages experimentation in the studio to parallel Floyd's epic achievements in the '70s.

New Year's Resolution:

Get Less Exercise

Forget about eating better, smoking less & taking up jogging - in fact this resolution means you get even less exercise! Let the postman do the walking.



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To subscribe by Access or Visa credit card, telephone the Music Maker Subline on 0353 668850 (9-12 & 1-5pm Mon-Fri) and speak to Rose or Lisa.

THE WAREHOUSE

The Warehouse contains *MT*'s readers' ads – the largest repository of high-tech bargains in the Northern Hemisphere. Some of the ads are free to place; others are 'priority' ads for which you pay to jump the queue – next issue guaranteed. Priority ads appear in bold type.

To place a free ad:

- Dial **0891 100767*** (24 hours)
- State category, recite your ad and include contact details
- That's it

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- Dial **0891 100796*** (24 hours), state category, recite your ad and include contact details, Access or Visa card number and expiry date **OR** fill out and post the coupon below
- Up to 25 words costs £5.00
- Additional words are 50p each

**Calls cost 36p per minute (cheap rate), 48p per minute at all other times. We regret we cannot answer queries regarding readers ads.*

The Warehouse is for private vendors **only**. Business vendors must use the classified ads at the back of *MT*.

KEYBOARDS

AKAI MX76, £400. Rhodes VK100 organ, £750. Yamaha TG77 module, £650. Emu module, £180. Tel: 0792 897426.

ARP ODYSSEY synthesiser, analogue classic £300. Yamaha FB01 FM module, £100. Tel: Martin 0489 891815.

ARP ODYSSEY; £350. Oberheim SEM, £350. Memory Moog, £750. Oberheim DSX sequencer, £150. TEAC A108 sync cassette deck, £50. Stephan. Tel: 0726 66715.

ARP OMNI II rare classic analogue keyboard in excellent condition, complete with original manual, £600 or swap for Roland Jupiter 8 or Roland Vocoder Plus VP330. Dave. Tel: 081 902 9784 or work 081 964 2211.

CASIO AZ1 portable MIDI controller keyboard, full functions, 3\ octaves, vgc, £190. Robert. Tel: 071 281 1918.

CASIO VZ10M, £130. Evolution EVS1, £100. Tel: 0748 825481.

CAVENDISH ROMA 901 electronic organ. Good working condition. Sequencer and percussion, £200 ono. Tel: 0983 873791.

CRUMAR BIT-1 61-note, 64 memory, 12 DCO, velocity sensitive, splittable MIDI keyboard synth. Hard case, factory tape and manual. Perfect condition, £300. Tel: 0224 323007.

ENSONIQ SQ1 workstation, 16-bit sampled sounds, 24-bit digital effects, 16 track sequencer, vgc, home use only, footpedal, £500. Russell. Tel: 081 559 8956.

ENSONIQ SQ80 synth and manual. 1000's of sounds. Studio use only, £375. Pete. Tel: 081 367 1720.

ENSONIQ VFX/SD1 voices – huge library in Atari, Ensoniq or PC formats. 5 disks with 1000 voices each. Only £12 per disk or £50 for all 5. Richard. Tel: 0736 67531.

ENSONIQ VFXFB1 music synth, as new, with Atari STFM computer upgrade to 1Mb with cubase Atari monitor, quick lock 2-tier stand, 6 channel stereo mixer with graphic equaliser, £1500 ovno the lot. Andy. Tel: 0903 722023.

EVS1 8-part multitimbral sound module inc. Atari editor, £100. Tel: 0702 349544.

FENDER RHODES Stage 73 piano plus DX100. Will swap for anything interesting. Tel: 0854 612554.

GEM S2, vgc, £1350. Akai S950, full upgrade & disks £800. Seck 24:2 mixer £350. DR660 drum machine £100. All home use only with manuals. Ian. Tel: 021 770 9073.

KAWAI K1 inc RAM card, vgc, £250. Roland D50 inc flight case & RAM card £450. Dan. Tel: 0276 682075.

KAWAI K1 multitimbral synth complete with 5-Star hand-built hardcase, both in excellent condition, £300 ono. Paul. Tel: 0235 534609 after 6pm.

KAWAI K1 very little use. Initial and after-touch keys, multitimbral with Yamaha R100 reverb, £275 ono. Tel: 0260 280131.

KAWAI K4 2 months old with 10 month guarantee. Hardly used. Boxed, manuals, stand included £400. Greg 031 343 6051 or 031 245 3356.

KAWAI K4 multitimbral polyphonic synth with manuals, vgc, £350 ovno. Bruce. Tel: 021 358 6311.

KORG 01/W FD with M and T card sets, virtually unused as surplus to requirements. Boxed, manuals and training video. Complete and as new, £1250. Tel: 0532 680331

KORG 03 rack workstation excellent condition- cost over £900. Sell for £595. Roland R70 drum box. Paul. Tel; 0302 538304.

KORG DW8000, £245, Kawai K1, £235, Yamaha Tx812, £145. Yamaha QY10, £155. All in excellent condition, home use only. Dean. Tel: 0908 235113 (Bucks).

KORG M1 excellent condition 6 months old with case and over 800 sounds on Mac Disk, £750. Dan. Tel: 0493 330441.

KORG M1 home use only, excellent condition including sound card. Bargain, £799. Tel: 0234 327556.

KORG M1 like new, boxed, manual, card, video and pedal, £700 ono. Terry. Tel: 0928 711006 Cheshire.

KORG M1 mint condition, boxed, manuals, home use only, Korg DS1 MIDI data filer, ROM card, PCM card, £775. Mark. Tel: 0737 221965.

KORG M1 with 3 soundcards, flightcase and manuals £745. Tel: 0256 64551.

KORG M1R rackmount workstation, £595. Yamaha KX5 strap-on remote MIDI keyboard, £175. Hohner/Logan string machine one dead key, £60. Tel: 071 625 4490.

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KORG M3R, £380. Roland D110 plus analogue sound card, £270. Cheetah MX800, £95. EBX1, £120. Kawai K4R, £220. Dream GXM1, £150. MQX16S MIDI interface with timecode, £90 plus PC software available. Carl Stocks. Tel: 0507 606956.

KORG POLY 61M MIDI, £200. KORG MS10, £140. Yamaha TX81Z, £140. Nigel. Tel: 0724 711353.

KORG POLY 61M MIDI, £200. Korg MS10, £140. Yamaha TX81Z, £140. Nigel. Tel: 0724 711353.

KORG PS3200, 100, £1500. Rhodes Chroma with MIDI, £800. Roland MKS7, £200. Roland CR68, £75. Roland CR78 with WS1, £200. Fujia D9E Hammond module., £175. Roland MKB, £1600. Paul. Tel: 041 772 9680.

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KORG WAVESTATION EX extra ROM cards, excellent condition, £875 ono. Steve. Tel: 0429 222517.

KORG WAVESTATION EX, only four months old, with manuals, mint condition, £900. Tel: 08266 339 (Dundee).

KORG WAVESTATION SR as new, £800. Yamaha TG55 module, £400. Tel: 0903 725452

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KORG WORKSTATION M1 £690 ovno. Julian. Tel: 0392 64493.

MATRIX 6 rack module analogue synth, £500. Rob. Tel: 0705 553842.

MOOG PRODIGY, £200. Roland Juno 106, £200 or will swop for analogue keyboard. Mark. Tel: 0374 415413.

ROLAND JUNO 106, vgc, £360. Roland SH101 plus manual £160, Crumar bitone plus case, manual, £250. Roland TR606 £70. Tel: 0224 323007.

ROLAND JUNO 106. £295. Ali. Tel: 0727 865932.

ROLAND JV30 including stand, £499. Alesis MMT8 sequencer, £125. Fostex X18 4-track recorder, £185. Tel: Colchester 0206 864377.

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YAMAHA DX27 immaculate - as new. Includes manuals. Price: £150. Tony. Tel: 0793 886 876.

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SEQUENCERS

ALESIS MMT8 8-track sequencer, boxed, as new, £150 ono. Paul. Tel: 0235 534609 after 6pm.

ROLAND MC50 boxed, £365. Alesis Datadisk SQ sequencer, £200. Function Junction MIDI patchbay, £200. Roland R8M dru module, boxed, £265. 3 cards, £25 each. Tel: 0332 841163.

ROLAND MT50 sequencer, 3395. Alesis Datadisk SQ and sequencer. Mr Jones. Tel: 0332 841163.

YAMAHA QY10, lovely cond, still boxed. Offers. Rob. Tel: 0225 878187.

SAMPLING

AKAI S950 fully expanded, Atari 1040ST, Philips 1084S monitor, C-Lab Creator, Casio CT-470 keyboard, Akai EX7SN plus extras, mint condition, £1500. James. Tel: 0279 659394.

AKAI S950 fully expanded, £795. Akai EX70C compressor, 360. Aphex Studio Clock SMPTE MIDI unit - can even MIDI map uncorded songs, £195. All ono, boxed with manuals. Tel: 0772 322 123 (eves) or if problems 0772 555 235 (day).

AKAI X7000 keyboard sampler with memory expansion board, exchange for Roland D10 synth. Tel: 0275 817026.

ALESIS SR16, £250. Tel: 0903 725452.

ASR10 KEYBOARD sampler/workstation, 10 months old, excellent. With modulation pedal and small library, £1300 or £1550 with 10Mb memory. Andy Ball. Tel: 0243 372107.

CASIO FZ1 sampler 2Mb, 60 disk library, FZ editor, tutorials, manual, boxed. Excellent condition, £850. Roland MT100 sequencer and sound module plus Atari editor, £250. Casio FZ10M rackmount sampler, disks, 3750. Paul. Tel: 0536 761014.

CHEETAH SX16 stereo 16-bit sampler, inc sample disks. Accept Akai disks vgc, £365. Reza. Tel: 081 471 0855.

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ALESIS SR16, £250. Tel: 0903 725452.

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Produced by **Progen Productions** this CD is a massive collection of killer sounds to create those grinding basslines and squealing leads, essential for all Techno, Rave, House, Acid and Ambient tracks.

Pure Technology have been established in studio sampling for 2 years. Ecstatic Acid Bytes is our latest sample CD and Progen have made it our best. The sounds on this CD are 100% **ORIGINAL** and are **NOT** available on any other sample CD. At **ONLY £22.95** it's sampling at a sensible price, the **ESSENTIAL** collection for your sampler

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1070 ORIGINAL VOCAL SAMPLES
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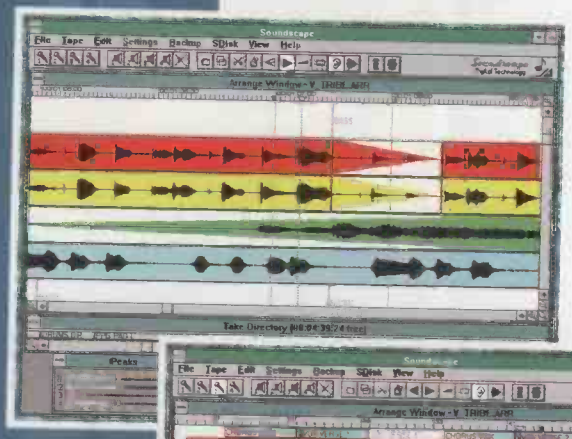

Operation is from an IBM PC™ or compatible and runs under Windows 3.1™. Software allows up to 64 virtual tracks to be recorded in stereo, edited (non-destructive) and digitally mixed down to four outputs. As the system is modular, several Soundscape units can be synchronised with full sample rate accuracy and used together giving up to a maximum of 32 inputs and 64 outputs.

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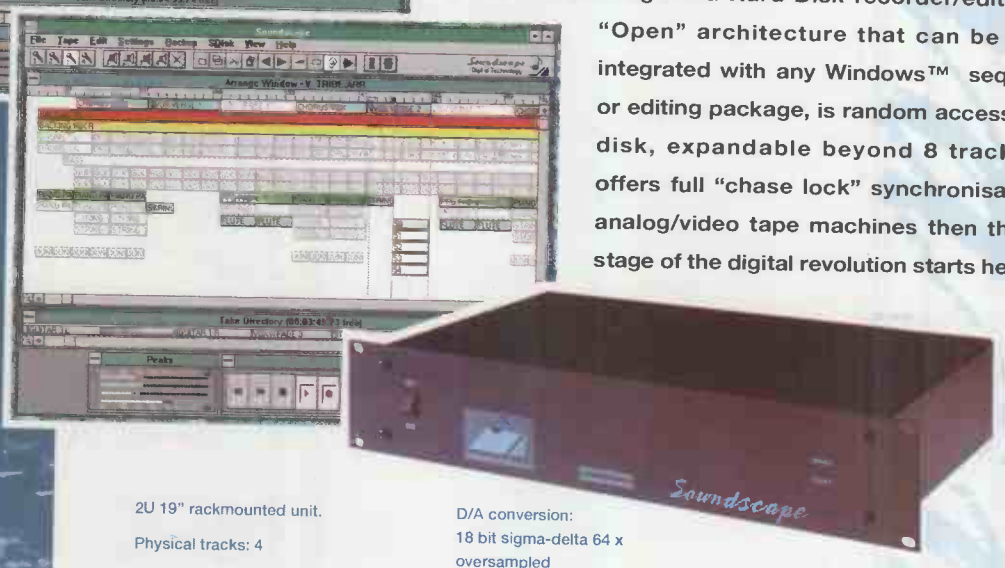

2U 19" rackmounted unit.

Physical tracks: 4

Sampling rate: 22.05/32/44.1/48KHz

Data format: 16 bit linear

Signal processing: 24-bit internal N.L.

Data storage: IDE hard disk 18mS, fitted in the rack unit (not supplied), size depends upon recording time required, e.g. 130MB gives 25min 45sec total @ 44.1KHz, 1gB gives 3 hours 22 minutes

2nd internal IDE drive can be fitted.

A/D conversion: 16 bit sigma-delta 64 x oversampled

D/A conversion: 18 bit sigma-delta 64 x oversampled

Synchronisation: Master or Slave, MTC with full chase lock, MIDI song pos.pointer + clock

Analogue in: 2 x RCA/cinch, unbalanced – 10dBv/+4dBv (2 tracks in)

Analogue out: 4 x RCA/cinch, unbalanced + 4dBv (4 tracks out)

Digital in: 1 x RCA/cinch, S/PDIF format (2 tracks in)

Digital out: 2 x RCA/cinch, S/PDIF format (4 tracks out)

Input S/N Ratio: > 93dB un-weighted

Output S/N Ratio: > 113dB un-weighted

Wow and Flutter: Un-measurable

Pro-Audio Option: XLR balanced Analogue inputs and outputs, AES/EBU Digital inputs and outputs (XLR)

Host Interface: IBM-AT: parallel via PC expansion plug-in card (ISA). Supports 2 x 4 track rack units.

MIDI: in, thru, out

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