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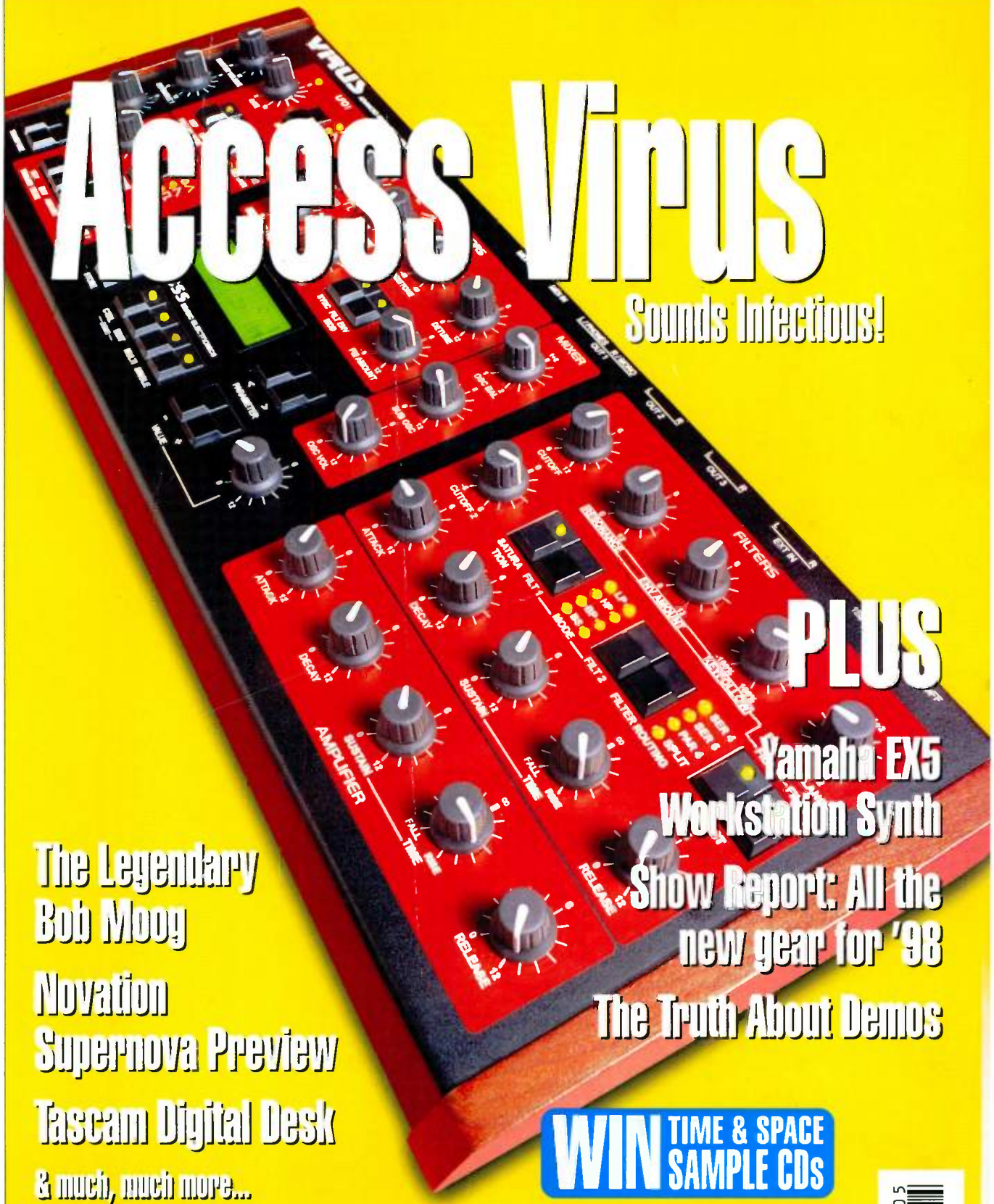

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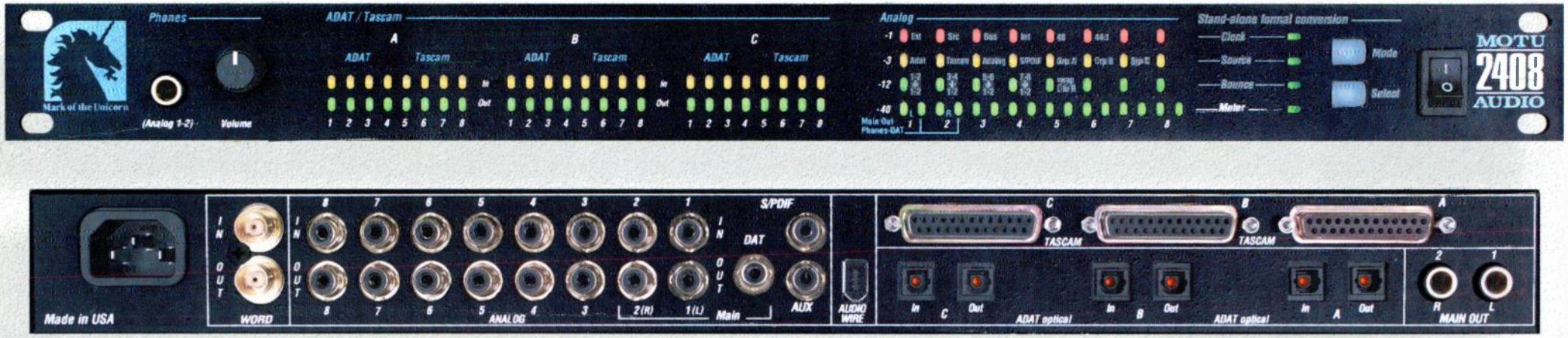

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leader

I and the rest of the *SOS* staff have just returned from the Frankfurt Musikmesse after five days of wandering through endless acres of new musical instruments and recording equipment, and the impression I've come away with is that most manufacturers see techno as the cash cow capable of laying the golden egg. Virtually all new keyboards are stuffed with techno sounds — some are even filled with techno loops, and software is popping up to enable those with no musical experience at all to cut and paste pre-packaged musical elements to make their own techno mixes. And still there are more techno sample CDs than you can shake a stick at. I don't know about you, but it all strikes me as rather sad. Obviously it's sad because musical forms other than techno tend to get neglected, but it's also unhealthy for the techno market itself.

Techno is only one sector of an ever-evolving dance-based musical movement, and though I'll admit there's only so much techno I can deal with in one sitting, the exciting aspect was that it started out as an experimental art form based on largely obsolete technology and relatively simple MIDI sequencing software. Unwanted old analogue synths that could be picked up for peanuts were pressed into service so that spontaneous timbral adjustments could be made during a performance, and though the underlying rhythmic parameters seemed fairly restrictive, there was still a huge amount of scope for variety and creativity.

Now the anarchic and experimental nature of dance music is being challenged by the company balance sheet, and there's a very real danger that such originality as still exists will be smothered beneath a deluge of pre-packaged techno for the masses. If you don't believe me, consider that Latin music used to be regarded as daring and trendy before it found its way into those awful automatic style accompaniment home keyboards. Remember the Smith & Jones sketch where they placed a tortoise on the keyboard of one of these monstrosities and started up the Bossa Nova backing? — even the family pet can play it! How long before we see that tortoise performing at a club?

I'm also concerned by the way dance composers are led to believe they need to pay ludicrous sums of money for an original TB303 Bassline or TR909 drum machine. When the TB303 was current, you couldn't give it away because, frankly, it was hard to program and the bass sounds were pretty unimpressive by any standards. Yet we're told that's what real dance music producers use, so we have to have them, or at the very least, use a modern keyboard stuffed full of samples of the same old machines. I can't see it myself, because given any half-decent analogue synth, or even a basic General MIDI synth with a hardware controller that lets you get at the filters, you can create your own sounds that are every bit as engaging, and still work within the genre. Considering that this is a supposedly anarchic art form, there's an almost frightening degree of self-imposed conformity.

For me, the last straw was seeing one of the world's most prestigious cymbal manufacturers announce a range of cymbals designed to emulate the sounds of TR808/909 hi-hats and cymbals. Whatever happened to choosing your own sounds and making music the way you wanted it? As Devo probably never said, "Are we not Sheep?"

On a completely different note, all of us at *Sound On Sound* are pleased to be able to welcome on board Hugh Robjohns as Technical Editor. Hugh is a keyboard player who uses a PC for sequencing, and has contributed extensively to *Sound On Sound* over the last couple of years — his background in operational engineering and training for the BBC helping him to become one of the most authoritative voices in audio journalism.

Paul White *Editor*

SOUND ON SOUND

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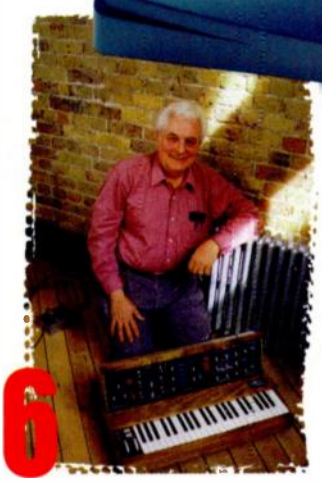

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Classical Gas

After reading Big George's interview with Debbie Wiseman in *SOS* March 1998, something struck me. In the last paragraph, Big George writes: "Watching Debbie Wiseman create such wonderfully rich and full music with only six people and without the use of any electronic instruments made me realise how the ability to write great classic music is a skill bestowed only on the very elite".

Maybe nothing has changed in the last 200 years and we're still entrenched in the idea that to produce really "classic" music one has to assemble a group of musicians whose instruments have been hewn from a recently felled tree and strung with fresh catgut (organic, of course), to play a score whose every note has been painstakingly thought out in advance by someone who is a member of the "elite". Will someone please tell me why, in certain peoples' opinion, music takes a good few steps up the class ladder as soon as one ditches electronics in favour of 'real' instruments (whatever they are), and employs musicians who most of the time specialise in musical necrophilia (the art of playing dead peoples' music)? The whole idea that the orchestra is the pinnacle of western musical culture no longer exists. The musician/composer of today has access to a broad tonal palette and he/she is not limited to the fixed timbres of the orchestra. Of course, this is not to say that traditional orchestral instruments are redundant. Far from it; they are all part of the 'sound world'. If a composer needs to use a violin, fine, but s/he also might choose to use an abstract sound produced by an electronic instrument of some kind. In my mind, both are just as valid and of equal importance to the development of our musical history. However, there are people who at the slightest opportunity will have a go at the composer who dares to use electronics in his or her work. This is not surprising, given the fact that as soon as you mention the synthesizer to anyone involved in contemporary classical music they immediately think of the tedious computer experiments of the '50s and '60s, or the mind-numbing, four on the floor dance music that seems to invade every area of our lives at the moment.

Big George's comments, innocent as they were, do nothing to break down the class system that seems to permeate the musical establishment. Finally, time is the only judge in deciding whether a piece of music deserves to become a "classic", and unfortunately, very few composers produce works worthy of that accolade, even if they are a member of the "elite".

Big George.

Tony Flynn
London

Big George replies: *Firstly, I'm so pleased you made it to the last paragraph of my piece on Debbie Wiseman. It gladdens my heart to know that all the time I spend speling thigns properley isn't for nothing. When I said "classic", I meant that she writes music which is classically orchestrated, with sublime melodic counterpoint and without the use of binary quantisation.*

With regard to your comments on felled trees and catgut, at least these are instruments made of ecologically sound materials, which will not only still work when the electricity supply dries up, but will eventually make good firewood. Plus you have to admit that instruments which have needed no upgrades for around three centuries must be good for something. I'm sure if Mozart were alive today he'd be stuck in front of an Apple Mac, but not wishing to be presumptuous, I'm even more certain that when it came to recording his pieces, he'd avail himself of the most powerful musical force known today: a full orchestra.

Personally, I don't own an orchestra myself and spend most of my time in front of my own trusty and reliable Mac, happily composing my own classic pieces (just give 'em a couple of hundred years) with the aid of top MIDI-compatible modules. But I'm aware of two things. Firstly, if there was no electricity, I'd be stuck with good for nothing, non-biodegradable chunks of tin and plastic. Secondly, every time I hit that start button the piece comes back at me exactly the same. This is just how some people want it, but when you work with highly trained musicians (who may or may not be stuck-up elitists) you have the opportunity to get a truly wonderful performance. I've always thought that the second most wonderful moment in life is between the count of "four" and the music starting.

As for musical necrophilia, good music does not diminish with the passing of time; in my opinion, it matures. Jimi Hendrix, the Beach Boys, Duke Ellington and the rest of 'em (dead or alive) sound better today than they did in their time. Likewise the genius of Bach, Mozart, Beethoven and the others in that gang are more relevant today than at any other time.

I'm a great believer in the three elements of music — rhythm, melody and harmony — but I think there should be another one: emotion. But any one of these can stir the listener into rapture. The 500,000 people who went to all-night raves last New Year's Eve were more than happy with the predominantly rhythmic "four on the floor".

Also, I must take you to task about the tedious computer experiments of the '60s. You're wrong. Check out the classic delights of An Electric Storm *by White Noise (Delia Derbyshire and David Vorhaus). Alternatively, the output from that lot at the BBC Radiophonic Workshop is still the benchmark which most scientists of sound today fail by. What a shame the top brass at the BBC, in their infinite and unparalleled stupidity, decided to close it down — although I shouldn't complain, since some of that work has come my way!*

And finally, you say that I, albeit innocently, do nothing to break down the class system which permeates the musical establishment: piffle. There are two things, in my humble but guilty opinion, which perpetrate the 'them and us' feeling between different groups of musicians: the first is success and the second is being jealous of that success. ❑

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Crosstalk

Drum Major

I've been enjoying Nicholas Rowland's drum programming series, but it has left me with a question regarding the setup of my Alesis D4. Conventional wisdom suggests that closed hi-hat, pedal hi-hat and open hi-hat should be assigned to a group so that only one can be heard at any one time. This also cuts off the open hat when appropriate.

Anyway, the use of pedal and closed hat is invalidated by this setup so I was wondering what you would suggest. My current work-around is to assign pedal and open hat to a

group, and where a pedal hat does not follow an open hat I've inserted a very low-velocity pedal hat to end the open hat. This seems to result in a realistic sound, but I have to remember to insert the low-level pedal hat after any open hat.

On the subject of hi-hats, we all seem to limit ourselves to three sounds — originally, I assume, because of the limited capabilities of the boxes we used, and now because of General MIDI. Have you ever tried using more than three sounds in a hi-hat part? The D4 has some half-open sounds but I've not managed to figure out how to use them to make a more authentic part.

Thanks for an informative series.

Graham Owen
via email

Nicholas Rowland replies: *I'm pleased to hear that you've found the series interesting. While I'm not totally familiar with the Alesis D4, the grouping function you mention is common to a lot of drum machines and sound modules. The thinking is that if they don't allow you to programme combinations of hi-hat sounds on the same beat, your results will automatically sound more realistic. But as you've said, it can be a useful way of controlling the duration of open hi-hat sounds. If the D4 allows this, you could try first ungrouping the hi-hats so that all the sounds become free agents. Then group the open hi-hat with another sound — say, a shaker — which becomes the means by which you control the length of the hi-hat in the manner you've described. Another approach — and again, I don't know whether the D4 responds to this treatment — is to control the length of open hi-hats with MIDI note off messages. You don't say what sequencer package you're using, but it should be easy enough to draw in the right note lengths. As an alternative to this, simply replace the pedal hi-hat with a similar type of sound. Again, cabasas and shakers are usually good substitutes.*

To address your second point, yes, I often use more than three hi-hat sounds in patterns. Like the Alesis D4, my venerable Cheetah MD16R also offers a half-open hi-hat. However, when it came to constructing examples for the feature, I thought that, in the interests of making the patterns as accessible to as many people as possible, I would just stick to the GM holy hi-hat trinity.

To be honest, I don't like most of the open hi-hat sounds I hear on drum machines, and more often than not I substitute the half-open sound, which I think sounds more realistic. When I do use a fully open hi-hat, it tends to be as an accent feature. For example, if I'm programming a rhythm around the basic dance pattern (four on the floor bass drum with a hi-hat on the offbeats), I would use a half-open hi-hat on the first seven offbeats of a 2-bar phrase, then maybe a fully open hi-hat on the eighth offbeat. I also tend to keep open hi-hats low in the mix: somehow they always seem to sound much louder than the closed and pedal variants. The exception to this rule is the TR808 open hi-hat sound. I occasionally use this as a feature sound in rhythms which otherwise employ 'acoustic' hi-hat samples. But these are my personal preferences. The only rule to really take seriously when programming rhythms is: if it sounds right, it is right.

I hope this helps. Thanks again for your interest in the series — I really appreciate your feedback and comments. ❑

To DI For

I've been playing bass guitar for a couple of years, but have only recently begun recording. I record my bass by plugging it directly into my Yamaha MT100 cassette 4-track and monitoring with headphones. I find that when I'm rehearsing or recording a part the bass sounds great; however, as soon as I play a recording back it sounds lifeless and dull, and significantly quieter than when I was recording. I've also tried sampling with a friend's sampler, but I still lose a lot of brightness and volume.

Am I doing something fundamentally wrong or do I simply need better recording equipment?

Ben Dalton
Poole

I wonder if you can help me? I'm looking to buy a DI box for recording my guitar on my 4-track. Have you done any product reviews recently? What's the best way of finding out about DI boxes and making a choice? I'm not very technically minded when it comes to reading brochures and so on.

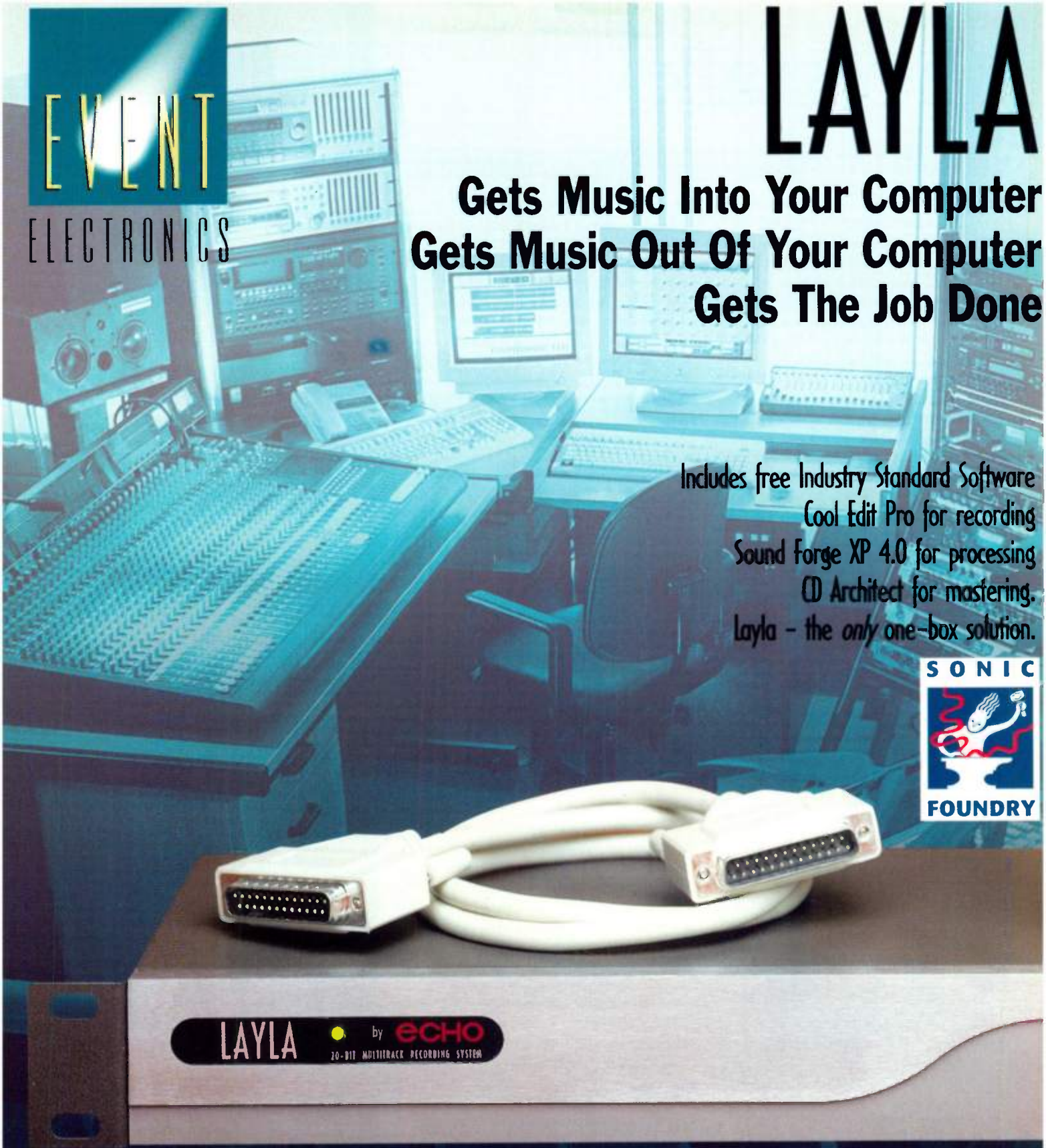
Any help would be much appreciated.

Ian Clarke
via email

Derek Johnson replies: *One answer to Ben's question can be found in Ian's: Ben probably needs a direct inject box. His problem could be due to an impedance mismatch between the bass and the MT100's line input, and a DI box will provide the necessary matching. Both Ben and Ian could do worse than check out the article* Let Me Be Direct: DI Boxes & Why We Need Them *from our April issue, which discusses all aspects of using DI boxes. It's available as a back issue from our mail order department for £5.50 including UK postage. We have reviewed various devices in the past, ranging from simple passive DI boxes, costing around £50 or £75, to esoteric valve-based devices that are virtually signal processors. Both Ben and Ian will probably be happy with a simple unit, such as the BSS AR116 Active DI Box (BSS 01707 660667), Canford Audio's active DI box (Canford Audio 0191 415 0205), EMO's E520 single or E525 dual DI (EMO Systems 0191 373 0787), or P&R Audio's DI2 passive and DI3 active DI boxes (P&R Audio 01323 849522).*

Paul White adds: *If your recording equipment is adjusted and maintained properly, what comes out should be pretty close to what goes in bar a little tape hiss. Check you're using the correct type of tape, as specified in the manual, and that the machine is properly cleaned (using alcohol, not a cleaning tape!) before each recording session. An active DI box will produce a better match between your multitracker and your guitar, resulting in a brighter sound, but if you were satisfied with the sound you were monitoring whilst recording, a DI box isn't going to solve all your problems. If, after cleaning your machine and checking the tape type, the sound still isn't good enough, you may have to consider something more sophisticated, such as one of the new digital multitrackers.*

For dirty guitar sounds, you need a speaker simulator to create that miked-up cab sound, in which case you can't better the passive Palmer Junction Box at around £79 (contact Gladden Pro Audio on 01206 303017). This will accept pedals, preamp outputs or even speaker outputs, and it plugs directly into the mic input of any mixer or multitracker. One or two of us at SOS *use them ourselves, and it's about as close to a miked-up sound as you get. Remember that a speaker simulator doesn't include overdrive or effects: it just comes at the end of the chain to emulate a miked speaker cab.* ❑



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Key audio systems

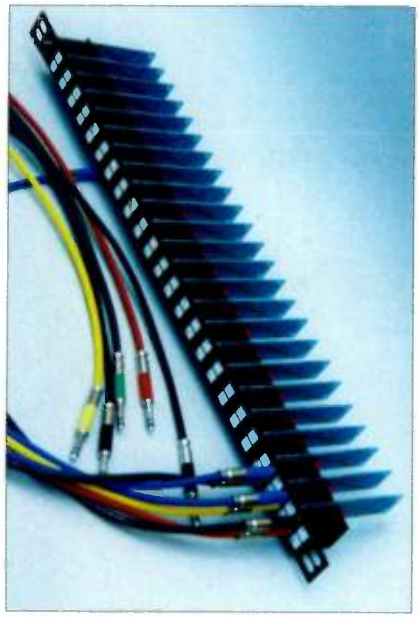
For more information contact Trish on:
Tel: 01245 344001
Fax: 01245 344002
email: info@keyaudio.co.uk

Crosstalk

He'd Rather Jack

Paul White's article about patchbays in March's *Sound On Sound* made good reading and covered the subject well, but I hope he will allow me to add a few comments which come from years of experience with these passive, but often temperamental, pieces of studio equipment.

It should be explained that there are three types of 'jack plug' audio patchbay in use, namely the domestic quarter-inch jack (be it 2- or 3-contact), known as the A-gauge jack, the old post office standard quarter-inch (or B-gauge) jack, and the bantam jack, which is a miniature version of the B-gauge. Most professional studios use B-gauge or bantam jackfields due to the solid construction of the components. These jackfields will be hard-wired at the back, either with solder connections or insulation displacement methods. Some I have seen recently are wired to high-quality multi-way EDAC connectors, allowing pre-fabrication of the wiring loom off-site before installation.



I've come across an A-gauge jackfield only once in the last 15 years and I have to say it was rather problematic. This wasn't necessarily because of the type of jack, though their low cost is probably reflected in a lower standard of construction, but rather in the use of jacks back and front of the panel. Open connectors tarnish quite rapidly and without regular removal and insertion, which wipes or scrapes the contacts, a build-up of oxide occurs which eventually leads to crackling connections. I would urge anyone installing a patchbay to solder the wires to the back using a small-diameter twin and screen cable, such as Wadsworth FST audio installation cable at around £20 for a 100m drum (Wadsworth 0181 268 7000). Two pieces of this cable will easily fit into a TRS jack to make an insert lead and, with the help of cable ties, it can be easily loomed to make a neat job. If you expect to change your rack, the tail from the jack should have some spare length to it, which can be lost in the loom until required. Even if your equipment is all unbalanced, I would recommend, if you have any thoughts of upgrading in the future, that you wire your installation with twin and screen cable with 3-pole jacks. Changing a few connectors and the designation strip is a lot quicker than wiring a whole new installation from scratch. Second-hand B-gauge patchbays are often a good buy from audio dealers at about £50 for a 1U panel with two rows of 20 or 24 jacks. These dealers can often supply the plugs, though an A-gauge plug will normally fit a B-gauge socket (but not the other way round!). Proper cleaning equipment for patchbays is available from companies such as Canford Audio (0191 415 0205) and I agree with the comment about mounting the panel vertically to keep out dust and foreign objects.

Finally, a thought on the patch leads themselves. I have a selection of lengths, to keep the amount of knitting down to a minimum. Also, when I started in audio many years ago, yellow patchcords were phase reversed (ring and tip connections reversed at one end). I have extended this so that any phase reverse lead in my kit is yellow, be it jack or XLR. It's gratifying to note that Canford still list and sell their yellow patch leads as phase reversed and I would urge anyone using patchbays to follow this standard.

I look forward to the article on digital patching! Keep up the good work.

Andrew Groves
via email

Paul White replies: *Thanks for your comments and additional information. As you can probably imagine, we tend to stick to talking about A-gauge jacks in the typical home MIDI studio, simply because quarter-inch jacks are the common currency of musicians, but I agree with you entirely as to the questionable reliability of some of these patchbays, due to contact tarnishing. Hard-wiring the back of patchbays also makes sense, but there are still a lot of studio owners who won't pick up a soldering iron (and I have tried to encourage them!).*

Digital patching — now there's another can of worms! ❑

SPIRIT DEALER LIST

ABERDEEN	RnB Music	01224-210 121
ALTRINCHAM	Concert Systems	0161-927 7700
BARNET	Digital Village	0181-440 3440
BARNSTAPLE	Soundpad	01271-23686
BELFAST	Marcus Music	01232-322871
BINGLEY	Spectre Sound	01274-568843
BIRMINGHAM	Musical Exchanges	0121-236 7544
BIRMINGHAM	Q Music	0121-643 4655
BIRMINGHAM	London Microphone Centre (LMC)	0121-359 4535
BLACKPOOL	Tower Music	01253-27359
BOURNEMOUTH	Eddie Moor's Music Ltd	01202-395135
BRIGHTON	Rainbow Sound	01273-624048
BRISTOL	X Music	0117-9734 734
BURNLEY	Dawsons Music	01282-425829
CAMBRIDGE	Music Village	01223-316091
CARDIFF	Gamlins Music Centre	01222-220828
CARLISLE	AVI	01228-45599
CHESTER	Dawsons Music	01244-348606
COLCHESTER	Axe Music	01206-765 652
CORK	Russell's Music	00353-21 273 912
COVENTRY	Musical Exchanges	01203-635766
CREWE	Music Control	01270-883779
DERBY	Play It Again Sam	01332-348156
DONCASTER	Electro Music Services (EMS)	01302-369999
DOUGLAS	Ken Mitchell Music	01624-611919
DUBLIN	Control Techniques Ireland (CTI)	003531-4545400
DUNDEE	Sound Control	01382-225619
DUNFERMLINE	Sound Control	01383-732273
EASTBOURNE	Bonners Ltd.	01323-639335
EDINBURGH	Sound Control	0131-557 3986
EDINBURGH	The Warehouse	0131-555 6900
FAREHAM	The Audio Connection	01329-235566
GLASGOW	The Warehouse	0141-950 1757
GLASGOW	Sound Control	0141-204 0322
GRIMSBY	PSS Music	01472-343211
GUILDFORD	Andertons Music Co.	01483-456777
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HIGH WYCOMBE	Percy Priors	01494-528733
INVERNESS	The Music Station	01463-255523
KINGSTON	Earth Music	0181-546 9877
KIRKCALDY	Sound Control	01592-260293
LANCASTER	Low Fold Audio	01524-847 943
LEEDS	Carlsbro	0113-2405077
LEICESTER	Carlsbro	0116-2624183
LIVERPOOL	Ad Lib	0151-486 2214
LONDON	Turnkey	0171-379 5148
LONDON	London Microphone Centre (LMC)	0181-743 4680
LONDON	The Synthesizer Company (TSC)	0171-258 3454
LONDON	Gradav Theatre Services	0181-886 1300
LONDON	Raper and Wayman	0181-800 8288
LONDON	HHB Communications Ltd	0181-962 5000
LONDON	Studio Spares	0171-482 1692
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MANCHESTER	A1 Music Centre	0161-236 0340
MANCHESTER	Sound Control	0161-877 6262
MANSFIELD	Carlsbro Academy of Sound	01623-651633
NEWCASTLE-UPON-TYNE	Sound Control	0191-232 4175
NORTHAMPTON	Willow Communications	01604-21525
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NOTTINGHAM	Carlsbro	0115-9581888
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PETERBOROUGH	B&H Sound Services	01733 223 535
PETERBOROUGH	The Live Music Shop	01733 555505
PORTSMOUTH	Nevada Music	01705-660036
PRESTON	A1 Music Centre	01772-204567
RINGWOOD	The M Corporation (TMC)	01425-470007
RINGWOOD	AJS Theatre & Lighting Supplies	01425-480 698
ROMFORD	Music Village (Chadwell Heath)	0181-598 9506
SHEFFIELD	Carlsbro Academy of Sound	0114-2640000
SHEPPERTON	Marquee Audio	01932-566777
SOUTHEND-ON-SEA	Honky Tonk	01702-619615
STEVENAGE	Music Solutions	01438-750751
ST.HELENS	Dawsons Music	01744-730424
ST. HELIER	East Coast Music (ECM)	01534-80575
STOCKPORT	Axis Audio Systems	0161-474 7626
STOCKPORT	Dawsons Music	0161-477 1210
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STOKE-ON-TRENT	Music Control	01270-883779
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TUNBRIDGE WELLS	JB's Music Stores	01892 515 007
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		0181 744 1050
WAKEFIELD	KGM Studio Specialists	01924-371766
WARRINGTON	Vamps	01925-632591
WASHINGTON	Dawsons Music	0191-416 2385
WATFORD	Active Sound	01923-246 282
WIGAN	Dawsons Music	01942-244680
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Check out the Spirit Website: http://www.spirit-by-soundcraft.co.uk

shape of things to come

by Derek Johnson

Now we are 02...

Tascam's new Porta 02 cassette multitracker has been released at the very user-friendly price of £150. The easy-to-use 4-track offers a 4-channel mixer section with level and pan, two mic/line inputs with trim control, and two tracks of simultaneous recording. There's not much else to be said about the Porta 02: it's compact, it's cost-effective, and it's got an attractive paint job!

A Tascam, 5 Marlin House, The Croxley Centre, Watford, Hertfordshire, WD1 5YA.
T 01923 819630.
F 01923 236290.
W www.tascam.com

All hands on decks!

Closet DJs are invited to come out and attempt to win some prizes, thanks to Nottingham's Millennium Music Software and Arnold & Carlton College. The *Steal The Wheels National DJ Championships* begins at 8pm on Tuesday 26th May at Sam Fay's, The Great Northern Close, London Road, Nottingham, with weekly heats leading up to a grand final. And what do the winners get? Top prize is two years of free tuition on the Arnold & Carlton College Music Technology/DJ Skills course, which normally costs £3500. Also up for grabs is a Millennium PC system, complete with Steinberg *Cubase VST* and *ReBirth*, Mixman *Virtual DJ* software and 16-bit soundcard, altogether worth £2000. Runner-up prizes include £300 worth of assorted sample CDs from Time & Space and Zero G, two pairs of AKG headphones, worth £99 each, and four copies of *Virtual DJ*, worth £40 each.

The competition is open to anybody, whether newcomers or more experienced performers. A panel of judges, including well-known DJs and nightclub promoters, will be on hand to judge entrants' DJing skills, as well as audience reaction and dancefloor action, and a "surprise celebrity guest" is promised to help judge the grand final. Entry forms can be obtained by sending your name and address to Millennium or by dropping into Millennium or Arnold & Carlton College.

A Millennium, 172 Derby Road Nottingham NG7 1LR.
T 0115 955 2200.
F 0115 952 0876.
E sales@millennium-music.co.uk
W www.dj-net.demon.co.uk

A Arnold & Carlton College, Bath Street, Nottingham, NG1 1DA.

24 Tracks the MOTU way

Mark of the Unicorn, noted for their MIDI sequencing products and MIDI interfaces, are making a surprise return to the soundcard market. (Some of you may recall the NuBus Digital Waveboard of some years ago.) Now MOTU are jumping into the PCI soundcard market, but they're doing it with a difference. For £995, their 2408 system offers a PCI card that interfaces with a 1U rackmounting breakout box. Not only does this unit provide eight analogue inputs and outputs, but it also comes with three sets of Alesis ADAT digital optical ins and outs and three Tascam DA88 TDIF in/out connectors as standard. Any three of these sets of connectors can be used at once, for a maximum of 24 simultaneous inputs and outputs. You can mix and match the connectors in any way, so you could connect an ADAT and a DA88 and still use the analogue ins and outs.

There's a main stereo analogue output, and three sets of S/PDIF digital outs: one is for the main stereo mix, and the others serve as stereo ins/outs. In addition, BNC word clock connectors are provided for synchronisation with standard word clock devices; sample-accurate ADAT and DA88 sync is possible via the PCI card. And if that's not enough for you, it's actually possible to hook up *three* breakout boxes to the PCI card, for a total of 72 simultaneous tracks.

Included with the 2408 system is a full-featured audio workstation software package for Macs that includes multi-channel waveform editing, automated virtual mixing, graphic editing of ramp automation, real-time effects plug-ins with 32-bit floating-point processing, crossfades, support for third-party audio plug-ins (in the MOTU Audio System and Adobe Premiere formats), background processing of file-based operations, sample-accurate editing and placement of audio, and more. The 2408 system can also be used with MOTU's *Digital Performer* audio sequencer software package (the latest version was reviewed in March 1998).

A MusicTrack, 19a High Street, Shefford, Bedfordshire SG17 5DD.
T 01462 812010.
F 01462 814010.
W www.motu.com

Retro makes the grade

The Bitheadz web site.

New American software house Bitheadz have introduced a virtual synth for Power Mac users. The *Retro AS1* is claimed to be "the first fully programmable, professional-quality, analogue [style] synthesizer for the Macintosh". The software has polyphonic capability, an arpeggiator and real-time input, with all the functionality of a real-world synth at a US price of $259. BitHeadz CEO Steve O'Connell notes: "We've taken '60s technology and spiffed it up for the '90s. With the *Retro AS1*, the user gets the best of both worlds — great sound quality plus effects and an arpeggiator. Being a musician myself, it was important to me to design a 'musician friendly' interface, and I also made sure that the *Retro AS1* will painlessly integrate with a user's current MIDI setup."

The software comprises a synthesizer engine, editor, control panel, mixer application, 1000 sounds, a direct serial port MIDI application, OMS driver, FreeMIDI driver and an on-screen keyboard. It features 24-bit, 44.1kHz sound quality, up to 16 voices (CPU dependent), unlimited presets, and stereo output. The software also boasts complete matrix modulation controls, multiple filter types, multiple oscillators, insert and global effects, and 16-part multitimbrality. The built-in arpeggiator actually imports and exports in MIDI File Format. When UK availablity is announced, we'll let you know.

A Bitheadz, 4400 Capitola Road, Suite 202, Capitola, CA 95010 USA.
T 001 408 465 9898.
F 001 408 465 9899.
W www.bitheadz.com

Launch of the dance

London hi-tech retailers Turnkey recently launched their new Loopstation dance music technology division with visits from the legendary Robert Moog (see our interview with Dr Moog starting on page 46 of this issue) and Orbital's Paul Hartnoll. The new Loopstation division features over 2000 square feet of space given over to DJ consoles, samplers, drum machines and hard disk recorders. Also on display is a huge collection of vintage synths integrated into a 10-metre-wide "mega-synth", which is actually available for customers to use: visit Loopstation, create a sound with the mega-synth, and take samples away with you.

A Loopstation, 114-116 Charing Cross Road, London, WC2H 0DT.
T 0171 379 5148.
F 0171 379 0093.
W www.turnkey.uk.co

A3000 looping good

Yamaha have released a v2 operating system update for the A3000 sampler (reviewed in July 1997's *SOS*). New performance, editing, and utility facilities have been added that "make the A3000 even more powerful and even easier to use". Major new features include:

- Loop Remix, which automatically rearranges a looped breakbeat into new variations.
- Loop Divide, which automatically slices up a breakbeat pattern and maps the pieces to successive keys along the keyboard.
- New filter types: 10 additions bring the total to 16. The collection now includes various low-pass, high-pass, band-pass, band-reject and peaking options.
- MIDI-controlled LFO: this new LFO, sync'able to MID clock, can be set up separately for each program.
- Effect routings: new serial and parallel options are joined by the ability to route each effect to any of the assignable outputs.
- New modulation matrix destinations and sources.

In addition, sample management is enhanced by new automatic mapping routines, and more copy, mapping and offset routines. v2.0 is rounded off with a new safer disk-saving routine, faster loading from both floppy and SCSI disks, as well as improved SMDI transmission, a "better layout" of Easy Edit, with more parameters on screen, and improved import/export of Akai samples, with support for Roland and AIFF format samples. Data can now be saved across multiple floppies, and larger SCSI disks can be used — up to 8Mb. A DIY upgrade kit will soon be available for purchase by v1 owners.

A Yamaha-Kemble Music (UK), Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL.
T Brochure Line 01908 369269.
F 01908 368872.
W www.yamaha.co.jp/product/homeenglish/index.html

SOS can be reached at sos.feedback@sospubs.co.uk

Our web site address is www.sospubs.co.uk

shape of things to come

The software required to join in Res Rocket's live Internet jams is now completely free! Previously, it cost US$4.95 a month to get the software and join in the activities but now, with membership standing at 4000 people, advertising and sponsorship will be able to subsidise the system. The software can be downloaded from www.resrocket.com.

Keyboard player Rick Wakeman was recently added to the list of endorsees for Generalmusic's Pro2 Real Piano. Rick said: "The feel and action of the keyboard, an often-overlooked part of keyboard manufacture these days, is really excellent."

T Generalmusic UK 01827 312230.

Recording musician Blue Flux, who has appeared more than once in our Demo Doctor pages, has formed his own record label, Enthalpy Records. The label will act as a vehicle for his five currently available CDs, as well as providing a launch pad for other independently minded acts. The launch of the label coincides with the recent completion of *In Flux*, the Blue Flux web site, where visitors can listen to audio clips from all available albums, find out more about Blue Flux and the new record label, and order CDs. The site also features a comprehensive page of studio and recording tips and details, two picture libraries with free download facility, and a large 'Cool Links' section.

W freespace.virgin.net/thomas.kunze/index.htm

Sounds OK, UK distributors for Voice Crystal sample CDs, are offering all Voice Crystal CDs at the special price of £24.95 each including VAT (normally £44.95) until May 30, 1998. Titles include *Liquid Guitar*, *Maximum Impact*, *Cyclotronic Resonator* and more.

T 01276 682313.
E soundok@cableol.co.uk

World Control's Ultra Control analogue sound series for Kurzweil's K2000 and K2500 has been reduced in price. The *Nordlead*, *303*, *Jungle Kits* and *Prophet Pad* sets now cost £27.50 each in the UK (£33 or US$55 overseas).

T 01924 785945.
W www.wcontrol.force9.co.uk

SOS can be reached at sos.feedback@sospubs.co.uk or visit www.sospubs.co.uk

HHB pump out the volume

It's that time again: the new catalogue from HHB Communications is out now. The 1998 catalogue runs to 168 pages, lists over 1300 products, and is printed in full colour. It's free to qualifying UK audio pros and organisations. Once again, the HHB service department has provided a selection of technical tips, and comments fom HHB staff are augmented by interviews with pro audio manufacturers.

A HHB Communications, 73-75 Scrubs Lane, London NW10 6QU.
T 0181 962 5000.
F 0181 962 5050.
E sales@hhb.co.uk
W www.hhb.co.uk

Mad about the Boy

After a few years in the MIDI building block file business, Keyfax have made a surprise move into hardware. Phat Boy is a MIDI controller, equipped with 14 knobs, that provides hands-on control over Roland GM/GS and Yamaha GM/XG sound modules and Steinberg's *ReBirth RB338* software — just the thing if you feel the urge for some real-time tweaking. The knobs are hard-wired to the appropriate controllers that allow you to play with — and record to a sequencer — the following parameters over MIDI: filter cutoff; resonance; portamento; envelope attack; envelope decay; envelope release; vibrato depth; vibrato speed; vibrato delay; pan; volume; reverb level; chorus (FX); MIDI channel 1-16. Phat Boy comes with a disk of custom MIDI samples from Twiddly.Bits, and should retail for £159.95 including VAT.

A Keyfax Software, PO Box 4408, Henley-On-Thames, Oxon, RG9 1FS.
T 01491 577147.
W www.gmedia.net/keyfax

Strong Stirling takes on the Germans!

Stirling Audio have taken on the exclusive UK distribution of products from SPL (Sound Performance Lab), the German signal-processing company. MD Andrew Stirling notes: "We knew all SPL's products, such as the Vitalizer and Loudness Maximizer, were innovative and exceptional performers... We feel that SPL fits perfectly into our expanding pro-audio portfolio."

SPL's move to Stirling coincides with the launch of "a world first in dynamic signal effect processing". The Transient Designer introduces SPL's Differential Envelope Technology, which provides much finer control over transients and sustain. Transients can be accelerated or slowed down and sustain prolonged or shortened, while all time constants are automatically adjusted for maximum musicality. The Transient Designer can be used to enliven samples, and has four independent channels, with which interesting panorama effects can be created using the link controls. For example, the attack of a bass drum or sample can be given emphasis to increase its power and penetration. The sustain of a snare or reverb can be damped down musically, to clean up a mix for more transparency, while acoustic or electric instruments can be mellowed, to reduce their attack.

A Stirling Audio, Kimberley Road, London NW6 7SF.
T 0171 624 6000.
F 0171 372 6370.
E sales@stirlingaudio.com
W www.stirlingaudio.com

Our customers' comments

"Ghost is Killer! Classic fat British EQ like you've always dreamed of. And the faders are awesome...the taper on them is as smooth as anything I've ever used. Incredible. Ghost has just about everything I look for in a quality console; great tone....great feel...looks...even the name! I'd swear you custom made this for me. I could not have picked a better console for sound, features and feel."

Geno Porfido, Boulevard Recording Co. New Milford, NJ

"Other consoles I've worked with in the past just couldn't deliver the levels of punch and clarity I felt the music deserved. I never have this problem with my Soundcraft Ghost. The Ghost gives me the flexibility I need over a wide range of frequencies and has the body and warmth to really bring my music to life."

Johnathan Moffett, Drummer with Michael Jackson and Madonna

"After the first mix I did, I realised I was in a whole new league. This thing sounds beautiful. Very silky in the high end and full in the lows. The EQ is totally cool and the board has a quality feel to it. I know of nothing that touches it in its price range and I have been recommending Ghost for months to anybody who's looking for a console."

Garth Webber, Red Rooster Studio, Berkeley CA

"I've worked on many competing 8 bus consoles and none can compare to the Ghost in features, ergonomics and, most importantly, sound. The Ghost, simply put, sounds warm and musical - you don't have to work hard to get great sounding mixes on this board. The EQ is very flexible and we compared the mic preamps (using a Neumann U-47) to the Neve 1066s in our studio. We were very surprised at how favourably they compared to these megabuck classics."

Peter Thorn, What If? Productions.

Just about the only sound as sweet as our EQ!

Let us know what you think about the Soundcraft Ghost by visiting our web site at http://www.soundcraft.com or via e-mail to info@soundcraft.co.uk

Ghost

Soundcraft

H A Harman International Company

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shape of things to come

education corner

LOWESTOFT COLLEGE

Lowestoft College have provided students of their BTEC National Diploma in popular music/music technology with a new music technology suite. The Norwich branch of Academy of Sound was instrumental in specifying and supplying the suite, which comprises 12 computer music workstations based around Korg and Yamaha keyboards connected to Macs and PCs. In all, 50 students will have access to the workstations during the course.

A Lowestoft College, St. Peters Street, Lowestoft, Suffolk NR32 2NB.
T 01502 583521.
F 01502 500031.
E info@lowestoft.ac.uk
W lister.lowestoft.ac.uk/

T Academy of Sound 01603 666891.

CANTERBURY COLLEGE

Canterbury College is now offering a two-year full-time BTEC National Diploma in Music Technology. Modules include electronic music production, recording and production techniques, audio electronics and multimedia. The new Music Technology facility has 20 workstations, all running Steinberg's *Cubase VST* with Korg X5D synthesizers; seven workstations are further equipped for synchronised analogue multitrack recording. Digital audio is a particular focus of the course and material produced either through the application of *Cubase VST* or Digidesign Pro Tools may be mastered onto DAT, MD or CD.

Planned developments for 1998 include the establishment of two new courses: a one-year, full-time First Diploma and a 10-week evening course. In addition, the establishment of a recording studio will augment the resources for Music Technology within the college.

A Admissions, Canterbury College, New Dover Road, Canterbury CT1 3AJ.
T 01227 811260.

ANDERTON'S MUSIC EDUCATION CONSULTANTS

Due to expansion over the last year, Anderton's Music Company's education department has now become a dedicated division, called Music Education Consultants. MEC aims to provide schools and colleges with a one-stop solution for advice on music technology in the National Curriculum. The department, which can advise on educational discounts, has specified, designed and built facilities ranging from simple 4-track studios, though concert halls, to digital studios costing a quarter of a million pounds. MEC is an INSET (IN SErvice Training) centre for teachers and has also just become a Steinberg Training Centre. Software-based courses cover sequencing, scorewriting and hard disk recording. Courses covering multitrack recording techniques and sequencing aimed at A-level Music Technology teachers have also been run. A free catalogue outining MEC's services is available.

A Andertons Music, 58 & 59 Woodbridge Road, Guildford, Surrey GU1 4RP.
T 01483 456888.
F 01483 456722.
E mec@andertons.co.uk

ST HELENS COLLEGE

Students studying BTEC Music Technology at St Helens College are planning to produce and release a CD compilation of unsigned dance acts. The release of *Digital Nation*, as the CD will be called, forms part of the Integrated Studies module of the course, which is designed to benefit students by giving them first-hand experience in the design, marketing and selling of a commercial product. The module also provides hands-on experience of recording, producing and mixing in a live studio environment. To fill the CD, the students are looking for demos in any dance style, no more than five minutes in length, on DAT or Minidisc. Send your track, together with contact details, to the college.

A Digital Nation, Room J226, SKB Building, St Helens College, St Helens, Merseyside WA10 1HS.
T 01744 623221.
W www.jill.u-net.com

SAE TECHNOLOGY COLLEGE

SAE have announced two partnerships. First of all, after more than a year of preparatory work, SAE has negotiated a partnership with the University of Middlesex. The University has agreed to validate two new degrees to be run by SAE Technology College, London. These will take the form of Bachelor of Arts (Hons) in Recording Arts and Multimedia Arts. Initially, the courses will be available in London, Munich and Sydney. Students who have completed current SAE diplomas in audio and/or multimedia will have the option to carry certain credits towards the degree.

Secondly, the school has chosen to use recording media from Quantegy, following an extensive evaluation of Quantegy products.

A SAE Technology College, United House, North Road, London N7 9DP.
T 0171 609 2653.
F 0171 609 6944.
W www.sae.edu

The Digital Nation web page, as produced by music students at St Helens College.

JAMES WATT COLLEGE

For the past 10 months, HND Music Technology students at Greenock's James Watt College of Further & Higher Education have been working on an album of up-and-coming Scottish bands. Initially, ads were placed in local papers for demos, and students voted for the six best. These six bands were then recorded by students at the college's digital studio. This was only installed in 1996, and includes much state-of-the-art equipment: two Yamaha 02Rs, two Alesis ADAT XTs, Tascam DA60 DAT, Digidesign Pro Tools system, and plenty of signal processing, synths and samplers. The project had the dual benefit of giving students a chance to work on a commerical release, and providing an outlet for as-yet unsigned talent. The CD is priced at £10, and is available locally. Contact the Music Technology department of the college if you're out of the area.

A James Watt College, Finnart Street, Greenock PA16 8HF.
T 01475 724433.
W www.jameswatt.ac.uk:80/~pquinn

ROSE BRUFORD COLLEGE

Stuart Roslyn, a final-year student on Rose Bruford College's new Music Technology degree course, will be amongst the first to graduate this July. Yet Stuart is already developing a career in TV music: he produced all the music for *Mad Cows and Englishmen*, a BBC2 series that aired during February, and has written music for Channel 4's *Despatches* and a number of TV ads.

A Rose Bruford College, Burnt Oak Lane, Sidcup, Kent DA15 9DF.
T 0181 300 3024.
F 0181 308 0542.
E admin@bruford.ac.uk

SANDWELL COLLEGE

Sandwell College, located to the north of Birmingham, has recently revamped its media centre. The new

Sandwell College.

facility is now equipped with two Yamaha 02R digital desks, a Yamaha 03D digital desk, Tascam DA88 and DA38 digital 8-tracks, and a Tascam DA30 MkII DAT machine. The hardware was supplied by Birmingham's LMC Audio Systems. Other equipment includes Yamaha REV500 effects processors, Yamaha P1500 power amps and a Digidesign Pro Tools system.

A Sandwell College of Further and Higher Education, Woden Road South, Wednesbury, West Midlands WS10 0PE.
T 0121 556 6000.

DARNALL MUSIC FACTORY

Darnall Music Factory is a community music project based in the east end of Sheffield. It targets the young unemployed and offers training and employment opportunities in the music industry, as well as recreational and cultural activities. At its heart are a 16-track studio, pre-production room, IT facilities, rehearsal space, classrooms and a library. Courses offered include sound engineering, music technology, music industry studies and musicianship. A range of short courses is also available.

A Darnall Music Factory, Darnall Education Centre, Darnall Road, Sheffield S9 5AF.
T 0114 244 4603.
E frank@darnall.demon.co.uk

MUSIC LAB

Audio retail and hire company Music Lab, in conjunction with Digidesign, has opned a Pro Tools School. Regular sessions will be hosted by Music Labs' Martin Bell (their resident Mac guru) and Digidesign's Cliff Smith at Music Labs' London demo facility. The pair will be showing how to get the best out of the latest Pro Tools systems, and highlighting various plug-ins and peripheral equipment.

A Music Lab, 72/76 Eversholt Street, London NW1 1BY.
T 0171 388 5392.
F 0171 388 1953.
E info@musiclab.co.uk
W www.musiclab.co.uk

THE RECORDING WORKSHOP

The Recording Workshop, which has been providing recording courses for small groups for eight years, has moved to larger premises in north Kensington, London. Three studios are now available to teach live multitrack recording, Steinberg's *Cubase* sequencer package, sampling, synthesis, and advanced production.

T 0800 980 7452.
E recordwk@dircon.co.uk

LONDON GUIDHALL UNIVERSITY

Tyrell Corporation, noted non-linear audio and video systems specialists, have hired their fourth London Guildhall University student. The Guildhall-recruited staff have all studied either a BSc (Hons) degree or BTEC Higher National Diploma in Musical Instrument Technology at the University's Sir John Cass Department of Design & Technology. The BSC (Hons) course is a three-year full-time degree with a focus on both acoustic and electronic music technologies. The BTEC HND is a two-year full-time course which offers two paths: electronics for the music industry or an acoustic instrument specialisation.

A London Guildhall University, 41-71 Commercial Road, London E1 1LA.
T 0171 320 1840.
F 0171 320 1830.
W www.lgu.ac.uk/mit

T Tyrell Corporation 0171 343 5500.

SFIDA CREATIVE LEARNING

If you want to break into the film and TV music field, you'll find that it's both highly competitive and also requires some very special skills. *Music for the Media*, Britain's first home-study course for film and TV composers, won't guarantee to get you the work, but it will help to hone your skills so that you'll know what's required of you when you *do* get your first commission. The course has been formulated by TV composer Guy Michelmore, and consists of 10 units which take students from their first corporate video, through signature tunes and wildlife documentaries, to scoring a short feature film. The supplied material includes video tapes (with examples for students to score) and audio cassettes featuring interviews with well-known composers such as Michael Nyman and Debbie Wiseman. Your assignments are marked by a personal tutor — all tutors are working composers — and the course as a whole is printed to order, personalised and tailored to a student's needs. The cost is £399 including VAT.

A SFIDA Creative Learning, 35 Binden Road, London W12 9RJ.
T 0181 749 2828.
F 0181 740 7727.
E sales@sfida.com
W www.sfida.com

ISLINGTON MUSIC WORKSHOP

Islington Music Workshop's mission to provide affordable training on high-quality equipment continues with the addition of Ultimation moving-fader automation to their SSL SL4000 G+ console. IMW claim that they are the only school where you can train on the latest SSL 4000 G+ technology and gain a recognised vocational qualification; training packages start at £450 for 38 weeks.

A Islington Music Workshop, 44 Peartree Street, London EC1V 3SB.
T 0171 608 0231.
F 0171 490 0120.

Opcode go to Xtremes

Opcode have launched a new cross-platform MIDI interface. The 1U rackmounting Studio 128X is compatible with both Macs and PCs and is equipped with eight MIDI inputs and outputs, for up to 128 channels of simultaneous MIDI input and output, supports SMPTE synchronisation, and features full MIDI patchbay capabilities. Up to four Studio 128X units can be linked together to provide 512 MIDI channels; linked systems can also include Opcode's Studio 64, Studio 64XTC and Studio 4 interfaces. The Studio 128X automatically detects what kind of computer it's connected to and changes its settings accordingly. For synchronisation, the 128X can read and write SMPTE timecode in all formats; MIDI Time Code and MIDI Clock are also supported.

As a MIDI patchbay, the Studio 128X offers extensive routing and merging capabilities. Any in, or combination of ins, can be directly routed to any out(s). On-board MIDI filtering is available, and eight user memory locations are provided for easy storage of patchbay setups. Stored configurations can be instantly recalled from the front panel of the 128X or remotely via computer. Other features include an additional two pairs of MIDI Ins and Outs on the front panel, a 'Peripheral Thru' switch to provide access to printers and modems without rewiring, and battery backed-up memory.

A SCV, 6-24 Southgate Road, London N1 3JJ.
T 0171 923 1892.
F 0171 241 3644.
E mail@scvlondon.co.uk
W www.scvlondon.co.uk
W www.opcode.com

shape of things to come

Seriously Dodgy

Sennheiser have signed Brit popsters Dodgy as official endorsees for the new Evolution series of stage mics. The band will soon be supplied with a complete kit of Evolution mics, and have been working both on anc off stage with a selection of Sennheiser and Neumann high-end mics.

A Sennheiser UK Ltd, 3 Century Point, Halifax Road, High Wycombe, Bucks HP12 3SL.
T 01494 551551.
F 01494 551550.

Korg Keys

Korg's new N1 merges the 88-note weighted keyboard used by their SGproX stage piano with a synth engine based on the N5 (reviewed in March 1998). The sound ROM includes 18Mb of samples; the first 12Mb covers everything from acoustic instruments to synth waveforms, just like the N5, while the remaining 6Mb provide 35 new waveforms, including a stereo sampled piano, new electric pianos, and more.

Korg's interactive music workstation range also has a newcomer in the i30; the sound source is based on 18Mb of sample ROM, there are two multi-effects units on board, and the sequencing/arrange mode includes a large selection of presets, with plenty of room for customisation.

A Korg UK Ltd, 9 Newmarket Court, Kingston, Milton Keynes MK10 0AU.
T Brochure Line 01908 857150.
F 01908 857199.
W www.korg.com

Signex socket to 'em

The new Isopatch patchbay from Signex has been redesigned. The CPJ48 offers two rows of 24 standard jacks and has a fully enclosed design to keep out contaminants. All sockets are mounted on two horizontal PCBs, which eliminate internal wiring and provide extra rigidity. All sockets are supplied isolated, but each channel can easily be full- or half-normalled with a blob of solder. The CPJ48 is available in three flavours: rear jacks, £116.03 including VAT; rear phono sockets, £110.74; or rear solder tags, £94.29.

A Isotrack, 21A Hankinson Road, Bournemouth, BH9 1HJ.
T 01202 247000.
F 01202 247001.

Cycling '74, the company behind the *MSP* signal processing object set for Opcode's *MAX 3.6* programming environment, have announced a nifty new trick. Users can now use *Cubase VST*-compatible plug-ins from within *MSP*, or use *MSP* to create their own plug-ins. *MAX 3.5* is needed to create and edit *MSP* applications, but *MSP* itself can be downloaded from the Cycling '74 web site; full authorisation costs US$295. *MSP* can run with a Power Mac's audio hardware, and also supports PCI audio cards from Digidesign and Sonorus. Look out for support for Lucid Technology, Korg and Emagic cards in the future.
W www.cycling74.com

New for the desktop are Yamaha's YSTM100 multimedia speakers (£119 a pair). Designed for computer users, the speakers offer a ported wood cabinet, and use a 1.5cm tweeter and 9cm woofer. Frequency response is quoted as 50Hz-20kHz.
T Brochure Line 01908 369269.

Kevin Lightner, the man behind the entertaining synth web site Synth Fool, is offering an unusual modification for Roland's classic TB303 Bassline. If you can stand having your valuable baby altered, check this out: for a fatter-sounding 303, Kevin's mod adds sub-octave VCO outputs. Two small three-position switches mix in a signal one or two octaves below the 303's main output, at half or full volume. Nothing else is changed regarding the 303's sound or operation. It's priced at US$99.95, plus shipping and handling. Check out the Synth Fool web site for further details.
W 222.synthfool.com/phat303.html

Users of Allen & Heath mixing consoles now have a club of their own. The Independent Allen & Heath Association, devoted to all Allen & Heath consoles from 1970 to the present day, has been formed to provide members with information and advice on A&H consoles, and to give them an opportunity to share ideas, tips and experiences. Membership benefits include discounted technical services, cut-price equipment insurance, exclusive merchandise, free classified ads, a quarterly newsletter giving in-depth coverage of A&H mixers, and more. The Association has also set up its own web site, with "member only" access to an on-line forum.
A IAHA, PO Box 26, Redruth, TR15 1YG.
E iaha@allenandheath.com
W www.allenandheath.com

K5000

ADDITIVE POWER

Over 100 NEW UK Patches!

K5000S

Additive synthesis with up to 64 harmonics per source

- Unique 128 band formant filter
- 4Mb of PCM samples
- Up to 6 sources per patch (sources can be either pcm or additive)
- Hi-pass and multipole low-pass filter
- 2 LFO's
- 2 envelopes
- 4 individual effect processors (37 effects including delay, reverb, chorus etc)
- 4 outputs
- Graphic Eq
- Excellent programmable 40 pattern arpeggiator
- Portamento
- 32 note polyphony
- 18 real time controls
- 4 real time controls can adjust 2 parameters (ie add harmonics while closing the filter etc)
- 61 quality keys

K5000R

2u rackmount version of K5000S. Does not include real time macro controls

K5000W

The workstation version includes an additional 4Mb of PCM samples and a 50000 step, 40 track sequencer with 32 midi channel support

Did you know that if you break down any sound to its individual components, you will end up with a collection of sine harmonics?

Additive synthesis was developed to emulate the way nature creates sounds by adding harmonics with different envelopes. This most natural and expressive method for generating sounds is the basis of the Kawai K5000 series of synths.

Great real time controls, a cool filter and excellent effects adds to the power of K5000. The included editor for mac and pc makes it even easier to program your own sounds.

KAWAI

ARBITER PRO AUDIO
a division of ARBITER GROUP PLC, Wilberforce Rd. London NW9 6AX
Tel: 0181 207 5050 • Fax: 0181 207 4572 • Web: www.arbitergroup.com

shape of things to come

Label on Line

Heavenly Music are well known for their MIDI song files and MIDI building-block files. However, owners Joe and Pauly Ortiz are also experienced musicians, with major-label background on their CV. They are now spending time on their own music, starting their own label and promoting it via the Heavenly web site. The site will be streaming previews of forthcoming releases of six new albums from four acts on the label's roster, using Yamaha's all-new *SoundVQ* audio compression technology. You'll need the *SoundVQ* player to hear the samples at their site. The player can be downloaded free from a link to Yamaha, where a *SoundVQ* encoder is also available. Further details from the Yamaha *SoundVQ* site at www.yamaha.co.jp/english/xg/SoundVQ/. Heavenly's record release dates and other details are at www.ortiz.demon.co.uk/soundvq.htm.

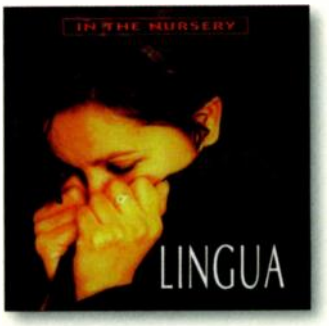
Heavenly aren't neglecting their MIDI file business: *Funkenstein* features over 40 of the greasiest drum beats ever heard on MIDI file, with full on-disc documentation. All the funk is there, from James Brown to Tower of Power-style patterns, fills and breaks. As with HM's other building block products, you can easily paste these patterns into existing material or use it as a foundation for fresh ideas. The introductory price is £14.99.

Other news includes a price cut for Heavenly's AWE SoundFont collections, from £49.99 to £39.99 plus postage and packing, and the release of a tutorial CD-ROM for Steinberg's *Cubase*, which builds on Heavenly's education experience with this popular sequencer. Essentially a book in HTML format (readable by web browsers such as Netscape *Navigator* or Microsoft *Explorer*), *Cubase Unleashed* "discloses virtually all of the trade secrets" used by Heavenly to produce their library of MIDI files. The disk is PC- and Mac-compatible, and includes dozens of illustrations, example files and MIDI files, as well as hundreds of WAV files. It's priced at £24.99 plus postage.

Just as we went to press, we learned that Comtracks Ltd, have been appointed exclusive UK distributors for Heavenly's MIDI file library. Comtracks now claim to have the largest legal library in the world — over 8000 titles. Other Heavenly titles will also be sold by Comtracks.

A Heavenly Music Productions, PO Box 3175, Clacton, Essex CO16 8GX.
T 01255 821039.
F 01255 821039.
E heavenly@ortiz.demon.co.uk
W www.ortiz.demon.co.uk

T Comtracks Ltd 0131 468 1150.



News from ITN

In the Nursery, the band of occasional *SOS* contributor Nigel Humberstone and his brother Klive, have released their latest CD, on their own ITN Corporation label. *Lingua* takes language as its theme, and explores language's "development, and diverse phonetic styles along with our understanding and use of words". ITN have incorporated a selection of worldwide vocal contributions into the album. The result, a mixture of Mayan, French, Japanese, and other languages, adds an unusual phonetic layer to ITN's musical backing.

A ITN Corporation, 52 Roebuck Road, Sheffield S6 3GQ.
W www.inthenursery.com

Oram's latest squeeze

Oram Professional Audio have released their first compressors, both of which are design hybrids of light-dependent resistors (LDR) and straightforward solid-state technology. The Sonicomp 1 is a 1U, rackmounting, 2-channel processor aimed at the project studio and featuring LED metering. The 2U Sonicomp 2 has a 6mm sculptured front panel, large VU meters, and hand-turned aluminium control knobs. Both units have individual LDR/solid state switching, a link switch for stereo operation, a bypass switch, and rotary pots for input level, theshold, ratio, attack, release and output level. For more about the design philosophy of John Oram, check out our interview starting on page 244 of this issue.

Oram's MWS (above) and Sonicomp 2 (right).

Also new from Oram is the Octamix, a 1U, rackmounting, 8-channel stereo mixer, and the 2U MWS (Microphone WorkStation) MkII. The MWS offers two channels of high-quality mic preamplification, with 4-band EQ identical to that found on Oram's BEQ Series 24 console. The MkII tag indicates an improved noise floor specification and an insert point that has been placed between the mic preamp and the EQ. The MWS was apparently the chosen system for podium mics at the recent Oscars.

A Oram Professional Audio, The Old Forge, Hook Green, Meopham, Kent DA13 0JE.
T 01474 815300.
F 01474 815400.
E sales@oram.co.uk
W www.oram.co.uk

inspired TASCAM

Digital Synergy

TASCAM TM-D8000

digital mixing from the digital recording people

TASCAM understands how intuitive digital recording has to be, and they have built the TM-D8000 around that understanding.

■ **Extensive "up-top" control surface** with multiple faders and controls, provides maximum degree of functionality at any time, while optimum use of assignability provides deeper access to functions and parameters when required. ■ **Synchronization and control**; direct digital interfacing (TDIF, AES/EBU, S/PDIF) and full function transport control (TASCAM sync I/O, Sony P2, MMC) enable desk and recorders to operate seamlessly. ■ **High resolution A/D convertors**, high-performance mic-amps and balanced line inputs. ■ **Programmable** level, EQ, pan, aux, solo/cue and dynamics' processing operate under snap-shot scene automation, with on-line dynamic automation software also available. ■ **Full scale monitor and comms** facilities, LCD console/channel status and parameter values display, and full analogue and digital I/O metering give the TM-D8000 an operational status superior to far more expensive analogue recording and post production consoles.

TASCAM 5 Marlin House, The Croxley Centre, Watford, Herts, WD1 8YA. **Brochure Hotline 01923 819630**

shape of things to come

Red Sound Systems make it count

Red Sound Systems have followed up their Voyager 1 Beat Extractor (reviewed in February 1998) with the Micro BPM. This compact, sub-£100 device is a combination of intelligent bpm (beats per minute) counter and headphone amp. Connect it to the headphone monitor output of any mixing desk, and your headphones to the Micro BPM. Using similar technology to the Voyager 1, the Micro BPM constantly analyses and calculates the tempo of the monitored audio, then displays it on a bright 4-digit LED display. A 'Beat' indicator also flashes on each downbeat. The headphone amp features a 2-band EQ section, mono/stereo switching and high output level.

A Red Sound Systems Ltd, Chancery Court Business Centre, Lincoln's Inn, Lincoln Road, High Wycombe, Bucks HP12 3RE.
T 01494 429321.
F 01494 446321.
E red@redsound.com
W www.redsound.com

Neumann's birthday gifts

To celebrate the company's 70th anniversary this year, Neumann have launched an international competition, with some very special prizes. All details of Neumann's Sound Engineering Contest 1998, as well as the competition questions themselves, are on Neumann's 1998 mic catalogue CD-ROM (PC- and Mac-compatible). First prize is a U87 limited-edition Gold Jubilee stereo pair and a trip to Berlin; second prize is an M149 Tube Set; third prize is a new TLM103; and lastly, there are special prizes of three TLM193s. The competition essentially tests your knowledge of recording technology and music, by testing you in a choice of six different categories. Don't worry: you only have to work through the three that best reflect your abilities and knowledge. The test is in interactive format, and is made up of a mixture of multiple-choice questions and your responses to actual audio. Copies of the CD-ROM are free, and your entries don't have to be in until September 31, 1998.

A Sennheiser UK Ltd, 3 Century Point, Halifax Road, High Wycombe, Bucks HP12 3SL.
T 01494 551551.
F 01494 551550.
W www.neumann.com/

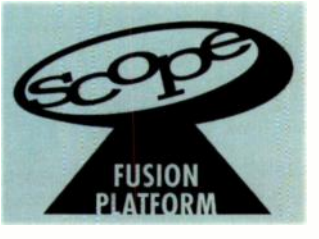
ANOTHER FINE MESSE

Product Highlights from the Frankfurt Music Fair

You might think that as the American NAMM music show was only a little over six weeks before the Frankfurt Musikmesse, there would be few new products to report on, but you'd be mistaken (a full list of all the new gear the *SOS* team saw at the show can be found on pages 22 and 23); some manufacturers keep their main announcements for the European show, while others simply can't finish their exhibition prototypes in time for NAMM!

This year, only a couple of products seen at Frankfurt offered anything radically new, most being refinements of existing technology. One of the products with at least the potential to break new ground came from **Creamware** (System Solutions 0181 693 3355), who were displaying a very early version of a totally new kind of computer-based combined synthesis, mixing, recording and processing system, entitled SCOPE (SCalable Object Processing Environment).

Planned for release in the late summer, SCOPE aims to blur the edges between hardware and software, providing a Mac or PC computer with huge DSP power on a PCI card, which it will use to run 'virtual hardware' of many types.



Each PCI card uses six of the fastest DSP chips currently available, and up to four boards can be used in tandem. All you need to add is an I/O card and a connection to a MIDI sequencer to tie in the rest of your gear.

Creamware are hoping for extensive support from third-party developers by the launch date; the plan is for SCOPE to be supplied with a large library of components such as oscillators, filters, modulators, and mixers. Whether you need an analogue, FM or physical modelling synth, a sampler, a digital mixer or a DSP effects rack, they will all be realisable in the same virtual environment. Certainly the 'virtual Minimoog' assembled on the desktop of the SCOPE host PC by the Creamware Messe demonstrators sounded very realistic — and it looked great, too.

Ensoniq (01245 344001) were exhibiting the MEC expansion chassis for their PARIS hard disk recording system (mentioned in our January '98 PARIS review) which allows the installation of up to nine modules of digital I/O in various formats. The first two of these, the analogue 24-bit 8-input module and 8-output module, should be available by the time you read this, and ADAT optical and AES/EBU modules are to follow shortly. Also introduced was the ZR76 S&S keyboard workstation (a slightly upgraded version of their previous MR76) with a weighted keyboard, 24-bit effects, and a built-in 16Mb Piano ROM expansion board.

Also slightly upgrading, rather than completely overhauling their existing product range were **Lexicon** (Stirling Audio 0171 624 6000), whose PCM80 multi-effects and PCM90 reverb are to be replaced by the PCM81 and 91. The PCM81 includes all the existing PCM80 functions but incorporates more onboard effects and algorithms (including the pitch-shifting previously available on an optional card), more delay memory and AES/EBU digital I/O.

The PCM91 reverb has undergone similar hardware changes, and now includes 450 presets (with new dynamic spatialisation effects) as well as the Dual Reverb algorithms from an expansion card built in as standard.

Akai (0181 897 6388) unveiled two new-generation samplers, the

The Akai S6000 sampler.

S5000 and the S6000, which they apparently designed 'from the ground up', doing away with their old proprietary file format in the process and adopting the PC-standard WAV (if you load samples in the old Akai format, they are automatically converted to WAVs). The basic S5000 has 64 voices, expandable to 128, while the S6000 has 128 voices, and both can play back long stereo samples direct from disk. The RAM can be expanded up to 256Mb for both models. Both samplers have huge displays, with graphics more like those you'd find on an editing software package than a stand-alone sampler — and the top-of-the-range S6000 also features a removable front panel for remote operation.

Bringing their experience of top-end professional mic manufacture more firmly into the project studio arena were

Neumann's new TLM103.

Neumann (Sennheiser 01494 551551), whose new large-diaphragm cardioid TLM103 mic employs a capsule derived from the classic U87, and looks set to retail in the UK for around the £700 mark. Expect an *SOS* review very soon!

After the release of their MDMX4 4-track Minidisc multitracker last year, products aimed at the project studio market have been few and far between from **Sony** (01932 816000), but the Messe saw them return to the fray, with the release of a new quad-channel multi-effects unit, the DPSV55, and a MkII version of the MDMX4 hardware. This includes a new machine sync option, allowing two MDMX4s to be locked together so that new tracks can be recorded to the second machine while previously recorded tracks are played back on the first.

A number of manufacturers exhibited products which were either designed to tie in with other manufacturers' equipment or which used third-party technology to create something new. Into the first of these categories fell a hardware product from Danish **TC Electronic** (Raper & Wayman 0181 800 8288), the appropriately titled UNIT•Y, which resulted from a collaboration between TC and Yamaha. The UNIT•Y is a plug-in signal processing card for Yamaha's 02R digital mixer, which contains not just the effects algorithms derived from the award-winners used in TC's M2000 hardware processor, but also the DSP power needed to make them work, so that the host 02R's processors are not burdened by the card.

Also acting as effective third-party developers for Yamaha were German software company **CMEXX** (SCV 0171 923 1892) who have developed PC-based graphical front-ends for the 02R and the new Yamaha DSP Factory announced recently. Meanwhile, PC soundcard manufacturers **Terratec** (01600 716911) showed the microWAVE PC, the results of their work with Waldorf (a chunky module which plugs into a spare PC drive bay to give you a desktop Waldorf Microwave II synth), and pro recording hardware manufacturers **Studer** (01727 842658) announced the V-Eight, a 20-bit ADAT Type II-format recorder (with the ADAT technology licensed from Alesis, obviously). The difference is that the V-Eight will employ Studer's own very high-quality D-A and A-D converters when it appears later this year.

A show the size of Frankfurt allows you to see in one place the contradictory ways in which the music technology industry continues to develop. Although there was a lot of new digital equipment at the show, there were also plenty of companies pouring money into analogue designs and valve technology. In the digital corner were the usual heavyweights like **Yamaha** (01908 369269), and **Apogee** (Raper & Wayman 0181 800 8288), but also now **Spirit by Soundcraft** (whose stylish digital 328 mixer, first seen at NAMM, is inching nearer to completion — more on this very soon) and a newcomer in the form of **LEM** (Generalmusic UK 01827 312230), a division of Generalmusic, who announced plans for two digital mixers, Eagle and Falcon, featuring flexible built-in dynamics and multi-effects processing. Falcon offers 10 analogue ins and two digital inputs, while the larger Eagle features the same number of digital inputs but 16 analogue ins, and has motorised faders. MIDI snapshot automation is possible on both mixers, and an optional ADAT digital optical interface is also planned for both products.

Apogee were proudly exhibiting their striking new AD8000 8-channel stand-alone A-D converter box. A true 24-bit converter with comprehensive bargraph metering and channel routing options, the AD8000 incorporates Apogee's UV22 technology, which dithers 24-bit signals down to 20- or 16-bit (ideal for use with a 24-bit recording system from which 16-bit CDs need to be burnt, for example). Optional interface cards will provide digital I/O in a variety of formats (S/PDIF, ADAT optical, AES/EBU and TDIF, for example), so you can also use the AD8000 as a format converter box if you have the right optional cards.

Yamaha, meanwhile, sprang another 0-series digital mixer on an unsuspecting world. Set to replace the Promix 01 at the bottom end of their digital mixer range, the smart new 01V still incorporates some of the top-end features included in last year's 03D (and at a amazing projected UK price of around £1500, apparently). With a total of 24 inputs and 14 outs (including eight digital ins and eight digital outs), a large 03D/02R-style display for easy numeric readout of parameters or graphical display of EQ curves, two built-in stereo multi-effects processors, a total of 15 faders (all motorised) and total parameter recall, it's an impressive piece of kit.

The 01V, Yamaha's latest digital mixer.

Flying the flag for older kinds of technology in the face of all these zeros and ones were the likes of **ART** (who unveiled three new valve-based processors; see page 22 for details); German processing giants **SPL** (Stirling Audio 0171 624 6000), whose new valve-based Qure EQ and Tube Stereo Vitalizer were on show alongside the Transient Designer (see page 12 for more details); and German company **Jomox** (Global Distribution 01799 584925). The latter's analogue tabletop XBase09 drum machine has now been joined by a rackmount version (the curiously named AiRBase99), and a fully analogue 8-voice MIDI synth, the SunSyn. Jomox claim that the SunSyn's internal routing system gives the self-contained synth modular-like properties, and the filtering section is equally flexible, allowing the creation of band- and high-pass filtering effects.

But the prize for the most defiantly old-fashioned outlook goes to the splendidly-named Swiss company **Technosaurus** (0041 344 240 110), who were displaying three analogue pieces of gear: the Cyclodon, a 16-step analogue sequencer; the Microcon, a stand-alone analogue synth; and the truly Jurassic

Continued on page 24 ▶

NEW AT FRANKFURT

Table compiled by Debbie Poyser and Matt Bell.

Here's a list of all the new products the *SOS* team saw at the Frankfurt show. Being hot off the mark, we've managed to squeeze reviews or previews of one or two of them into this very issue, and a few have been featured in the news pages of SOS already (the items can be found by reading the coloured notes at the bottom of this table); but the rest should keep the reviews section of the magazine busy over the coming year! Apologies, as ever, to anyone we've missed out.

MANUFACTURER	PRODUCT NAME	DESCRIPTION	FURTHER INFO FROM...
AKAI	S5000	New redesigned 64-voice mid-range sampler	Akai UK 0181 897 6388
AKAI	S6000	New top-notch 128-voice sampler with 'touch and tweak' user interface	Akai UK 0181 897 6388
ALESIS	DM Pro	20-bit expandable drum module	Sound Technology 01462 480000
ALESIS	Nanotracker	MIDI data filer	Sound Technology 01462 480000
ALESIS	Q20	20-bit multi-effects processor	Sound Technology 01462 480000
ALLEN & HEATH	GS3000	8-buss recording mixer	Allen & Heath 01326 372070
ANTARES	ATR1	Hardware version of *Autotune* plug-in	Unity Audio 01920 822890
APHEX	*Aural Exciter*	Software enhancer plug-in	Stirling 0171 624 6000
APHEX	*Big Bottom*	Software processing plug-in	Stirling 0171 624 6000
APHEX	Model 1788	8-channel remote controlled mic preamp with Windows software	Stirling 0171 624 6000
APOGEE	AD8000	8-channel 24-bit digital converter	Raper & Wayman 0181 800 8288
APOGEE	*Session Tools*	Cross-platform studio management software	Raper & Wayman 0181 800 8288
ARBORETUM	*Meta Synth*	Sound editing/synthesis software	Unity Audio 01920 822890
ARBORETUM	*Raygun*	Audio restoration software	Unity Audio 01920 822890
ART	Dual Tube EQ	Two linked Tube EQs (as the name suggests) in a 1U rack	Music Connections 0171 731 5993
ART	Quadra FX	Quad effects processor, now completely redesigned	Music Connections 0171 731 5993
ART	Tube EQ	Half-rack parametric equaliser	Music Connections 0171 731 5993
ART	Tube Pac	Half-rack preamp/compressor	Music Connections 0171 731 5993
AUDIO TECHNICA	AT3525	£259 semi-large diaphragm mic*1	Audio Technica 0113 277 1441
AUDIO TECHNICA	AT3527	Omnidirectional condenser mic*1	Audio Technica 0113 277 1441
AUDIO TECHNICA	AT3528	Cardioid condenser mic*1	Audio Technica 0113 277 1441
AUDIX	CX1/CX2	Studio condenser mics	SCV London 0171 923 1892
BEHRINGER	Modulizer	Top-of-the-range multi-effects processor	Behringer UK 01483 458877
BEHRINGER	MX1804X	Rack mixer with 24-bit effects	Behringer UK 01483 458877
BEHRINGER	MX3242X	4-buss in-line mixer with built-in 24-bit effects	Behringer UK 01483 458877
BEHRINGER	Ultramizer	Mastering processor: 2-band compressor, enhancer & surround processor	Behringer UK 01483 458877
BEYERDYNAMIC	MCD100	Digital microphone*2	Beyerdynamic 01444 258258
BIAS	*Peak* v2.0	Update to fully-featured audio editing software	SCV London 0171 923 1892
BSS	Opal DPR504	4-channel gate	BSS 01707 660667
BSS	Opal DPR522	Advanced dual gate	BSS 01707 660667
BSS	Opal DPR944	Parametric EQ/compressor	BSS 01707 660667
CAD	VX2	Large-diaphragm studio valve mic	Music Connections 0171 731 5993
CHARLIE LAB	Megabeat One	Hard disk MIDI file player	Charlie Lab 0039 884 541884
C-MEXX	*C-Console*	PC 'virtual studio' mixing/recording software for Yamaha DSP Factory card	SCV London 0171 923 1892
C-MEXX	*C-Meter*	PC virtual meter bridge for Yamaha 02R mixer	SCV London 0171 923 1892
C-MEXX	*The Visualizer*	Real-time PC software control interface for Yamaha 02R mixer	SCV London 0171 923 1892
CREAMWARE	SCOPE	DSP-based PC/Mac synthesis/mixing/recording/processing system	System Solutions 0181 693 3355
dbx	586	Dual valve preamp	Arbiter 0181 202 1199
dbx	DPP	Digital dynamics processor	Arbiter 0181 202 1199
DIGITECH	Studio Quad 4	Studio range multi-effects	Arbiter 0181 202 1199
DIGITECH	Studio Vocalist EX	Upgraded Studio Vocalist	Arbiter 0181 202 1199
DOD	Dimension 3	Digital effects	Arbiter 0181 202 1199
DOD	Dimension 6	Stereo digital effects	Arbiter 0181 202 1199
DOD	Dimension 12	Delay/sampler	Arbiter 0181 202 1199
DOD	SR410	Spectral processor	Arbiter 0181 202 1199
DOD	SR460H	Headphone amp	Arbiter 0181 202 1199
DOD	SR866	Compressor/limiter	Arbiter 0181 202 1199
DRAWMER	MX50	De-Esser	Drawmer 01924 378669
ELECTROVOICE	RE27	Dynamic cardioid microphone	Shuttlesound 0181 646 7114
ELECTROVOICE	767	Dynamic large-diaphragm mic	Shuttlesound 0181 646 7114
ELECTROVOICE	RE27N/D	Dynamic cardioid microphone	Shuttlesound 0181 646 7114
EMU	Audity 2000	Rhythmic synth module with arpeggiator*3	Emu UK 0131 653 6556
EMU	E-Synth Dance	E-Synth with Orbit/Phatt Sessions sound ROM*3	Emu UK 0131 653 6556
EMU	Audio Production Studio	PCI card-based digital recording system for PC*3	Emu UK 0131 653 6556
ENSONIQ	MEC	PARIS digital recorder Modular Expansion Chassis	Key Audio 01245 344001
ENSONIQ	ZR76	76-key synth workstation	Key Audio 01245 344001
EVOLUTION	MK125 Dance Machine	Mini keyboard and software	Evolution 01525 372621
FOCUSRITE	Blue 300	Mastering controller for Blue Series processors	Focusrite 01494 462246
FOCUSRITE	Voicebox Mk II	Upgraded Green-series voice channel	Focusrite 01494 462246
FOSTEX	CR200	Professional CD recorder	SCV London 0171 923 1892
FOSTEX	DP8	Digital patchbay	SCV London 0171 923 1892
FOSTEX	FD4	Digital 4-track recorder	SCV London 0171 923 1892
FOSTEX	X24	Cassette multitracker	SCV London 0171 923 1892
GENERALMUSIC	Equinox	Keyboard workstation with built-in drum sounds, drawbars & 2Gb HD option	Generalmusic UK 01827 312230
GENERALMUSIC	PC Groove Station	Sequencing/auto-accompaniment module	Generalmusic UK 01827 312230
HAMMOND	XM1 v2	Upgraded organ module	Hammond UK 01908 263990
JBL	LSR28P	2-way active studio monitor with optional subwoofer	Arbiter 0181 202 1199
JOMOX	AiRBase 99	MIDI analogue drum expander	Global Distribution 01799 584925
JOMOX	MIDIFour	MIDI-CV converter	Global Distribution 01799 584925
JOMOX	SunSyn	Analogue synth module	Global Distribution 01799 584925
KAWAI	K5000X	K5000W workstation with more memory and real-time knobs	Arbiter 0181 202 1199
KAWAI	MP9000	Stage piano with easy-edit front-panel controls	Kawai UK 0049 2151 37300

MANUFACTURER	PRODUCT NAME	DESCRIPTION	FURTHER INFO FROM...
KEYFAX	Phat Boy	GM/XG/AWE hardware controller	Keyfax 01491 577147
KURZWEIL	DMTI 1 & 2	Universal digital format/sample rate conversion interfaces	Washburn UK 01462 482466
KURZWEIL	K2000VP	K2000 upgrade: more RAM. v3.5 OS, new disk set	Washburn UK 01462 482466
KURZWEIL	XM1 Expression Mate	Hardware MIDI processor with 60cm ribbon controller	Washburn UK 01462 482466
KORG	i30	Auto-accompaniment keyboard based on i3	Korg UK 01908 857150
LOGIQ	Micro Sync	MIDI-to-Sync 24 converter for vintage gear	Seeking UK outlet
LEM	Eagle	12-in, 8-out digital mixer with digital connectors & built-in processing	Generalmusic UK 01827 312230
LEM	Falcon	18-in, 10-out digital mixer with digital connectors & built-in processing	Generalmusic UK 01827 312230
LEXICON	MPX100	Affordable multi-effects processor (UK price now confirmed at £249!)	Stirling 0171 624 6000
LEXICON	PCM81	Upgrade of PCM80 effects, with digital connections	Stirling 0171 624 6000
LEXICON	PCM91	Upgrade of PCM90 reverb, with digital connections	Stirling 0171 624 6000
LINE 6	Flextone	Physical modelling guitar amplifier	Sound Technology 01462 480000
MACKIE	Digital 8-buss	Digital console with Apogee UV22 CD encoding software	Key Audio 01245 344001
MARANTZ	CDR630	CD recorder using consumer/pro blanks, CDR/CDRW	Marantz Europe 01753 686080
MICROTECH GEFELL	UM900	Multi-pattern valve condenser mic	Stirling 0171 624 6000
MIDIMAN	Audio Buddy	Phantom-powered mic preamp/DI box*4	Midiman UK 01205 290680
MIDIMAN	Pipeline 8x8	24-bit, 8-channel ADAT D-A/A-D converter box	Midiman UK 01205 290680
MIDI TERMINAL	MIDI interfaces	PC & Mac MIDI interfaces starting at £99	CIMPLE 0181 904 4141
MIDI TERMINAL	VAMS	Stand-alone rackmount PC-based digital recording system	CIMPLE 0181 904 4141
MIDI TERMINAL	WA•MI Rack	PC/Mac multi-port MIDI interface & A-D/D-A converter box	CIMPLE 0181 904 4141
MIDI TERMINAL	Wave Terminal	4-channel PCI card with digital connections	CIMPLE 0181 904 4141
MOTU	2408	Cross-platform PCI card-based hard disk recording system*5	Musictrack 01462 812010
NEUMANN	TLM103	Large-diaphragm studio mic based on U87 capsule	Sennheiser 01494 551551
NOVATION	Supernova	Rack modelled analogue megasynth + optional 16-voice expansion card*6	Novation 01628 828888
OPCODE	Studio 128X	MIDI interface/patchbay*7	SCV 0171 923 1892
OPCODE	Studio Vision Pro 4	MIDI + Audio sequencer upgrade	SCV 0171 923 1892
ORAM	Sonicomp	2-channel dynamics processor	Oram 01474 815300
PEFFTRONICS	RADX	Analogue delay unit	Xenovator 01491 827508
PHONIC	MM122	12-channel mini-mixer	HW International 0181 808 2222
PHONIC	SE206/207	Compact monitors	HW International 0181 808 2222
QUASIMIDI	Sirius	Polyphonic modelled analogue synth with built-in vocoder*8	Turnkey 0171 379 5148
RED SOUND SYSTEMS	Micro BPM	Intelligent BPM counter/headphone monitor amp	Red Sound Systems 01494 429321
ROCKTRON	Floor Artist	Preamp with effects	BLT Industries 01384 633821
ROCKTRON	*PC Preamp*	Guitar preamp software plug-in	BLT Industries 01384 633821
ROLAND	DJ 2000	4-channel DJ mixer with MIDI, effects, BPM counter	Roland 01792 515020
SCHOEPS	CMBI	Battery-powered mic preamp for use with other Schoeps mics	Project Audio 0171 428 9700
SCHOEPS	CMXY	X-Y stereo mic	Project Audio 0171 428 9700
SEKD	ARC 88	PCI-card-based digital recording system for PC	SCV London 0171 923 1892
SONIC FOUNDRY	*ACID*	Loop-based music production software	SCV London 0171 923 1892
SONY	DPS55M	Multi-effects processor	Sony UK 01932 816000
SONY	F740	Instrument dynamic mic	Sony UK 01932 816000
SONY	F780	Vocal dynamic mic	Sony UK 01932 816000
SONY	MDMX4 MkII	Minidisc multitracker	Sony UK 01932 816000
SONY	MDR7506	Pro studio headphones	Sony UK 01932 816000
SONY	SMS2P	Powered monitors	Sony UK 01932 816000
SOUNDSCAPE	Mixtreme	PCI card recording system and digital format converter boxes	Soundscape 01222 450120
SIBELIUS	*VMP*	PC/Mac/Acorn Virtual Manuscript Paper scoring software	Sibelius 01223 302765
SPIRIT	328	32-channel digital mixer with built-in Lexicon effects*9	Spirit 01707 665000
SPIRIT	Folio FX8/FX16	General-purpose mixers with built-in Lexicon effects	Spirit 01707 665000
SPL	Qure	Dual-channel 3-band tube EQ	Stirling 0171 624 6000
SPL	Stereo Tube Vitalizer	Tube enhancer, more affordable than the Tube Vitalizer	Stirling 0171 624 6000
SPL	Transient Designer	4-channel dynamic effects processor*10	Stirling 0171 624 6000
STEINBERG	*Rebirth* v2.0	Still-further-upgraded software TB303/TR808/TR909	Arbiter 0181 202 1199
STEINBERG	*Cubase VST24*	24-bit version of popular MIDI + Audio sequencer	Arbiter 0181 202 1199
STUDER	V-Eight	8-track ADAT-format tape-based digital multitrack	Studer UK 01727 842658
STUDIOMASTER	Club DSP	8-channel rack mixer with built-in DSP effects unit	Studiomaster 01582 570370
TANNOY	Reveal	Nearfield monitors	TEAC 01923 819630
TC ELECTRONIC	Gold Channel	Digitally-enhanced mic preamp	Raper & Wayman 0181 800 8288
TC ELECTRONIC	UNIT•Y	Plug-in DSP processing card for Yamaha 02R mixer	Raper & Wayman 0181 800 8288
TC WORKS	*Native EQ Works*	EQ for PC	SCV London 0171 923 1892
TC WORKS	*Native Essentials*	PC plug-in bundle: reverb, EQ, dynamics	SCV London 0171 923 1892
TC WORKS	*Master X*	TDM mastering plug-in	SCV London 0171 923 1892
TECHNOSAURUS	Cyclodon	16-step analogue sequencer	Technosaurus 0041 344 229 555
TECHNOSAURUS	Microcon	Desktop analogue synth	Technosaurus 0041 344 229 555
TECHNOSAURUS	Selector	Modular analogue synth	Technosaurus 0041 344 229 555
TERRATEC	Microwave PC	PC board with built-in Waldorf Microwave, fits into PC drive bay	Terratec UK 01600 716911
TL AUDIO	Ivory range	Affordable series of valve-based processors	TL Audio 01462 490600
VESTAX	SL201 MKII	Dual compressor/limiter	Vestax Europe 01428 653117
VISCOUNT	EFX200m	24-bit stereo effects unit	CIMPLE 0181 904 4141
WALDORF	Microwave XT	Bright orange updated version of classic digital synth*11	Arbiter 0181 202 1199
WAVES	*De-esser*	Plug-in	SCV 0171 923 1892
WAVES	*EZ-Waves*	Expanded plug-in bundle now with reverb, EQ, compressor	SCV 0171 923 1892
WAVES	*PAZ*	Real-time psychoacoustic analyser plug-in	SCV 0171 923 1892
WAVES	*Renaissance EQ*	EQ plug-in in Renaissance series	SCV 0171 923 1892
YAMAHA	A3000 MkII	Sampler, upgrade of A3000	Yamaha 01908 369269
YAMAHA	01V	24-channel digital mixer	Yamaha 01908 369269

*1 Review p.73 *2 Review p.192 *3 SOS 4/98 p.9 *4 SOS 4/98 p.9 *5 p.10 *6 Preview p.36 *7 p.15 *8 SOS 4/98 p.9 *9 SOS 3/98 p.18 *10 p.12 *11 SOS 1/98 p.9

frankfurt news

▶ *Continued from page 21.*

Selector, an enormous modular synth system currently under development. The company are seeking UK distribution at the moment; as soon as details are confirmed, we'll let you know.

Perhaps the most surprising revelation at the Messe was that German software sequencer manufacturers **Emagic** (Sound Technology 01462 480000) and **Steinberg** (Arbiter 0181 207 5050) have put aside their long-term rivalry to implement greater compatibility between their systems. By the time of the next software releases from these companies, it is promised that Steinberg's *Cubase VST* will have full access to Emagic's Audiowerk8 card and Unitor8 interface, while Emagic's *Logic Audio* will support ASIO drivers and DirectX plug-ins, so as to be able to run Steinberg's VST plug-ins. Steinberg also announced the launch of numerous upgrades, including a 24-bit version of *Cubase VST*, and version 2.0s for both *ReBirth 338*, the Mac/PC-based desktop TB303/TR808 emulator (which now features TR909 sounds, a new built-in compressor and four individually assignable distortion boxes), and the *WaveLab* audio editor (which now supports VST plug-ins).

Incidentally, it seems even hardware is starting to embrace the plug-in software culture; for example, **Mackie** (Key Audio 01245 344001) announced during the show that their still-eagerly awaited D8B (Digital 8•Buss) mixing console will be capable of running third-party processor plug-ins.

Still with software, over at the Sonic Foundry, a new piece of mind-expandingly-named PC software popped out of the furnace. *ACID* is a piece of WAV file composition software optimised for the production of loop-based music such as techno or hip-hop, with an emphasis on instant results. The software is supplied with a huge selection of style-based WAV loops and single-shot sounds, which you can then 'drag and drop' onto a sequencer-style Arrange page and rearrange to your taste with extensive editing options. The clever bit is that *ACID* allows real-time changes to pitch or tempo, so that you can alter the tempo of a whole clutch of different loops to run in sync, simply by moving a bpm slider.

Finally, mention has to be made of *Meta Synth* from Arboretum Systems (Unity Audio 01920 822890). As originally reported in *SOS* March news, *Meta Synth* is fully-featured Mac-based sound design software, but most radical is its ability to use graphics to modify or create sounds. Any package that will let you use the cover artwork of an album to generate what's recorded on it has to be worth a look — and we *swear* this isn't a leftover from the April issue! ❑

Steinberg's Rebirth 2.0.

dynaudio lexicon dbx

turnkey

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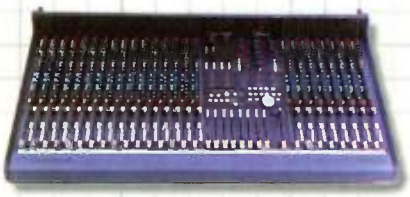
The project studio has changed how professional musicians make and record music. Record advances used to pay for studio time, but now its for an artist's home studio utilising digital 8 track and a compact high quality console.



The Ghost, though, is more than a project console, you only have to look at the features to see this. Soundcraft continues to break new ground in analogue console manufacture bringing fully professional facilities: Ultra low noise inputs, 4 band EQ with 2 fully parametric mids, up to 12 auxiliary sends, MIDI mute automation and MTR transport control (not LE) are a few of the features that put other project consoles to shame. In fact the only comparison with a project console you could make is the price.

RRP ~~£6729~~	RRP ~~£7469~~	RRP ~~£7575~~	RRP ~~£8327~~
£3999.99	**£4599.99**	**£4699.99**	**£5199.99**
GHOST 24 LE + ADAT LX20	GHOST 24 + ADAT LX20	GHOST 32 LE + ADAT LX20	GHOST 32 + ADAT LX20
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ADAT LX20 DIGITAL MULTITRACK RECORDER

- New 20 Bit ADAT Format for Superb Quality
- Ultra High Speed Transport
- Digital Dubbing Between Two Machines
- Fluorescent Bargraph Metering

Alesis pioneered low cost digital multitrack recording with the introduction of the ADAT, and changed the face of home and professional recording. The new LX20 version still plays tapes from the old machines, but now records at full 20 bit resolution - 16 times more detail than previously!

The clarity really must be heard to be believed, revealing the finest nuances in both acoustic and electronic sounds. Improved locking times make multi machine setups a dream to use.

digidesign

NEW Digidesign have added a high performance 24 bit system to their ProTools range of products. The new D24 PCI-bus audio card is based on the Motorola 56301 processor, and increases the audio tracks from 16 to 24 per card. There is also an updated 888 interface with 24bit A/D & 20bit D/As, multiple 888s enabling up to 72 channels of discrete analog or digital I/O. They have also reduced the price of the standard ProTools from £7,131 to ~~£4,445~~.

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- Apple MultipleScan 720 Display
- ProTools24 Core System
- Digidesign ADAT Bridge or 882/20 Interface
- PCI SCSI Accelerator
- 4Gb Fast & Wide Barracuda Hard Drive

New Products:

Digidesign ADAT Bridge & 882/20 Interfaces: New Low Cost Interfaces: the ADAT bridge provides 16ch digital I/o via ADAT Toslink with 20bit DA for monitoring. Expanding upon the original 16-bit 882 I/O audio interface design, the 882/20 features 8 channels of 20bit analog I/o and two of 24-bit S/PDIF I/O.

ProTools Plug-ins

t.c. tools £775.99

Arguably the best reverb plug-in available, TC Tools uses algorithms developed from the M5000 mainframe reverb. Great user interface allows you to visualize the effects via the graphics, making it intuitive and easy to use.

Dolby Surround Tools £1339.99

Produce Dolby Surround mixes entirely within the ProTools environment. Both Encoder & Decoder Plug-ins are available as a bundle providing digital implementation of encoding/decoding process.

Focusrite D2 £880.99

Based on the famed Focusrite Red 2 Dual EQ designed by Rupert Neve, the D2 plug-in matches the high-quality expected from the company, even down to the brushed aluminium front panel.

Antares Auto-Tune £580.99

The plug-in that many professionals have but none will admit to it! AutoTune identifies the pitch of a signal and corrects it to a defined scale, retaining original quality, making intonation problems a thing of the past. Available as a TDM or VST plug-in.

Ask anyone in the know in the audio industry about who are the foremost acoustic designers in the business, and the chances are that the name of Roger Quested will be top of the list. He has built an unrivaled reputation for himself in a notoriously difficult process which is half science, half art.

Whilst his initial designs were all large bespoke projects for his studio installations, the last few years have seen the emergence of a very carefully thought out, high quality range of monitor speakers, to cater for the demands of the modern speaker market, from the innovative new F11, to the incredible HQ410.

The Quested range is probably the most comprehensive available, covering active, passive and self powered designs, as well as amplifiers and active crossovers, from subwoofers through nearfields to custom built soffit mounting units.

Call Turnkey Professional to arrange a demonstration, a free trial in your own studio, or to enquire about our generous part exchange facilities.

Q QUESTED

F11 SELF POWERED MONITOR

The F11's cabinet design is another Quested first, being made from a new mineral loaded material which offers excellent acoustic properties using a considerably smaller box than would be possible using conventional materials. The design is a self powered two way bi-amplified one, with 165mm bass driver, and 28mm soft dome HF unit. Months of fine tuning have resulted in a speaker which produces a superb sound, totally belying its size. Custom colours can be specified for bulk orders.

NEW PRODUCT **£1149.99**

VS2205 SELF POWERED MONITOR

One of the most popular models in the Quested range, the VS2205 is designed as a highly accurate reference monitor, and its low profile and shielding made it ideal for a wide variety of uses. The built in amplifiers separately drive two 130mm bass units and a 28mm ferrofluid damped soft dome tweeter. Switches are provided for input sensitivity and HF and LF equalisation, to compensate for room conditions and positioning.

NEW PRODUCT **£1699.99**

We will beat any genuine quote from a UK or European dealer at the time of order. Must be like for like specifications. No upgrades. Part goods may be ex-stock and in stock. Prices exclude 17.5% VAT except Digidesign bundles. UK mainland carriage £9.95. Please allow 10 working days for cheque clearance. Errors & omissions excepted.

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KORG · Emagic · AUDIS · Steinberg · Soundscape · Technics · Vestax · ROLAND · FATAR

EUROPE'S LOWEST

YAMAHA

STAY IN THE MIX WITH YAMAHA

PROMIX 01 Digital Mixer

This is the digital mixer that shattered the price/performance barrier. You get 1 stereo and 16 mono inputs (8 are mic/line), all with 3 band parametric EQ, 2 external aux sends, 2 internal sends to the built in SPX990 based FX processors, 3 assignable dynamics processors, motorised faders and total automation. The SPDIF digital output means you can connect the ProMix01 directly to your DAT, CDR or MiniDisc with absolutely no loss of quality. This was incredible value at the original price, but this new low price makes it probably the best value for money mixer on the market.

- Up to 20 Inputs in Total
- Moving Fader Automation
- 2 Built in Effects Processors
- 3 Assignable Dynamics Processors

~~RRP £1999~~

£999.99

03D Digital Console

Like the 02R, the 03D is a fully-automated digital mixing console set to have a large impact on the mixing market. With 26-inputs & 18-outputs the console features fast 32-bit internal digital audio processing, versatile analog and digital I/O configuration, new 32-bit onboard multi-effects processors with freeze (sampling) and guitar amp simulation effects, motorised faders, fader and mute grouping, surround sound mixing, onboard automation, MIDI remote capabilities and much more.

- Ultra Compact Format
- Moving Fader Automation
- Surround Sound Capabilities
- Takes ADAT, TDIF or AESEBU Digital Board

Call now for a Turnkey Professional brochure and a free trial!

~~RRP £2999~~

£2349.99

02R Digital Console

The fully digital 40 input 8 bus console with total automation and moving faders. 4 band parametric EQ and dynamics for every input and 2 comprehensive on-board fx processors with a range of reverbs, delays and other standard fx. Optional interface cards allow full digital connection of ADAT, T-DIF and AES/EBU formats for integration of MTR and hard disk systems.

- Up to 40 Inputs in Total
- Moving Fader Automation
- Dynamics Processors on Every Channel
- Takes 4x ADAT, TDIF or AESEBU Digital Boards

~~RRP £6999~~

£5699.99

THE UK 4 TRACK CENTRE

Our famous 4 track pack includes everything you need to start making music: Maxell headphones, a dynamic microphone, a chrome tape, 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 £39.95) absolutely free when you purchase any of these multitrack recorders.

PORTASTUDIOS — TASCAM

PORTA 02

NEW PRODUCT

£149.99

ALL MULTITRACKS INC '4 TRACK PACK' ADD £10 FOR PORTA 02

Brand new entry level portastudio from the inventors of the original portable multitrack recorder

414

All new Portastudio from Tascam! Records to all 4 tracks at once using DBX noise reduction. Double speed recording for better bandwidth. 2 band EQ. 4 mic inputs and full LED metering make it great value for money. Includes free flair track pack!

~~RRP £349~~

£329.99

424 MkII

A brand new version of the best selling 424 from Tascam, inventors of the Portastudio. Records to all 4 tracks at once, 2 independent auxiliary sends (1 switchable pre/post fader). Logic controlled 2 speed transport with built in memory location points. DBX noise reduction. Initial supplies limited.

~~RRP £499~~

£429.99

FOSTEX

ALL MULTITRACKS INC '4 TRACK PACK' ADD £10 FOR X-14

X-14

The easiest introduction to multitrack recording ever! Built in mic for instant recording and straightforward operation means almost anyone can make a track without reference to the manual. Buy with our complete four track pack for only £10 extra!

~~RRP £149~~

£129.99

XR3

High speed machine at under £250! New auto-bounce facility and built in mic - ideal for 4 track recording on the move.

~~RRP £249~~

£219.99

XR55

Stunning new double speed Fostex multi-me with individual EQ, up to 3 aux sends and 2 stereo returns, 2 inserts & 4 semi-rate tape outs allowing use with an external mixer. 2 XLR mic inputs.

NEW PRODUCT

£379.99

XR77

The XR7 breaks new ground in price and performance - 6 inputs (2 mics), 2 separate aux sends, lo/hi/i plus sweep mid EQ. Records up to 4 tracks at once - double speed transport, Dolby C. 2 XLR mic inputs.

NEW PRODUCT

£499.99

DMT-8 VL DIGITAL MULTITRACKER — FOSTEX

INC SCSI INTERFACE!

The personal digital multi-track is here at last, and at a price you won't believe! 8 separate tracks of CD quality audio recorded to 16 gig hard-disk (up to 40 minutes). Record 2 tracks simultaneously, jog/shuttle audio and sync to MIDI without losing a track. The 8 channel mixer accepts 2 mics, with a 2 band EQ and 2 aux sends. Separate outputs and S/PDIF optical output. Now with free SCSI interface! *Why buy 4 tracks when you can have 8?!*

~~RRP £1208~~

£849.99

564 MINIDISC PORTASTUDIO / EDITOR — TASCAM

50% OFF!

Tascam are the inventors of the Portastudio, and were also the first on the market with a MiniDisc based four tracker. The result, the 564 is triumph of engineering and heavily feature packed with it: up to 12 inputs at mixdown, built in MIDI Clock and Time Code synchronisation, 3 band mid sweep EQ, 2 aux sends, full LED metering, jog / shuttle wheel, 4 XLR mic inputs, 37 mins record time per disc, whilst the unique bounce forward facility allowing retention of the original parts even after digitally bouncing tracks. Far too many specs to list here - a recording studio in a box!

This is without doubt, the ultimate Portastudio. Excellent value for money at the original price, but Turnkey's exclusive offer makes this superb machine an unbeatable deal - order now while stocks last.

~~RRP £1199~~

£599.99

DA20MkII DAT MACHINE — TASCAM

The new Mk II version of the DA20 builds on what is already a quality machine: reliable tray-loading mechanism, SCMS is switchable in or out, both analog and digital recording at all 3 sample rates and coaxial SPDIF in and out. High sound quality is guaranteed by 1-bit DAC playback, and there is a special 'Table-of-Contents' feature. New features include error counting & adjustable ID encoding.

~~RRP £699~~

£599.99

102MkII & 202MkIII TAPE DECKS

Fantastic deals on Tascam's superb professional quality mastering cassette decks. Both are full 19" rackmount units, the 102 MkII is a single deck unit, the 202 MkII is a double deck, which records on both decks. Limited stocks only at these prices, ideal for mastering and duplication.

~~RRP £249~~

£199.99

~~RRP £349~~

£269.99

DTC-ZE700 DAT RECORDER — SONY

ALMOST 50% OFF

We have exclusively secured a small supply of the Sony DTCZE700 to bring you by far the cheapest full size DAT machine on the market, but not at the expense of features. SPDIF coaxial input and output in and out, digital and analog recording at all three sampling rates (32 kHz, 44.1 kHz, 48 kHz), as well as all the usual ID functions and a full function infra red remote control. Also features Sony's exclusive Super Bit Mapping technology for incredible recording quality. *Another DAT exclusive from Turnkey!*

~~RRP £699~~

£359.99

MDS-JE510 MINIDISC RECORDER

Although DCC looks to have died as a format now, Minidisc is thriving, and rapidly becoming a standard in radio stations and other institutions around the world. With sound quality almost as good as DAT, and a range of editing features like Combine, Move, and Auto Cue, it makes an ideal choice for recording on a budget. If MiniDisc is for you, there's no better value on the market than the MDS-JE510, with digital input, jog dial and full function remote control as standard.

~~RRP £299~~

£199.99

MZ-R30 PORTABLE MINIDISC RECORDER

Now available in this compact portable version of the MDS-JE510 as featured above. *This must be the neatest walkman you've ever seen!*

~~RRP £399~~

£219.99

MT50 MULTI-TRACKER — YAMAHA

The MT50 can record all four tracks simultaneously, and works at double the normal speed for improved frequency response and reduced wow and flutter. Each channel has it's own two band EQ, an auxiliary send for use with effects units, and DBX noise reduction is incorporated to keep background noise to a minimum. A digital sync output bypasses this so as not to interfere with timecode.

~~RRP £389~~

£269.99

MT4X MULTI-TRACKER

BOTH INC '4 TRACK PACK'

The MT4X is Yamaha's top of the line machine and has a specification to go with it! It's logic controlled transport means that as well as two simultaneous points and return to zero functions, you also get a special rehearsal mode, so that you can practice dropping in and out as many times as you like, without risking erasing your precious recording! Other great features include three band EQ on each channel, two auxiliary sends, LCD metering, double or single speed operation, and individual track outputs for use with an external mixer.

~~RRP £569~~

£369.99

"We will beat any genuine quote from a UK or European dealer at the time of order. We must be able to supply at the quote and the goods must be available and in stock. Prices include VAT. UK mainland carriage from £9.99. Please allow 10 working days for cheque clearance. Errors & omissions excepted.

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PRICES GUARANTEED*

VIRTUAL STUDIO? VIRTUAL GIVEAWAY!

VS880 DIGITAL WORKSTATION

Roland's VS880 has become the de-facto standard for compact digital eight track recording, hardly surprising with it's combination of great sound quality, compact size, and excellent feature set.

Each of the 8 tracks has 8 virtual tracks, allowing you to record several different takes, and then compare them afterwards, even if you've already recorded on the other 7 tracks. The built in digital mixer can handle up to 14 channels, features 2 band parametric EQ, 1 external and 2 internal aux sends (to the optional FX board), and is fully automatable over MIDI. The SCSI port allows the connection of external SCSI devices for recording or backup, which can also be made to DAT via the digi i/o. There's not even any need for a separate synchroniser, as it puts out MTC as standard to sync up your sequencer.

New version 2 software not only allows automation data to be recorded directly to the hard drive for total integration, but also brings numerous new effects to the optional board, including COSM based mic emulation - make your SM58 sound like a U87! Existing owners can upgrade to version 2 for only £49.99.

To offer a completely integrated solution, we are bundling the VS880 with a 1.4 gig hard drive and mounting kit, and the FX board together. These would normally have a combined retail price of £2238, but for a limited period only all this can be yours for only £1499.99!

- Digital Mixer with Full Automation
- Totally Integrated Solution
- Built in MIDI Sync
- 64 Virtual Tracks
- Built in Effects

~~RRP £2238~~

£1499.99

INCLUDES 1.4Gb HD, MOUNTING KIT & FX BOARD

VS-840 DIGITAL WORKSTATION

NEW

Want the advantages of a heard disk based recorder, but without the price tag? Roland's new VS840 should fit the bill, recording 8 tracks (up to 64 virtual tracks) onto its built in Zip drive, you still benefit from a fully digital mixer, and a built in FX processor, with 26 different algorithms and guitar level input. An all in one no-nonsense product with a no-nonsense price. Initial stocks will be very limited - get your order in early!

NEW PRODUCT

£949.99

CDR870 RE-RECORDABLE CD WRITER

PHILIPS

The ultimate mastering medium? As well as offering excellent durability, CDs are the industry and consumer standard format. What's more, there's nothing like your own finished CD to impress your mates! This brand new recorder from Philips is the only machine on the market to be able to use re-recordable CDs, as well as the cheaper 'consumer' standard blanks. Digital and analogue ins and outs, superb sound quality.

Our incredible price even includes the remote control and one free CD. (Further CDs: consumer £4.99, re-recordable £14.99)

~~RRP £499~~

£359.99

HD-S200 PORTABLE DAT RECORDER

aiwa

ALMOST 40% OFF!

Turnkey's incredible buying team bring you the DAT exclusive of the year!

This beautifully manufactured machine from AIWA, records at 32kHz (long play), 44.1kHz or 48kHz through either the analog or digital inputs. Digital input and output via optional optical cables (£29 each), backlit LCD display, full complement of ID buttons. Comes with lithium ion rechargable battery (no memory effect), additional dry cell battery case for extra battery life, mains adaptor, phono cables and headphones included in the price.

Very limited stocks - grab your once in a lifetime bargain now!

~~RRP £599~~

£369.99

MDMX4 DIGITAL MULTITRACKER

OVER 40% OFF!

SONY

The MDMX4 offers 37 minutes of high quality four track digital recording on an MD data disk.

It also features the exclusive Track Edit system and a host of noise reducing dbx will satisfy minisa your concept of personal recording and Sonys second generation data compression algorithms give it a significant sound advantage over similar machines. The 10 input mixer (2 XLR's) has 4 bussed, individual track outputs, 2 aux sends and 3 band EQ. Random access transport includes 11 point locator, jog shuttle wheel as well as rehearsal and auto-punch modes. There's no need to save a track space for bouncing, and whole songs can be digitally copied forward for a 'safety' version. MMC and MTC compatibility for use with MIDI sequencers - you can even control it from your sequencer! MIDI clocks are also supported for use with keyboard workstations and drum machines.

Stocks are very limited on this exclusive deal - order now!

~~RRP £999~~

£549.99

PDR-04 CD RECORDER

PIONEER

Why money on DAT when you can record to CD for the same price? DAT, CD or Mini Disc ID codes are automatically translated onto the disc, and recording can be stopped and started on the same disc. CD's are more durable and have a longer shelf life than DAT, and you get all the advantages of instant access, and impressing your friends with your very own CD! *These will sell out quickly - order now!*

RRP £699

£499.99

PDR-05 ALSO AVAILABLE with sample rate conversion ONLY £599.99

NEW MD8 DIGITAL WORKSTATION

YAMAHA

If you thought 4 tracks on 1 MiniDisc was good - check out the new 8 track Yamaha MD8. There are 8 mic / line inputs (2 with XLRs and insert points), 3 band mid sweep EQ, 2 aux sends and a jog / shuttle wheel. There are up to 30 tracks available at mixdown, so there's plenty of room for synth and sampler outputs, whilst the latest ATRAC compression algorithm means the sound is virtually indistinguishable from DAT. *We have guaranteed allocation on the first shipment - call us now to reserve yours!*

NEW PRODUCT

£999.99

MAGNETIC MEDIA

AMPEX

TYPE	SIZE	PRICE MIN ORDER QUANTITY
DAT	15 min	£2.39 10
DAT	54 min	£2.79 10
DAT	80 min	£3.49 10
DAT	90 min	£3.69 10
DAT	120 min	£4.19 10
DAT	184 min	£6.99 10
456	1/4" x 7"	£5.99 5
456	1/4" x 10"	£15.49 3
456	1/2" x 10"	£27.49 3
456	1" x 10"	£47.99 2
456	2" x 10"	£90.99 2
456	1/4" x 7"	£16.29 5
ADAT	40 min	£9.99 6
ADAT	80 min	£13.49 6
488	30 min	£5.99 6
488	60 min	£7.29 6
488	120 min	£8.99 6

Ampex has long been the media of choice for studios worldwide. Now Turnkey's incredible prices mean it's the only realistic choice - check out the list below!

NEW DPS12 DIGITAL MULTITRACKER

AKAI

Akai's new DPS12 brings you non-destructive 12 track (uncompressed) digital recording and mixing at a previously unheard of price! Recording directly onto a built-in Jaz drive, the DPS12 really is an easy to use all-in-one box with the significant advantages of waveform display editing, fully MIDI automatable mixing, and optional built-in digital FX. Also features jog / shuttle wheel, 256 undo levels, 20 channels at once from, RCA interfaces, digital in and simultaneous recording on up to 8 tracks. *In stock now at Turnkey!*

NEW PRODUCT

£1299.99

NEW D8 DIGITAL WORKSTATION

KORG

For the last few years, Korg's high end SoundLink hard disk recording system has enjoyed considerable success at post production houses around the world. Now they've used all that experience to bring you the amazing new D8 - a complete digital recording studio in less than the size of a desk top!

The D8 records up to 8 tracks onto its built in SCSI drive, has digital in and SCSI ports as standard, a whole range of built in digital FX, and even a guitar level input to do away with DI boxes. *In stock and on demo at Turnkey - call now for further details!*

NEW PRODUCT

£849.99

MULTITRACKS NEW, USED & EX DEMO

AKAI DR16	£2299.99	FOSTEX D80	£1199.99
AKAI IB302D	£249.99	JL COOPER DATAMASTER	£399.99
AKAI IBM20T	£149.99	JLC CUEPOINT	£299.99
ALESIS BRC	£999.99	MARANTZ CD46/PRO	£119.99
CASIO DA7 DAT	£549.99	SONY DTC690	£299.99
FOSTEX D15 DAT	£1499.99	SONY DTC790	£399.99
FOSTEX D80	£999.99	SONY MDSJE300	£169.99
FOSTEX 380S DEMO	£399.99	SONY PCM800 DIGITAL 8 TRACK	£1999.99
FOSTEX CX8 DIGITAL 8 TRACK	£1299.99	SONY TAFE200 TAPEDECK	£99.99
SONY TCKE200	£99.99		
TASCAM 112MK2	£399.99		
TASCAM DA30MK2	£899.99		
TASCAM DA60MK2 DEMO	£2599.99		
TASCAM 424 MK1 DEMO	£299.99		
TASCAM DA88	£2299.99		
TASCAM PC848	£899.99		
YAMAHA MU90R	£499.99		
YAMAHA RY20	£249.99		

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EUROPE'S LOWEST

FOSTEX

D IS FOR DIGITAL!

Fostex dominated the home recording market in the 80's and early 90's with such classics as the Model 80, the A8 and the R8 8 track recorders. Now in the late 90's they have combined that wealth of experience, together with that of key New England Digital staff to bring you this superb range of digital multitracks, specifically designed for the project studio owner. Just check out the range!

DMT-8 VL DIGITAL MULTITRACKER

INC SCSI INTERFACE!

The personal digital multi-track is here at last, and at a price you won't believe! 8 separate tracks of CD quality audio recorded to 1.6 Gb hard-disk (40 minutes). Record 2 tracks simultaneously, jog-shuttle audio and sync to MIDI without losing a track. The 8 channel mixer accepts 2 mics, with a 2 band EQ and 2 aux sends. Separate outputs and S/PDIF optical output. Price includes optional SCSI interface. *Why buy 4 tracks when you can have 8?!*

RRP £1208 **£849.99**

D80 HD RECORDER

INC 1.3Gb HD

The D80 is a 3U rackmount unit, with 8 individual in/outs and outputs, a removable front panel doubles as a remote and meterbridge, and a removable cannister drive slot. Slaves to MMC as well as being able to act as a master, all with no track loss, and has S/PDIF digital ins and outs to allow backup to a standard DAT machine and direct digital recording. Easy to use editing allows cut, copy and repeat passing across multiple tracks. *Comes with 1.3Gb Hard Drive as standard.*

RRP £1499 **£1099.99**

D90 HD RECORDER

INC 1.6 Gb HD

The D90 has all the features of the D80, but also has ADAT digi i/o as standard, and optional kits for connecting SCSI drives & balanced analog i/o's for interfacing with pro level equipment. *Our price includes a 1.6 Gb Hard Drive fitted free!*

RRP £1798 **£1299.99**

D160 HD RECORDER

INC 3.6 Gb HD

Latest in the family from Fostex is the superb D160, giving you a full 16 tracks of hard disk recording for well under £3000 - less than the price of a secondhand analogue machine! D/A conversion is 20 bit delta-sigma 128x oversampling, so sound quality is superb. An amazing amount of machine for your money - call us for more details. *Price includes 3.6 Gb Hard Drive.*

RRP £2932 **£2099.99**

- *Uncompressed Audio for True Digital Quality*
- *Removable Canister Drives for Easy Portability*
- *Jog / Shuttle Wheels on all Models*
- *Back up to DAT via Digital Ins and Outs*

XR300 SYNCHRONISER

TURNKEY EXCLUSIVE

XRI Systems

Long the synchroniser of choice in professional studios... we now revolutionary bring you this industry standard unit at an unheard-of price. Features include true SMPTE as all standard sample rates, MIDI clocks / song Pointers or MTC for compatibility with all MIDI sequencers. Large LED time-code display. Merged MIDI input. Straight-forward operating system. Full 19" rack unit.

RRP £299 **£169.99**

VC3 PRO CHANNEL

JOEMEEK

Legendary stories producer Joe Meek was often asked the secret of his fantastic vocal sound. It was in fact a custom made 'black box' of electronics, whose contents he would not reveal during his life. Now JOEMEEK bring his designs to life, and with knobs not in addition to the compressor and high feedback mic amp controls like Drive, Enhance and Q make the VC3 one of the fantastic ways to get your signal down. *Incredible low price - order yours today!*

RRP £249 **£169.99**

COMPOSER WORKHORSE COMPRESSOR

BEHRINGER

A neutral sounding and fully featured compressor at a give away price! Built-in gate removes any unwanted noise, soft-knee action makes compression much less obtrusive, "auto" mode makes quick setup a doddle and side-chain access makes it can also be used for de-essing etc.

RRP £349 **£169.99**

STUDIO QUAD 4 CH. STUDIO FX PROCESSOR

ONCE-IN-A-LIFE-TIME OFFER!

DigiTech

At last - Multi effects as they should be! The new Digitech Studio Quad features not only their custom designed and ultra-powerful 'S-DISC' chip, but also 4 independent inputs and outputs, which using the built-in sub-mixer, can even be configured as 4 mono inputs feeding 4 effects processors, feeding 4 stereo outputs! The huge screen and new intuitive operating system make editing a breeze, 20 bit convertors give greater than 90 dB signal to noise ratio and the range of effects includes reverbs, delays, detuning, chorus, flanging etc... Hundreds of other features too numerous to mention. *Exclusive end of line deal only at Turnkey!*

RRP £529 **£259.99**

104 AURAL EXCITER

ALMOST 50% OFF!

APHEX

Unbelievable new low price on the Type C2 evolved from the investigations of the process. Aphex who have pioneered these designs since 1975. The two channel Model 104 excites high frequencies by generating harmonics, plus it features Aphex's "Big Bottom" low frequency enhancement which compresses the low end of the mix to increase punch without raising peak levels. Limited quantities only - buy now to avoid disappointment.

RRP £299 **£149.99**

THC-00 RESINATOR

FAT

Freeform Analog Technologies FreeBass is already one of the most successful sound modules of the year, and now following hot on the heals of the Freebass and PCP330 Procoder is the new THC-00 Resinator.

Not one, not two, but three band pass filters with resonance! And we mean resonance! Feed any mono signal into this unit and get out some of the most wacky and groovy sounds you've ever heard in glorious auto panning stereo. Each of the filters has it's own cutoff point which is modulated in a selection of ways, by a combination of the built in LFO, the polarity reversable envelope follower and even an external control voltage. Ideal for processing loops, vocals or indeed any another signal, for results ranging from the sublime to the extreme! *Must be heard! More fresh thinking from F.A.T.*

NEW PRODUCT **£169.99**

PCP330 VOCODER

One of the most asked questions in the industry must be "Why doesn't anyone make a vocoder anymore?" - well here it is, with a fantastic feature list, great sound quality and a down to earth price. The carrier can be either an internal VCO or external line input, whilst both line and mic inputs are given for the modulator signal. Eleven filter bands each have their own level knob on the front panel giving true hands on control of your sound, and the sibilance (unvoiced) control also has an external input if required. The final output can contain any mix of modulator, carrier, vocoded signal and a special filtered version of the signal. Remember, this doesn't only create robot voices, there are thousands of creative uses, and it's also ideal for processing drum loops.

Order now and own an instant classic!

NEW PRODUCT **£299.99**

DIGITAL PROBLEM SOLVERS

FRIEND-CHIP

In today's increasingly digital world, many people are still using their equipment's analogue ins and outs, because of the difficulty of interconnection and synchronisation. Friend Chip's new sensibly priced digital patchbays and 'black box' problem solvers end the misery and make the digital studio a reality! The DigiMax digital patchbay (£299.99) has 8 inputs and outputs (2 each on optical), can accept both AES/EBU and SPDIF signals, and is MIDI controllable. An XLR version (£499.99) is also available for greater AES/EBU reliability. The Audio Time Base (£499.99) is a 1u 19" rack which acts as a master clock source for your studio, outputting word clock, Digidesign Super Clock and SPDIF. The master clock can be internally generated, or a reference taken from mains, SPDIF word clock, Super Clock, video or LTC (SMPTE). Lockup from timecode is in around 1 second!

Also in the range:

OP-CON: optical to co-axial and vice versa	£49.99
PRO-CON: SPDIF to AES/EBU and vice versa with BOMB shipping	£129.99
D 4-2 COPY CON: switcher with 1 optical & 1 co-ax ins, 2 co-ax outs and BOMB shipping	£119.99
SRM-1: converts almost any incoming sample rate to 44.1kHz (ideal for ProMatch and non-44.1 DATS)	£149.99
SYNCHRO: sample rate conversion to 32, 44.1, 48kHz, with lock to external word clock	£249.99
Super Clock Driver: converts DigiDesign superclock to word clock and vice versa, 3 outputs	£129.99
Super Audio Clock: converts Super Clock to word clock and vice versa with synchronous SPDIF signal	£129.99
ADAT Audio Clock: ADAT 8 Pin to word clock, Super Clock and SPDIF clock converter	£129.99
ADAT Word Clock Synchroniser: ADAT 8 Pin to word clock and Super Clock converter, also sends MTC synchronise your sequencer with BRO's range	£199.99
ADAT SPDIF Synchroniser: as above but with converts only in SPDIF	£199.99
ADAT MMC Machine Control: MCO to ADAT 8 Pin converter with MCO thru (add to either of the above for full remote ADAT control from your sequencer)	£89.99
Rack Kit: holds up to three 1 black boxes	£49.99

FROM **£49.99**

266A DUAL COMPRESSOR GATE

DigiTech

Two channels of classic dbx compression with new Auto-Dynamic™ Attack and Release controls, program-adaptive expander gates, balanced inputs, precision LED metering and sidechain insert. Front panel selection of stereo or dual mono operation, all in a standard 1U rack design and at an unbelievable price! *Entire dbx range also on demo at Turnkey.*

RRP £249 **£149.99**

"We will beat any genuine quote from a UK or overseas dealer at the time of order. To enable us to do so, the model must be available and in stock. Prices include 17.5% VAT. Us monthly terms from £9.99 APR. Allow 10 working days for bespoke clearance. E&OE & omissions excepted.

PRICES GUARANTEED*

Bellari

PREMIUM QUALITY VALVE OUTBOARD EQUIPMENT

If you've previously used valve equipment, you'll be well aware of the magical quality that tube circuitry produces, and if you haven't used it - try it now! Many manufacturers use the word valve as an excuse to charge exorbitant prices for their product, but not Bellari, and our factory direct exclusive makes the range unbelievable value for money!

The RP583 Studio Tube Compressor / Limiter

has become an instant hit, offering as it does two channels (stereo linkable) of some of the finest sounding compression money can buy, with a smooth and natural compression characteristic. Ratio is continuously variable from 2:1 to infinity, and there are separate controls for attack, release, threshold and make-up gain. Dual VU metering is provided, as well as jack and balanced XLR ins and outs, and sidechain access is fully catered for. ***Ideal for a variety of instruments, vocals and complete mixes.***

NEW PRODUCT **£499.99** FACTORY DIRECT

RP533 Studio Tube Multi-Processor

Whilst mixers these days are of a better quality than they used to be, to get the best possible signal to tape or disk, you can't beat a dedicated unit - and for value for money, you can't beat the Bellari RP533 Studio Tube Multi-Processor. The all tube 2u box, features a premium quality transformer balanced mic pre amp with switchable 30dB pad, phase reverse and true 48V phantom power. The compressor has all the features of the RP583, and the exciter section adds a wonderful sheen to virtually any sound, as well as beefing up the bottom end. Each stage has it's own bypass switch, sidechain access is provided, and the large VU meter can monitor input, output, or gain reduction.
No serious recordist should be without one!

NEW PRODUCT **£499.99** FACTORY DIRECT

RP520 Studio Mic Pre Amp

A true dual tube mic pre amp at a bargain price, with tubes used at all the crucial gain stages, not just strapped across the outputs. Features include phase reverse, input and output pads, separate gain and output level controls, true 48v phantom power, jack and XLR ouputs and dual VU meters.
Bypass you desk's mic amps and feel the quality!

NEW PRODUCT **£399.99** FACTORY DIRECT

RP562 Stereo Exciter

Traditional exciters usually do a good job of brightening up the extreme top end, but can often leave you with a rather harsh signal lower down. The incredible warmth of the Bellari Sonic Exciter ends all that, providing a sparkling top end with no harshness, and a huge bottom end to boot. The stereo unit has both Jack and XLR connectors, dual VU meters, and even a separate subwoofer output with it's own cutoff and level controls. ***Superb sound quality at a fraction of the price of similar devices.***

NEW PRODUCT **£299.99** FACTORY DIRECT

ADB3 Stereo Direct Box

Stand alone 2 channel tube DI box

NEW PRODUCT **£129.99**

MP110 Direct Drive Mic Pre Amp

Stand alone single channel tube mic pre amp

NEW PRODUCT **£169.99**

FINALIZER 2 MASTERING PROCESSOR

t.c. electronic

RRP **£1899.99**

MIKEMAN MIC PRE-AMP

RRP £349 **£169.99**

4 POLE FILTER

waldorf

NEW BOXED **£269.99**

VITALIZER STEREO JACK ENHANCER/EXCITER PROCESSOR

RRP £299 **£169.99**

X POLE FILTER

NEW PRODUCT **£439.99**

5021 IVORY RANGE 2 CH. VALVE COMPRESSOR

NEW

TL Audio

NEW PRODUCT **£469.99**

FOCUS EQ PARAMETRIC EQUALISER

UNDER HALF PRICE! Focusrite

Turnkey are well known for bringing you clearance deals at bargain prices, but not often does the chance come to own something as prestigious as Focusrite outboard, at a fraction of the original cost. The Focus EQ features an ultra high quality mic preamp complete with phantom power and phase reverse, as well as line and instrument level inputs, making it an excellent recording channel, or even a top quality preamp for bass or acoustic guitar. In addition to the four parametric EQ bands, there are also variable high and low pass filters, and the EQ and filters each have their own bypass switches. Typical Focusrite build quality can be taken for granted, as can some of the best sounding EQ you've ever heard. Very limited quantities available for this exclusive deal - order now or regret forever!

RRP £939 **£399.99**

DUAL MIC PRE DUAL CHANNEL MIC PREAMP

UNDER HALF PRICE!

One of the most transparent ways available of getting your mic signal down. Huge gain of up to 60dB per channel, ultra stable 48v switchable phantom power supply, 12dB per octave high pass roll-off filter, and an amazing Equivalent Input Noise figure of -128dBu. Small quantities only at this incredible price.

RRP £869 **£399.99**

The Quad Compressor an incredibly quality but affordable compressor..... £849.99

The Voicebox this combines a mic/instrument preamp, compressor, de-esser and parametric EQ in a single unit - the ultimate signal path for digital recording! £799.99

The Compressor highly versatile compressor with hard & soft knee types, separate limiter and gate and built-in sidechain filters £849.99

The Channel Strip similar to the Voicebox, but also featuring line level inputs and extra EQ £899.99

CALL TURNKEY PROFESSIONAL ON 0171 240 4036 FOR DETAILS

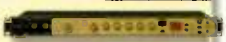
1201 TRUE STEREO FX PROCESSOR

ZOOM

The 1201 is a full 19" rack unit, featuring true stereo 16 bit processing at 44.1kHz with 64x oversampling converters. The quality of the reverb alone would make it worth the price, but there's lots more: two simultaneous effects are offered, from a choice of 33 including delay, chorus, flanging, tremolo and pitch shifting, 'vocoder', karaoke, lo-fi and exciter distortion effects as well as various reverb types including reverse. If one of the 363 presets doesn't suit exactly then using the two parameter knobs will allow you to tweak the program until it does, and the addition of 2 band EQ will further tailor the sound to your mix.

NEW PRODUCT **£99.99**

1204 TRUE STEREO FX PROCESSOR



The 1204 builds on the success of the original 1202 by adding MIDI control, 100 extra user presets for storing your own edits, and a two digit LED display. On top of this, there is also a rotary speaker effect, and a vocoder - a whole new mic input is even provided for quick and easy setup.

Nothing else touches these units at the price - check one out today!

NEW PRODUCT **£199.99**

REFLEX EFFECTS PROCESSOR

UNDER HALF PRICE! lexicon

Once the preserve of only the world's top studios, Lexicon reverb has become more affordable in recent years, but this Incredible exclusive deal means anyone can own one!

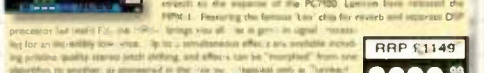
The Reflex packs stunning reverb quality together with other effects such as delay and Resonator, and some of the most comprehensive MIDI control available into a 1U rack unit. Reverse, gated and plate reverbs are included along with more traditional algorithms, and up to 10 editable parameters are available for each program. Lexicon's famous Dynamic MIDI allows for any four of these to be controlled in realtime via virtually any MIDI information - imagine varying decay time via note number, or feedback from your modulation wheel - the possibilities are endless! The best sounding reverb this side of an MPX1.

Limited stocks only - first come, first served!

RRP £469 **£199.99**

MPX1 MULTI EFFECTS PROCESSOR

lexicon



RRP £1149 **£699.99**

PCM80 + 2 CARDS AVAILABLE only £1399

OUTBOARD NEW, USED & EX DEMO

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AMEK 9098DMA	£899.99		£799.99	ZOOM 1202	£79.00
APHEX 651	£199.99	JOEMEEK STEREO COMPRESSOR			
BELLARI RP533	£349.99		£1049.99		

We will beat any genuine quote from a UK or European dealer at the time of order. We must be able to substantiate the quote and the goods must be available and in stock. Prices include 17.5% VAT. UK mainland carriage £9.99. Please allow [illegible] for delivery. Subject to status. Terms & conditions available.

KORG ensoniq ALESIS Steinberg Soundscape Technics Vestax HOHNER FATAR

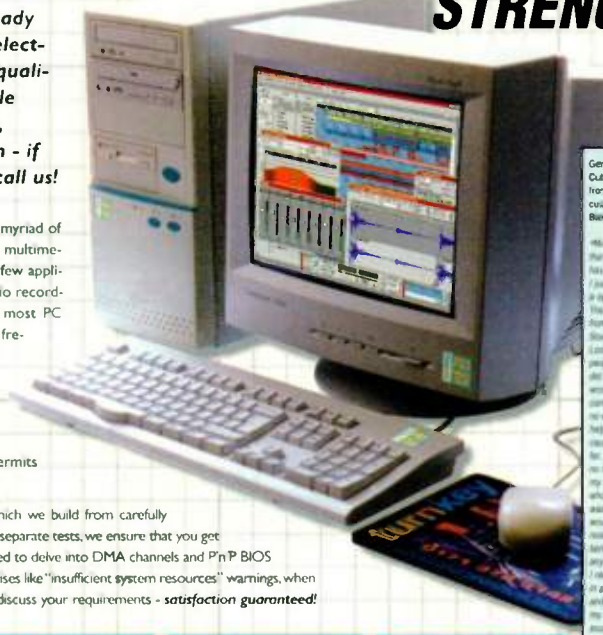
EUROPE'S LOWEST

turnkey PRO TECH

THE TURNKEY PRO TECH PENTIUM: A TOWER OF STRENGTH

Ringing round for the cheapest Pentium? We sell audio equipment - not office software and games! The computer is the heart of any studio setup, and a Turnkey Pro Tech audio-ready PC, built with carefully selected components, means a quality solution at an affordable price. We deliver a tested, working, integrated system - if you have a problem, just call us!

intel inside pentium



A modern **Pentium** can be used for a myriad of tasks ranging from desktop publishing, multimedia, games, and office work. However, few applications are as demanding as digital audio recording. Criteria which are irrelevant to most PC shoppers (such as the level of radio frequency interference within the casing), become very important, and sound cards which are otherwise considered "best buy" in the press often lack the essential "***full duplex***" ability which permits monitoring of audio during recording.

By supplying a pre-installed computer which we build from carefully selected components and run through 16 separate tests, we ensure that you get up and running immediately, you won't need to delve into DMA channels and P'n'P BIOS conflicts, and you won't get any nasty surprises like "insufficient system resources" warnings, when you try to run your software. Call us to discuss your requirements - ***satisfaction guaranteed!***

Genuine Email found on Cubase newsgroup from satisfied Turnkey customer Richard Blenkinsopp:

Hi, I've had all the problems that people seem to be having with compatibility, I just thought I'd tell about a system that works fine. You can get the whole kit from Turnkey (Sonic Soundhouse) in London. Leaving all the problems people have, I'm glad I did. If things do go wrong, there is only one contact point and there's no excuses for them not to help you. Mine has not caused any problems as far, and in fact interfaces more regularly than my Atari did (for anyone who doesn't know, this wasn't very often!). I wouldn't like to quote noise figures, but it is certainly as good quality as anything else I've heard. I recorded the same tune in a studio using ADAT, and someone on my PC in terms of sound quality (some people may have trouble believing this, but for what ever reason, it's true). Turnkey supply a fully tested system, which includes VST for under £1,200. It doesn't include all the usual bundled rubbish that normally comes with "high street" PC's, so if you want to thank Aunt Maud for that lovely sweater she knitted, you'll have to add the cost of a decent word processor, but for music it's great. They do plenty of options for larger hard drives, more RAM, a faster processor, DAT's sound card etc, it has's what you need, but my humble Print makes me with upto 20 tracks of digital audio, perfectly timed with MIDI tracks. PS - I don't work for Turnkey!!

CAKEWALK STARTER PACK

- Intel Pentium 200mmx (optional 233)
- 1Mb L2 cache RAM
- 32 Mb RAM (optional 64 Mb)
- 2 Gb HD (optional extra 4 Gb, 6 Gb, 9 Gb)
- 24x speed CD-ROM drive
- 14" SVGA display (optional 15", 17")
- Windows95 CD, keyboard & mouse
- Cakewalk Pro Audio V5.0
- 16 bit full duplex audio system
- Kurzweil GM Synthesizer
- 1x1 MIDI interface adaptor

RRP £1561 **£999.99**

CUBASE VST STARTER PACK

- Intel Pentium 200mmx (optional 233)
- 1Mb L2 cache RAM
- 32 Mb RAM (optional 64 Mb)
- 2 Gb HD (optional extra 4 Gb, 6 Gb, 9 Gb)
- 24x speed CD-ROM drive
- 14" SVGA display (optional 15", 17")
- Windows95 CD, keyboard & mouse
- Cubase VST PC V3.0
- 16 bit full duplex audio system
- Kurzweil GM Synthesizer
- 1x1 MIDI interface adaptor

RRP £1591 **£1149.99**

LOGIC / AUDIOWERK PACK

- Intel Pentium 200mmx (optional 233)
- 1Mb L2 cache RAM
- 32 Mb RAM (optional 64 Mb)
- 2 Gb HD (optional extra 4 Gb, 6 Gb, 9 Gb)
- 24x speed CD-ROM drive
- 14" SVGA display (optional 15", 17")
- Windows95 CD, keyboard & mouse
- Logic Discovery PC
- Audiowerk 8 in, 8 out card
- Logic Audio 1199 Upgrade Voucher
- 1x1 MIDI interface

RRP £1612 **£1149.99**

STEINBERG PRODUCER PACK

- Intel Pentium 233mmx
- 64 Mb RAM, 1Mb L2 cache RAM
- 24x speed CD player, 4x speed CD writer
- 35 blank CDs
- Over 2 Gb (program) & 8 Gb (audio) HDs
- 17" SVGA display
- Windows95 CD, keyboard & mouse
- Cubase VST PC 3.0 & Audiomedia Dynamics
- WaveLab CD mastering tools
- Korg 1212IO 12 ch digi PCI audio card
- Opcode Studiowire 16 ch MIDI interface

RRP £4062 **£2999.99**

- Add £99 for 233 MHz option
- Add £69 for 64 Meg RAM option
- Add £39 for 15" SVGA option
- Add £229 for 17" SVGA option
- Add £199 for extra 4 Gig HD
- Add £299 for extra 6 Gig HD
- Add £399 for extra 9 Gig HD

MU10 GM SOUND MODULE

YAMAHA

OUT OF THIS WORLD MEGADEAL!

Turnkey's incredible buying team have done it again! Yamaha's MU10 was already great value for money, but this exclusive offer makes it unbeatable! The "XG" range of products (including the famous DB50XG) has long been highly regarded for its 676 excellent sounds, 3 built in effects processors and superb integration with computers.

The MU10 comes in a handy module format which means there's no need to open up your computer, no IRQ conflicts or DMA problems, you just connect it to the serial port of your Mac or PC (cable included). What's more its MIDI in and out ports means it also acts as a MIDI interface, and it can be used as a stand alone module without a computer!

The 34 built-in effects can be used not only with the built in sounds, but also with any external signal (eg your voice, guitar etc) via the stereo audio input. The MU10 comes with the CD-ROM version of Steinberg's famous Cubasis MIDI sequencing software, and this incredible offer includes a shareware version of Yamaha's XgEdit editor free for detailed editing of the onboard sounds.

A complete starter kit for anyone looking to get into making music.
This exclusive offer is only available whilst stocks last - get your order in now!

Package available with Roland Sound Canvas or MIDI keyboard, HD size touch sensitive keys, microphone, headphones and cables only **£169.99**

RRP £199 **£115.99**

CAKEWALK PRO

CAKEWALK

OVER 60% OFF PRICE

Cakewalk has been the US #1 sequencer for ever. For a limited period, we are offering Cakewalk Pro v5.0, with 4 discrete audio tracks and 256 MIDI tracks for £79.00. That's less than the price of Cakewalk Home Studio! Upgrade option to Pro 6 (£49.99) or Pro 6 Audio (£109.99).

(Comes on CD-ROM. Also includes v4.5 for Win3.1)

Cakewalk Pro 5 + MIDIMan Dman £229.99
Cakewalk Pro 5, MIDIMan Dmsn + DB50 £335.99
Cakewalk Pro 5 + laptop MIDI Interface £149.99
Cakewalk Pro 5 + Pentium package £999.99

RRP £199 **£79.99**

SIBELIUS-7 TOP-END NOTATION V3.5

Sibelius

NOW MULTI PLATFORM - CALL FOR DETAILS

Call for a DEMO. One to one tuition also available upon request.

FROM ONLY **£499.99**

CODA FINALE 97

NEW VERSION NOW AVAILABLE

RRP £699 **£499.99**

MUSIC AT PASSPORT NOTATION / COMPOSITION

PASSPORT

RRP £129 **£89.99**

BAND-IN-A-BOX INTELLIGENT ARRANGER v7.0

PG music

#1 SELLER **£89.99**

FOR PC - MAC (v6.0) or ATARI (v5.0)

MIDI INTERFACES FOR PC COMPATIBLES

INTERFACES

Great bundled prices with any software

Gameport Cable fits any SoundBlaster™ type card	£25.00
MIDI Lite	1 in, 1 out serial interface for notebooks	£59.00
MPU401-II	1 in, 1 out MIDI card with Wavetable	£80.00
Winman 1in	Works easily with your existing sound card	£50.00
Winman 2x2	2 in, 2 out MIDI card for Windows only	£79.00
Portman 2x4	2 in, 4 out parallel interface for notebooks	£119.00
MIDI Edge 1x1	1 in, 1 out MIDI card with Wavetable	£129.00
Winman 4x4	4 in, 4 out MIDI / SMPTE card for Windows	£249.00
Portman 4x4	as Winman4x4 except for Parallel port	£219.00

DMAN 2044 PCI DIGITAL AUDIO CARD

midiman

NEW

Behind new high-performance PCI digital audio card. Featuring 4 independent inputs and outputs, 20 bit delta-sigma converters with 128x oversampling on-board DSP able to perform real-time effects processing on each channel.

Really really easy installation with Win95 (Plug 'n Play). After putting the card in, switch the PC on, and insert the disk when prompted. Takes about 90 seconds and will even run Hoops de an existing sound card.

Buy with Cubase for only £529.99!!!

NEW PRODUCT **£269.99**

CUBASE VST FOR PC!

CUBASE

Steinberg

The industry standard MIDI sequencer is now even better value than ever! Version 3 now includes full hard disk recording facilities as on the Mac that work with virtually any soundcard.

Get £50 off Score version at only £449.99

RRP £329 **£299.99**

CUBASE VST MAC

As well as all the great sequencing and audio recording facilities you've come to expect from Cubase, Power PC owners can now take advantage of up to 32 audio tracks, complete with built in digital EQ, DSP, reverb and FX! ***Get £50 off Score version at only £449.99***

AUDIOWERK 8 HARD DISK RECORDING CARD

INCLUDES FREE LOGIC AUDIO DISCOVERY!

emagic

RRP £499 **£449.99**

1212 I/O PCI AUDIO CARD

KORG

RRP **£599.99**

REBIRTH RB-338 SOFTWARE SYNTHESISER

RRP **£149.99**

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PRICES GUARANTEED*

A DIGITAL HURRICANE IN YOUR PC?

turtle beach

99% of available sound cards use the old-fashioned "DMA" system of recording audio in order to be compatible with Soundblaster games. With the Pinnacle and Fiji, Turtle Beach abandoned this system in favour of their proprietory Hurricane architecture. Basically, it gives you more tracks than DMA on the same PC hardware, and leads to less driver conflicts.

DMA

The Turtle Beach Multisound series has long been considered the "Rolls Royce" of sound cards, from the very first Multisound in 1993, through to the highly respected Tahiti card, and now - the Multisound Pinnacle.

FREE DIGITAL ORCHESTRATOR PLUS WITH PINNACLE (WORTH £129)

The audio quality of the Pinnacle is beyond reproach, based around a Motorola DSP, with 20bit convertors on both record and playback, 64x oversampling, and Delta/Sigma convertors. An on-board Kurzweil chip provides a top-quality set of synth sounds, which can be augmented with your own samples which can be mapped to a MIDI keyboard via the SampleStore™ control panel. (Up to 48 Meg of samples can be loaded, depending on the size of SIMMs fitted). Create your own drum-kits, mix in break-beats sampled from CD etc... etc...

CUBASE VST £549.99 PACKAGE WITH FIJI

CWALK PRO AUDIO 6 £599.99 PACKAGE WITH FIJI

LOGIC AUDIO £649.99 PACKAGE WITH FIJI

ADD £75 FOR PINNACLE INSTEAD OF FIJI
ADD £99.99 FOR S/PDIF DIGITAL I/O

Other upgrade options include a synth daughter-board (eg DB50XG), cable for MIDI interface, and S/PDIF daughter board allowing direct digital transfer to/from DAT, CD player, MiniDisk etc... (£99.99 for either card). The Pinnacle is bundled with Voyetra's D.O.P. sequencer which gives up to 16 audio tracks with digital effects (eg reverb, delay....) depending on hardware specification.

FIJI £299.99

A PINNACLE WITHOUT SYNTH & SAMPLESTORE
ALSO INC. FREE DIGITAL ORCHESTRATOR SE

PINNACLE £375.99

INC. FREE DIGITAL ORCHESTRATOR PLUS

- 20 BIT DAC / ADC
- Enhanced or Std Duplex
- Sample Store (up to 48 Meg)
- WaveBlaster™ Connector (for DB50)
- Optional S/PDIF Daughterboard
- Kurzweil Wavetable Synth

K2000/K2500 SYNTH/SAMPLE WORKSTATIONS

KURZWEIL

In many people's eyes, Kurzweil's K2000 and K2500 represent the pinnacle of sampling/synthesis technology. Both machines feature VAST synthesis and play back samples as standard, with optional boards allowing sampling in both digital and analogue domains. The K2000 has true 24 note polyphony (96 oscillators), whilst the K2500 has a whopping 48 notes (192 oscillators). The superb presets are expandable using up to 3 expansion boards, sample and preset RAM are also fully expandable, whilst a comprehensive sequencer and built in FX make these true workstations. Multiple outputs, a range of keyboard and rack versions - far too many features to mention here. Call the experts at Turnkey for more information, we have the full range on demo and in stock, including all accessories and library.

FROM £1399.99

CD3000XL SAMPLER WITH CD-ROM DRIVE

INC FREE 32 MEG

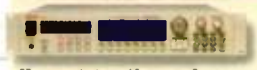
AKAI

This incredible deal on the CD3000XL makes it by far the best value for money in the AKAI range - just look at the spec sheet: 10 outputs, SPDIF digi i/o, built in CD ROM drive also allows digital sampling from audio CDs, 2 track hard disk recorder built in (requires drive) can be triggered by MIDI, classic AKAI user interface, takes all the same boards as the S3000XL, bundled with MESA editing software. Turnkey's amazing offer also includes 32 meg of RAM and 4 CD ROMs (including 3 Zero G titles) absolutely free! Limited stocks only - grab yours whilst stocks last!

RRP ~~£1999~~
£1299.99

S3000XL WORKHORSE SAMPLER

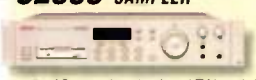
INC FREE ZIP DRIVE & 32 MEG



Akai continues it's tradition of supplying workhorse samplers to the studio market with this sturdy offering. The compact 2U rackmount machine features 32 note polyphony, 10 outputs, 2 meg expandable to 32 with SIMMS, SCSI as standard, MESA editing software, and a whole range of expansion abilities including digital i/o and an extra filter board. *Buy from us and get 32 meg and a ZIP drive free!*

RRP ~~£1799~~
£1499.99

S2000 SAMPLER



Akai's entry level studio sampler, the S2000 doesn't skimp on features. 32 note polyphony, low pass resonant filters, 2 meg RAM expandable to 32 meg, optional 8 output board and quad FX board. Comes bundled free with MESA software to allow full graphic editing from your computer.

RRP ~~£999~~
£799.99

Now bundled with SCSI interface, 12x speed CD-ROM drive, ZIP drive and EMU ir Rifle for the incredible price of only £999.99

We endeavour to keep all AKAI expansion boards in stock at all times, including those for the more obscure and discontinued models. Here are some examples of ways to get the maximum out of your sampler or hard disk recorder:

IB208P	8 outputs & digi i/o for S2000	£249
IB304F	2nd filter board for S2000/S3000XL	£299
EB16	multi FX board for S2000/S3000XL	£299
EXM3008	8 meg expansion for S2800/S3000/S3200/CD3800	£399
EXM008	8 meg expansion for S1000/1100	£399
IBM208P	8 outputs & digi i/o for MPC2800	£249
IB807V	monitor output board for DR8/DR16	£499
IB804AEX	8 in 16 out ADAT interface for DR16	£399
IB803M	MIDI interface for DR8/DR16/DD8	£199
IB802T	SMPTE board for DR8/DR16/DD8	£249

S20 SAMPLER

All new sampler from the makers of the industry standard, the S20 brings quality sampling to a new affordable level. 16 bit sampling gives great quality, and the standard 1 meg memory is expandable to 17 meg, giving up to 18 minutes sampling time depending on the sample rate used. Built in sequencer means you can build up grooves without the use of a computer, and the special auto loop tempo mode makes BPM calculation a doddle. The 1.44 meg disk drive reads floppies from virtually all Akai samplers giving you instant access to a huge library of sounds.

Megadeal only at Turnkey - get your order in now!

RRP ~~£499~~
£POA

ZIP REMOVABLE DRIVE

INC DISK & 25 PIN SCSI CABLE

IOMEGA

There was a time when hard disks were a luxury for sampler owners, but with the advent of the ultra cheap Iomega Zip Drive, this has become a thing of the past. For under £130 the Zip drive stores 100Mb (94Mb formatted) on each cartridge. A must for anyone with more than 2 meg of RAM!

RRP £219
£149.99

SP202 SAMPLING UNIT

BOSS

More functionality than the original Fastlane for under £300! The SP202 offers 16 bit sampling with sample rates up to 32 kHz, giving a maximum of 4' 20" sampling time, or 37 using optional PCMCIA memory cards. Features like timestretch, filter, delay and ring modulation mean this machine has to be taken seriously, and the built in automatic BPM calculator, together with tap tempo function is a godsend for loop merchants. The built in mic and battery operation (optional PSU available) makes it great for sampling on the move. Ideal for DJ's or anyone amassing samples on a budget, even studio will be very limited - get yours or die in early!

RRP
£299.99

MPC 2000 SAMPLING DRUM MACHINE

Ever since the launch of the Roger Linn MPC60, Akai have led the way in sampling drum machines. It's latest evolution, the MPC2000 is a lot more than a glorified drum machine however - the 64 track sequencer is a development of what most people consider to be the only real alternative to cubase power based setups (32 MIDI channels are available), the sampling section is virtually identical to the best selling S3000, SCSI is standard, and the outputs can be expanded from 2 to 10 and digi i/o for only £249! There are far too many other features to mention here - on demo now at Turnkey.

RRP £1199
£1149.99

INC FREE 8 MB RAM

PROTECH 12x CD-ROM DRIVE

PRO TECH

If you want access to large amounts of sample data at a reasonable price, there's no better way to do it than via CD-ROM. Hundreds of discs are now available full of everything from orchestral instruments to hip hop loops, all ready prepared to load into your sampler. In theory SCSI is SCSI, but in practice it's not the case, particularly when it comes to samplers. Drives that work perfectly with one machine will often flatly refuse to work with another. So we've taken the guesswork out, and come up with a bargain priced CD-ROM drive that works with all current Akai, Emu and Roland machines, and what's more, it runs at 12x internal speed, for ultra quick loading (actual speed depends on SCSI spec of sampler). Guaranteed to work! Supplied with connector for 50 pin SCSI specification sampler - when ordering may require additional cable).

NEW PRODUCT
£169.99

SU10 SAMPLING UNIT

INC 2 FREE TIME & SPACE CDs

YAMAHA

Yamaha's SU10 is a groomed breaking unit, making professional quality stereo sampling available to everyone. Up to 64 seconds of sampling is available and 48 samples can be held in memory at any one time. Samples can be filtered, mirrored, looped, crossfaded, pitchshifted and even scratched using the ribbon controller. The built in sequencer means you can produce your own tunes using just this unit! The SU10 comes bundled with 2 free Time & Space CDs containing around 800 samples.

RRP £299
£249.99

ALSO AVAILABLE WITH 3 OCTAVE MIDI KEYBOARD only £319.99

E6400 SAMPLER

INC FREE CD-ROM DRIVE 5 CD-ROMS & 16 MEG!

EMU

Building on the success of the E64 comes this E6400 from EMU. Now 8 as coming with 4 meg of RAM as standard and all the features of version 2 software, expandable to 16 meg with options including an extra 8 outputs, 32 MIDI channels, 18 bit dual stereo FX processors and up to 128 note polyphony!

Huge E-MU CD ROM library available at Turnkey.

RRP £2499
£1799.99

ESI4000 NEW SAMPLER

TURNKEY MEGADEAL INC. 32 MEG, CD-ROM DRIVE, 5 CDs & ZIP DRIVE!

The ESI4000 has all the features of the ESI32 we have come to know and love, but now has 64 note polyphony, memory capacity of up to 128 meg, and an operating system upgrade giving you E4 style multi mode filters. All E-MU samplers come with free access to our enormous sample library (we have all the ESI library on CD-ROM) and of course, excellent technical support.

Stocks are very limited on this superb package deal - call to reserve yours now!

RRP £1693
£1299.99

CALL NOW! EXP. BOARD ALSO AVAILABLE only £299.99

COMPUTER NEW, USED & EX DEMO

1.3GIG IDE DRIVE..... £40.99	APPLE 7300/200 PPC... £999.99	..... £168.99
2GIG DAT DRIVE..... £369.99	APPLE 8600/200 PPC... £1749.99	EMAGIC LOGIC PC..... £219.99
6 SPEED CD ROM..... £89.99	DIGIDESIGN AUDIOMEDIA 2	OPCODE MAX SOFTWARE
9GIG EXTERNAL DRIVE £499.99	..... £298.99	..... £199.99
APPLE 630 ..... £329.99	DIGIDESIGN DP/1 ..... £88.99	STEINBERG CUBASE AUDIO PC
APPLE 6400/200 PPC... £798.99	EMAGIC DISCOVERY AUDIO PC	..... £

SAMPLING NEW, USED & EX DEMO

AKAI MPC2000 ..... £869.99	EMU E4K/VOICE EXPANSION	ROLAND DJ70MK2..... £749.99
AKAI REMIX 16..... £369.99	..... £549.99	
EMU E4K/OUT EXPANSION £428.99	EMU E64..... £1,449.99	

A3000 SAMPLER

YAMAHA

Arriving any time now, Yamaha's A3000 is their first entry into the sampling market for almost ten years, but this break has allowed them to take a good look at the market and come up with a highly competitive product. 64 note polyphony, four outputs (expandable to twelve plus digi i/o), WAV file compatibility and memory expandable up to 128 meg, means this the A3000 must be taken seriously at this price. Call for full details on a demo.

RRP £1299
£999.99

We will beat any genuine quote from a UK or European dealer at the time of order. We must be able to substantiate the quote and the goods must be available and in stock. Prices include 17.5% VAT. UK mainland carriage from £9.99. Please allow 10 working days for cheque clearance. Errors & omissions excepted.

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EUROPE'S LOWEST

Mark of the Unicorn

THE COST OF RECORDING - KEEPS ON FALLING!

Twenty-four track digital recording for under a grand?! No, you're not dreaming, Mark Of The Unicorn's new 2408 has twenty-four ins and outs in both ADAT and TDIF format, as well as eight analogue ins and outs all in a 1U rack!

MOTU 2408 HARD DISK RECORDING SYSTEM

The system doesn't stop there though, there are also two channels of SPDIF i/o which allow digital dubbing between an SPDIF source and either ADAT or Tascam machines, and you can also dub directly between ADATs and Tascams. Synchronisation is amply catered for with an ADAT sync in, word clock in and out, and a MOTU Control track input for sample accurate Digital Timepiece sync.

The PCI-324 card is included for use in either Macintosh or Windows computers, and it will allow you to connect up to three 2408s for seventy-two ins and outs, and as many channels as your computer allows! The 2408 is also shipped with fully featured work-station software for Mac, with recording, editing, mixing and real-time effects processing, whilst a standard Windows driver is included for PC compatibility.

All in all, a ground breaking product in terms of price / performance, features and com-pactness - call today to arrange a demonstration.

- *Twenty-Four Inputs and Outputs on One Interface*
- *Connect up to Three Interfaces to One Card*
- *ADAT, TDIF and Analogue Connections all Catered for*
- *Multi Platform Compatible with Drivers Included*

NEW PRODUCT **£995.99**

QUASIMIDI

RAVE-O-LUTION 309
DANCE WORKSTATION

The Rave-O-Lution 309 is undoubtedly Quasimidi's best and most innovative product to date. Imagine the raw powerful sound quality of Roland's TR909 and TB303, give them 50 times as many sounds, add resonant filters to the drums, and you've still only got half the instrument that is the Quasimidi 309! Knobs for all functions all send out MIDI controllers, built in real-time and step-time sequencer, 2 on board effects processors & EQ, optional rack ears, typical German build quality - far too many features to mention here! The ultimate dance production workstation, must be heard to be believed. "superb bass synth ... excellent drum sounds ... one of the most immediately useable products on the market" - Sound On Sound.

Call for a free demo CD. Money back within 7 days if not satisfied (ask for conditions).

FACTORY DIRECT **£499.99**

SYNTH & DRUM EXPANSIONS ALSO AVAILABLE only £79.99

309 AUDIO-EXPANSION

Input / output expansion board now available only £149.99. 2 extra outputs, 2 inputs allowing you to route any 2 external signals through the AES synthesis. Also comes with new operating system with many new features.

FACTORY DIRECT **£119.99**

POLYMORPH
SYNTHESISER

Coming soon, the Polymorph is a four part analogue style synthesiser, with 8 note polyphony, 4 outputs and superb 309 style realtime editing facilities and sequencer & FX.

Call for more details.

FACTORY DIRECT **£769.99**

ATC-1
ANALOGUE MONOSYNTH

Studio Electronics started out life as a company that serviced and modified old Moogs, moved on to producing remanufactured Mini Moogs in 19" rack form, and then developed the SE1 - a modern Mini Moog whose components were painstakingly researched to provide an instrument that was according to the reviewers indistinguishable from the real thing.

Most recently has come the ATC-1 Tone Chameleon - hand crafted in the USA in the same way as their previous products, but with reduced cost due to less knobs but a vastly increased sound palette thanks to the ingenious use of filter cartridges to emulate the best sounding instruments of yesteryear. Editing is a breeze thanks to an individual button for each function, and a large central parameter dial.

Circuitry is analog throughout - right down to the oscillators, and the sound is needless to say, superb. There are 2 LFO's (one syncs to MIDI), three envelopes, and virtually all parameters can be controlled over MIDI. The ATC-1 is supplied with the Moog Moog filter, and can also be fitted your choice of a TB303, ARP 2600 or Oberheim Xpander filter (only £69 each) and for the filter freakiest amongst you the Filter Selector (only £199) takes all 4 filters simultaneously, and the filter type is automatically stored with each patch, avoiding the need for switching. The rear panel sports an audio input, and **CV & gate** ins and outs as well as the usual MIDI connections.

Incredible reduction on another Turnkey exclusive - quality doesn't have to break the bank!

RRP £899 **£469.99**

VIRUS
VIRTUAL ANALOGUE SYNTH

access

Control specialists Access have used all their considerable expertise in the design of their new 'virtual analogue' synth, the Virus.

All major parameters have their own dedicated knob or switch, and an 'expert' mode allows super detailed editing via the LCD display and parameter controls. Of course, all edits send out controllers in realtime. Synthesis facilities are unparalleled - 64 oscillator waveforms (2 per voice), 3 LFO's, 2 multi-mode filters per voice, oscillator sync, filter overdrive, built in FX - you name it, it's got it!

12 note polyphony, 16 part multitimbrality, 6 outputs and 2 filter inputs mean you're not just limited to one sound at a time. We're so confident that you'll love this synth that we're offering a seven day money back guarantee (ask for conditions).

The most flexible and best sounding virtual analog on the market.

NEW PRODUCT **£899.99**

SYNTH MODULES

EMU

ORBIT
PLANET PHATT
CARNAVAL

Emu have taken their wealth of experience in making modules such as the Proteus Vintage Keys and Morpheus, combined it with the filters from the incredible Emulator 4 and with their usual innovation, come up with the Orbit, Planet Phatt and Carnaval.

The Orbit is stacked full of classic drum sounds, pulsating basses, ambient pads, as well as a huge variety of fxs and effects. Planet Phatt brings a new definition to swing, and the Carnaval is ideal for dance grooves as well as Latin specialists.

The inclusion of the E4's 16 different types of 6 pole filters mean that these modules have more power & filtering than any other synth. Finally the 'BEATS MODE' includes a wide selection of loops and grooves, which can have their pitch changed without tempo change and vice versa, and even their sounds too!

V2 software now gives improved beats mode and other enhancements.

Orbit upgrade available for only £69.99.

RRP £869 **£799.99**

DEEP BASS 9
TB303 CLONE

Control Synthesis

UNDER HALF PRICE!

A great sounding TB303 clone. 16 rock with 1 knob per function, all the sound controls of the 303 are duplicated, filter cutoff, accent and glide all controllable over MIDI. Audio input allows treatment of external signals by the filter etc, and CV / gate in / out also means it can be used as a MIDI - CV converter. An excellent analog bass machine - this unbelievable price on the end of the line means they will sell out very quickly!

RRP £449 **£199.99**

JV1080
SYNTH MODULE

Roland

In the same way as the S1000 became the industry standard sampler, Roland's JV1080 has become the industry standard synth module. It's not hard to see the reason why - straightforward operation combined with top flight sound quality and a huge range of sounds.

But expandability of the machine is where it really comes into it's own. There are over 10 different expansion boards which can be fitted (up to 4 at once), each one with as much ROM as the original machine, covering sounds from Vintage to Orchestral and Dance to World. At Turnkey we have the full range in stock, as well as an unbeatable price on the machine itself.

RRP £1199 **£POA**

JV2080 SYNTH MODULE

The Roland JV1080 has been become the industry standard sound source for home studios and professionals alike. It's superb sound quality, 64 note polyphony and expandability were a winning combination.

Now the new JV2080 builds on that success by offering a giant editing screen, three independent effects processors as well as reverb / delay and chorus, and room for 8 of Roland's renowned expansion boards - the potential is virtually limitless! Judging by the success of the JV1080 these will be in strong demand - call us now!

RRP £1399 **£POA**

We will beat any genuine quote from a UK or European dealer at the time of order. We must be able to substantiate the quote and the goods must be available and in stock. Prices include 17.5% VAT. UK mainland carriage from £9.99. Please allow 10 working days for cheque clearance. E&OE. Subject to availability.

PRICES GUARANTEED*

WALDORF MICROWAVE XT

waldorf

THE FUTURE'S ORANGE!

A classic - with knobs on! The Microwave XT takes all the features of the incredible Microwave II and adds new software and the user interface you've been waiting for! It's simplicity of use is obvious with knobs everywhere (which all send MIDI controllers) and a 2x40 character back lit LC,. whilst at the rear, the Microwave XT has 2 fully modulatable stereo outputs which are configurable as 4 monos with panning.

Sound generation comes from a powerful DSP generating unique wavetables, and the ten voices each feature two oscillators, two wave generators, one mixer, two filters in series, one stereo amplifier, four envelopes, two LFOs, and one modulation matrix with 16 slots and several 'modifiers'! More than enough to keep even the most demanding knob twiddler satisfied! The awesome sound has been further enhanced by a superb new sound set, with many patches being a performance in their own right. And what a paint job!

All this adds up to make the Microwave XT a highly desirable instrument - call us now to make your mix (and your rack) stand out from the crowd.

- *Classic and Unique Waldorf Wavetable Sound*
- *All Knobs Send out MIDI Controllers*
- *Arpeggiator per Sound Syncable to MIDI*
- *8 Part Multitimbral & 10 Note Polyphonic*

RRP **£1099**

MEGADEAL ALERT NEW LOW PRICE!

FAT

FREEBASS TB303 CLONE

If you need the unique sound of an original Bass Line™, but can't afford the inflated prices that go with it, then Freeform Analog Technologies' Freebass is the product for you!

It's the only authentic sounding TB303™ clone on the market, and it's got MIDI! 1U rack with 1 knob per function, all the sound controls of the 303 are duplicated, Cutoff, Resonance, Envelope Mod, Accent, Tune and Decay. Waveform is continuously variable from square wave to sawtooth, and an auto tune button is included to retune the oscillator - no more continual drifting!

On top of this, there's an audio input to the filter stage, allowing you to process any external signal with the FB383's powerful synthesis. The ultimate analog bass machine - this incredible price means these will fly out of the door! Another Turnkey exclusive.

- *Superb Sounding TB303™ Clone*
- *Fraction of the Price of an Original*
- *External Input to the Filter*
- *Exclusively Available at Turnkey*

FACTORY DIRECT

RRP £199

£129.99

DM5 DRUM MODULE

OVER 60% OFF PRICE

ALESIS

The DM5 offers superb performance features and an excellent selection of drum, percussion & FX samples putting over 540 all-new studio drum sounds into a 1u rack space, many recorded in true stereo and with ambient effects. It's Expanded Dynamic Articulation feature allows sounds to change volume, tone, and pitch according to MIDI velocity. The Random Sample feature realistically varies the sound of the drum as you play. The DM5 includes an ultra-fast trigger-to-MIDI converter with 12 trigger inputs, 4 audio outputs and a backlit LCD display. The drum sound for you is waiting right here!

Another Turnkey megadeal!

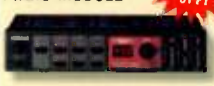
RRP £429

£269.99

P50-m PIANO MODULE

ALMOST 60% OFF!

YAMAHA



At this price, can your group afford to be without a piano module - no more need to lold up lengthy samples or chew up valuable polyphony! The P50M takes the dazzling sounds from Yamaha's flagship stage piano, the £5,000 P500 including grand and upright pianos, CP80, Rhodes, Wurlitzer, Clavinet and DX electric sounds. Many instruments are sampled in stereo for stunning realism, certain tuned versions are available, and there are 32 different effect types (2 simultaneously) to choose from, as well as a 3 band equaliser. 32 note polyphony means you should never run out of notes, but for chords with a heavy right foot, two modules can be commanded in overflow mode for a whopping 64 notes, and there are seven velocity response curves to choose from to suit any playing style.

A bargain at the full price, this amazing deal means that stocks will not last long - call for yours now!

RRP £309

£169.99

RY8 RHYTHM MACHINE

The RY8 has to be the most versatile rhythm machine on the market. As well as 128 of Yamaha's finest drum and percussion samples, 12 drum pads, 200 preset patterns, 50 user patterns, and 12 customisable drum kits, the RY8 also has a selection of 50 instrument sounds including basses, pianos, strings, guitars, leads and many more. There are an additional 200 accompaniment patterns, playing 1 bass, 2 rhythm and 1 lead part each, chord changes are user definable and there are 4 sequences for each pattern. But there's more! Plug in a guitar or a microphone and the built in pitch to MIDI converter allows you to play any of the instrument sounds directly, without a MIDI keyboard or special interface. MIDI in and out (sync to MIDI clock), two diskette drives, battery or mains powered - absolute bargain!

Exclusive end of line offer - buy now whilst stocks last!

RRP £189

£129.99

MDF2 MIDI DATA FILER

Direct to disk MIDI data filer stores system files from virtually any MIDI device for sound storage etc, as well as recording and playing back. Standard MIDI Files - perfect for live use as well as the studio!

Exclusive end of line clearance only at Turnkey - buy now while stocks last!

RRP £379

£199.99

M-BD1 SOUND MODULE

UNDER HALF PRICE!

Roland

Over 50% off on this top quality bass & drum module. Packed full of superb acoustic and electronic sounds of typical Roland quality, the M-BD1 is 28 note polyphonic and 8 part multitimbral, and has 2 built in FX processors. Makes an ideal addition to any MIDI setup, providing the bread and butter sounds for a wide variety of tracks.

Very limited quantities - order now to avoid disappointment.

RRP £469

£169.99

M-GS64 SOUND MODULE

ALMOST 60% OFF!

654 top quality Roland sounds (and 24 drum kits) for under £250? That's right! And what's more you get 64 note polyphony, 32 part multitimbrality and 4 outputs thrown in! The MGS64 features a complete range of eminently useable sounds, from pianos to pads, synths to snare drums and basses to brass. If you need a sound in a hurry, the chances are you'll find it here, and the MGS64 is fully GM and GS compatible for all you MIDI file buffs out there. Only a few on this incredible end of line clearance deal. Don't wait too long!

RRP £599

£249.99

RHYTHMTRAK 234 DRUM MACHINE

ZOOM

Whilst drum machines have remained little changed in recent years, the 234 obviously brings some fresh thinking with it, together with a fresh price! As well as all the usual drum and percussion sounds, the 234 also incorporates some of the best electronic hits we've ever heard, together with a huge range of Linn and other ethnic sounds, and 50 bass programs! Parameters such as level, pitch and hi-hat opening can be edited in real time, whilst pads can be mix to trigger whole patterns for the ultimate in instant creativity.

NEW PRODUCT

£199.99

TR-RACK SYNTHESIZER RACK

NEW KORG

Love the sounds of the Korg Trinity range but don't have room for another keyboard? Here's the answer you've been waiting for! Huge screen for easy editing, four outputs, 32 polyphony, and the huge fat sounds that Korg are famous for - from long evolving pads to exciting effects.

Initial stocks are very limited - order now to avoid disappointment.

RRP £999

£949.99

MC-505 GROOVEBOX DANCE WORKSTATION

NEW Roland

Take an MC303 Groovebox, add an extra effects processor, a D-Beam infrared controller, a RAM card slot, enhance the arpeggiator and what have you get? An MC505! Well not quite in fact - the MC505 also has up to 4 times per voice more user patches and patterns (256 and 200), and up to 64 note polyphony. 8 front panel sliders make mixing a breeze, tweak sticks are great - call us now!

NEW PRODUCT

£949.99

MC 303 ALSO AVAILABLE only £499.99

SOUND MODULES NEW, USED & EX DEMO

ALESIS MONITOR 1 ... £229.99	QUASIMIDI TECHNOX ... £399.99	ROLAND SC50 ... £199.99
EMU CARNAVAL ... £499.99	ROLAND MBD1 BASS/ DRUM ...	ROLAND VG8 ... £1,599.99
EMU MORPHEUS ... £499.99	... £169.99	STUDIO ELECTRONICS ATC1
EMU ULTRAPROTEUS ... £599.99	ROLAND MC50MK2 ... £349.99	... £449.99
HAMMOND XM1 ... £569.99	ROLAND MGS64 ... £199.99	TECHNICS SXWSA1R ... £549.99
MARION PROSYNTH ... £399.99	ROLAND PK5 ... £199.99	

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EUROPE'S LOWEST

SIRIUS
DANCE WORKSTATION

QUASIMIDI

NEW

The dance sensation of the year! Following hot on the heals of the award winning Rave-O-Lution 309, Quasimldi bring you the incredible new Sirius keyboard - a complete dance production workstation all in one.

The Sirius features the same acclaimed Analogue Emulation Synthesis as used in the 309, but gives you 3 synth parts with 12 note polyphony as well as the usual drum and percussion sections. But the innovation doesn't stop there, the built in Vocoder can take its modulator and carrier signals from any combination of internal or external sources (or the accompanying gooseneck mic), and for any budding DJ producers, the Sirius can be synced directly to a record deck or other audio source by automatic tempo analysis. Built in FX, a 4 octave velocity sensitive keyboard and a mod wheel that's assignable to multiple parameters simultaneously, round of a tour de force product that's sure to be highly desirable.

FACTORY DIRECT **£799.99**

Call now for full details, or to reserve your unit!

Wave
Synthesiser

TURNKEY EXCLUSIVE! waldorf

We now offer a new custom range of Wave synthesisers with 76-note keyboards in four colour options - standard blue, red (as shown), Sahara and black. Totally unique sound.

PRICES FROM **£6299.99**

K5000s
ADDITIVE SYNTH

KAWAI

In this age of many 'soundalike' simple + synth keyboards, it's not often you get something coming along with a completely fresh approach. Kawai have dared to be different though with the K5000S, and reintroduced additive synthesis. This has been tried in the past, but the limited DSP power has severely curtailed the possible results. The only method of synthesis that can theoretically produce any possible sound, additive has a palette which ranges from superb acoustic simulation, to timbres quite unlike those offered by any other synth. The inclusion of a traditional synthesis section complete with an incredibly powerful filter means it's also a cinch to create fantastic analogue style sounds, and a generous complement of knobs which all send MIDI controllers add to the ease of use.

Incredible new low price only at Turnkey!

RRP £1199 **£849.99**

RACK VERSION ALSO AVAILABLE only £899.99

PROPHECY
VIRTUAL MONOSYNTH

OVER 40% OFF! KORG

The Prophecy is already a legend in its own lifetime and this incredible new low price makes it better value for money than ever. Virtual synthesis not only gives some great acoustic simulations, but also superb analog sounds, from Moogs through ARP's to some of the classic Rolands. The keyboard that revived the arpeggiator still has one of the best around today, and the ribbon controller and knobs galore make for a highly expressive instrument.

Limited stocks only at this price - buy now or forever hold your peace!

RRP £899 **£499.99**

TRINITY
KEYBOARD WORKSTATION

KORG

When it comes to workstation keyboards, the Korg name is legendary. Their current flagship product, the Trinity not only features the customary range of exemplary sounds, but also touchscreen technology to make it one of the most intuitive instruments on the market, and a range of options to turn it into a fully fledged recording studio: sample playback (Akai compatible), Prophecy expansion board, and even hard disk recording!

TRINITY PLUS £1[illegible].99
TRINITY PRO £1[illegible].99
TRINITY PRO X £2[illegible].99

RRP £2345 **£1449.99**

CALL SOHO SOUNDHOUSE ON 0171 379 6766 FOR DETAILS

AN1x
VIRTUAL ANALOGUE SYNTH

YAMAHA

The analogue emulation market is hotting with this exciting new release from Yamaha. Building on the incredible success of the CS1X, the AN1x is built on the same design principles, but uses technology from the groundbreaking VL range to produce stunning virtual analogue sounds. With a 5 octave aftertouch sensitive keyboard, 10 note polyphony, 8 knobs and a ribbon controller, and built in effects, the AN1x is sure to be an instant hit.

Demand will far outstrip supply - get your order in early!

RRP £899 **£729.99**

HP 330e
HAMMER ACTION PIANO

Roland

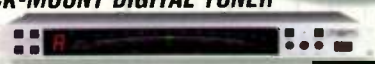
Taken from the latest updated Roland range, the HP330e is the perfect instrument for beginners and accomplished pianists alike. Encased in a newly-refined cabinet, this hammer-action digital piano features excellent stereo samplings of grand pianos as well as several other fine sounds, including harpsichord, vibes & strings, all with a truly authentic touch.

RRP £1799 **£POA**

CALL CHARING CROSS KEYBOARDS ON 0171 497 5559 FOR DETAILS

DTR-1
RACK-MOUNT DIGITAL TUNER

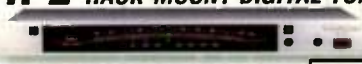
KORG



- Oversize easy to read LED meter.
- Auto tuning with 3 selectable modes; Strobe, Cent, Hz.
- Two tuning inputs to handle tuning of 2 instruments.
- Built-in microphone is perfect for tuning acoustic instruments.
- 3-Octave reference tone. • Cable check function.

RRP £249 **£169.99**

DTR-2
RACK-MOUNT DIGITAL TUNER



- Rack-mount auto chromatic tuner with large LED meter.
- Full 7 octave tuning range.
- Auto reference calibration function can automatically calibrate the tuner to instruments that are not easily tuned.

RRP £149 **£99.99**

JP-8000
ANALOGUE MODELLING SYNTH

Roland

So far, modelling technology has been used to recreate acoustic timbres, but Roland are the first to specifically model true analogue synthesis with their new Analogue Modelling technology, and believe us, the results are spectacular!

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76 NOTE WEIGHTED ACTION

Roland

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£3499.99

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NEW

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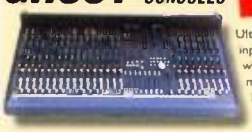

Ultra low noise inputs, 4 band EQ with 2 fully parametric mids, up to 12 auxiliary sends, MIDI mute automation and MTR transport control are a few of the features that put other project consoles to shame (no MIDI on LE versions)

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AKG

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High quality diversity radio mic systems have always been the province of the professional, due to the high costs often associated with them. AKG's WMS51 system breaks that tradition, offering an unbeatable price / performance ratio. The system consists of a belt pack transmitter which can accept any of the Micro Mic II series (handling anything from La-Vaier applications to sax), or electric guitar (cable included) whilst reception is handled by the SR51, a half rack receiver featuring balanced and unbalanced outputs, a control for squelch (RF interference rejection) and [illegible] Unbelievable clearance deal only at Turnk[illegible]

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The C3000 uses all of AKG's experience in building large diaphragm mics such as the C12 and C414, but by using modern manufacturing techniques, and only offering two patterns (cardioid and hyper cardioid), the price has been kept to a minimum. Its open sound and superb frequency response make it ideal for vocals, as well as sounding great on a variety of other instruments.

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by SPIRIT
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SAMSON AUDIO

Samson's Servo 170 is specifically designed for use with nearfield monitors, and does an excellent and unobtrusive job, sticking as close as possible to the "wire with gain" ideal for an amplifier. It offers a power rating of 85 Watts per channel RMS, making it an ideal partner for most of today's nearfield studio monitors. The standard 2u design means it fits neatly into your rack system, independent left and right volume controls are given, and there are built in signal and clip indicators, together with protection circuitry to help prevent blowing your speakers.

At this price stocks won't last long - another Turnkey exclusive!

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CONTROL 5
STUDIO MONITORS

JBL

These classic monitors from JBL have been a standard in studios for several years and still stand up very well against more recent competition. The solid build quality you can expect from JBL comes as standard and the ported design gives fantastic bass response. Internal fuses help to prevent blown tweeters and a compatible Turkewound sub-woofer is also available for only £199.99. Exclusive to Turnkey.

~~RRP £439~~
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AT4033
LARGE DIAPHRAGM MIC

audio-technica

For years the Neumann U87 dominated the large diaphragm condenser mic market, but at a price. That was until the advent of the Audio Technica ATM4033. For about one third of the price, it offers superb sound quality - sparkling vocals and acoustic guitars, and all the kind of qualities you would expect from this kind of mic. Now Turnkey have secured a quantity at a new unbelievable price. If you're in the market for a serious microphone, you can't afford to pass this one by!

This price is available on current stocks only.

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NT1
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SHURE

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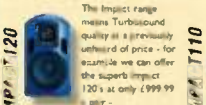
IMPACT SERIES

Turbosound



The Impact range means Turbosound quality at a previously unheard of price - for example we can offer the superb Impact 120's at only £199.99 a pair - *incredible value for money!*

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Soundcraft

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- Powerstation + 2 x [illegible] ... £1,549.99
- Powerstation + 2 x Electrovoice S300 ... £1,549.99
- Powerstation + 2 x JBL SR30 ... £1,549.99
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- Add 4 SM58s + stands, cables, stands and cables for £[illegible]

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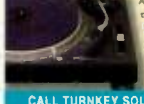
SL 1210 Mkii
TURNTABLE

Technics



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preview

Novation Supernova

Polyphonic Synthesizer Module

SIMON TRASK previews the Supernova, Novation's most ambitious synthesizer module to date.

From humble beginnings in the early '90s with the MM10 keyboard add-on for Yamaha's QY10 Walkstation sequencer, UK company Novation have steadily built a strong reputation for themselves as developers of affordable latter-day analogue monosynths, based on the success of the BassStation, one of the earliest recreations of TB303-style analogue bass synthesis. However, the company's latest synth module, the Supernova, is set to take them into an altogether more ambitious league, in which they will join the growing ranks of digital synths that model traditional waveform-based subtractive analogue synthesis in software.

NEW MODEL SYNTH

A 3U rackmount unit with the sort of controller-rich front panel we've come to expect from Novation, the Supernova is an all-digital instrument which uses a more developed version of Novation's proprietary Analogue Sound Modelling technology, as first employed on their 808/909-emulating drum module, the DrumStation. The Supernova is also Novation's first polysynth, coming in a choice of 16- and 32-voice models, with an optional 16-voice expansion board allowing the polyphony of the cheaper model to be upgraded.

For each voice of polyphony the Supernova has three fully independent oscillators (each with its own virtual sync oscillator), two ring modulators, and a noise generator. In this section the module also provides three special mod effects — Sync Skew, Formant Width, and Soften — for altering the oscillator timbres.

Oscillator outputs are routed through a mixer section into a multi-mode resonant filter section which offers a choice of low-pass, band-pass or high-pass filtering, with 12dB, 18dB and 24dB/octave roll-off options, plus an overdrive function. The filtered output is then passed through a familiar ADSR volume envelope and on to a multi-effects section which lets you use up to seven effects — distortion, reverb, chorus/flanger/phaser, delay, pan/tremolo, EQ and comb filter — in a variety of configurations. Two freely assignable ADSR envelopes and LFOs are also available as general-purpose modulators. The oscillator section has a 5x5 modulation matrix for each oscillator, while in the filter section you can independently modulate filter cutoff point and resonance amount from any of five mod sources — the two envelopes and two LFOs just mentioned, plus mod wheel. Effects, too, can be dynamically modulated.

The oscillator, filter and effects sections each have a button labelled 'Special', which is reserved for accessing further features to be added via operating system updates. Owners will be able to download these from Novation's web site and then upload them into the Supernova's flash ROM via MIDI from a sequencer or other MIDI utility.

Novation's new module also features a programmable arpeggiator, syncable to internal or MIDI clock, with not only standard up, down, up/down and random patterns, but also 128 preset and 64 programmable monophonic patterns and the same number of polyphonic patterns. LFO rates and delay effect rate can be synced to the arpeggiator.

Values for all the parameters mentioned above can be stored for each Program memory. The 32-voice Supernova has 1024 Programs, while the 16-voice model has 512, expandable to 1024 with the 16-voice expansion board fitted.

STAR PERFORMANCE

Novation's new module also has an 8-part multitimbral Performance mode (the 32-voice model has 512 Performance memories and the 16-voice model has 256, expandable to 512), and it's here that things start to get really interesting, creatively speaking. As you might expect, Performance mode lets you play up to eight Programs independently or in keyboard split/layer textures via MIDI. However, more unusually, you can also have up to eight arpeggios running at once, which turns the Supernova into an exciting compositional tool. And as if that wasn't enough, each of the eight Parts in Performance mode has the same effects-processing capability that's available to an individual Program in Program mode. That's right — you don't sacrifice anything in Performance mode (well, OK, you don't get eight times the polyphony). Eight audio outputs, in addition to the usual stereo pair, provide scope for separate routing of effected Parts to a mixer.

Arpeggio note data can be transmitted live via MIDI, as can all front-panel sound edits, so you can record live arpeggiator-based performances into an external sequencer. The pre-production model I spent a couple of hours with, in the company of Novation's Phill Macdonald, didn't allow arpeggiated parts to be dropped in and out live from the front-panel Part buttons — a feature I'm hoping will be added for the production version.

WATCH THIS SPACE...

My initial impressions of the Supernova are that it has a natural, realistic and satisfying analogue sound, enough programming functionality to provide a rewarding combination of sonic versatility and depth, and a user interface that will prove accessible enough to make programming an enjoyable experience. Also appealing are the module's rich multi-effects functionality and the live compositional possibilities of its multiple arpeggios. I can't wait for the full review... SOS

info

£ 16-voice model £1299; 32-voice model £1699; 16-voice expansion board (for 16-voice model) £449. Prices include VAT.
A Novation, Westacott Business Centre (a), Maidenhead Office Park, Westacott Way, Maidenhead, Berkshire SL6 3RT.
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WRH

Dynaudio BM15A

Powered Monitors

PAUL WHITE listens to Dynaudio's latest powered nearfield monitors and counts the days until he has to give them back.

I must confess that I've always liked Dynaudio monitors, so when the BM15As came along, I was more than keen to try them out. Technically, the active 2-way Dynaudio BM15As are nearfield monitors, but they're a little larger than most nearfields and are more likely to sell in quantity to project studio owners who want a compact and accurate full-range system.

CONSTRUCTION

The cabinets, which are supplied as a left/right mirror-image pair, measure 455 x 290 x 387mm, and appear to be fabricated from ready-laminated board that's notched and then folded to produce the cabinet top, bottom and sides with no visible breaks in the vinyl laminate. The MDF baffle has rounded edges and is fixed to the main body of the cabinet by 10 cap-head bolts. Each cabinet weighs around 19kg.

A 28mm Esotech soft-dome tweeter comes in at a crossover frequency of 1.7kHz and takes the response right up to 21kHz, while the 240mm bass/mid driver takes the low-end response right down to 40Hz (-3dB point). A fairly sharp 5th-order crossover slope is used to minimise the overlaps between the two drivers at the crossover point, and the tweeter dome is afforded some mechanical protection by means of a three-bar metal cage. This may be removed if required.

The bass/mid driver is typically Dynaudio: it utilises a synthetic cone suspended in a soft roll surround, with a large vented dust-cap covering the 100mm voice coil. The voice coil and magnet are the same as used on Dynaudio's 12-inch driver. Both drivers are recessed into the front baffle, as is the moulded plastic cabinet port. A green LED shows when the monitor is working normally and a red LED warns of clipping on the LF driver feed. Both drivers have their own discrete MOSFET amplifiers — 100 Watts for the tweeter and 200 Watts for the bass/mid unit. A slow-attack optical limiter is used to protect the tweeter against overload damage.

There are knobs on the back of the speakers to tweak the LF and HF levels, for optimising the monitors to their surroundings. These provide a more than adequate +/-3dB range, though it looks as though the previous user or reviewer of this particular pair had experimented with them set close to their extremes! There's also a -10/+4 sensitivity switch. All that remains is the power switch and the mains lead inlet, though I will just mention that although the amplifier heatsinks cover a large area of the cabinet back, they are fairly shallow and don't restrict your monitor positioning options.

> "The BM15As have to be amongst the nicest speakers I've used at any price."

LISTENING TEST

Ultimately what matters is what you actually get out of these black boxes, and on paper you can achieve a maximum of 120dB at a distance of 1 metre from a single unit. However, quantity says nothing about quality, which I'm pleased to confirm is well up to

pros & cons

DYNAUDIO BM15A £1939

pros

- Excellent overall sound quality with a wide frequency range and pinpoint imaging.
- Plenty of level for those who like to mix loud.

cons

- Um, I'm working on it...

summary

These are extremely nice powered monitors that provide full-range monitoring in a relatively compact format. The overall sound quality would be hard to beat at any price.

SOUND ON SOUND

what I've come to expect from Dynaudio. Unlike most so-called nearfield models, the BM15As have a smoothly extended bass response that reveals what is really going on in that elusive bottom octave, though if you need to go even lower the Dynaudio ABES (Active Bass Extension System) can be used with the BM15As to achieve a low-end response of 3dB down at 35Hz.

The stereo imaging on these speakers is amongst the best I have heard. Indeed, at one point I thought I'd identified a new percussion element in one of my test records, but it turned out to be my pet rat Dylan chewing an empty toilet-roll tube directly behind my chair! There's no weakness or discontinuity at the crossover point, and while the speakers have a very slightly forward characteristic, it doesn't get in the way of accurate monitoring and in some ways makes it easier to hear detail. Vocals remain smooth, even at fairly high listening levels, and the response to transient bass sounds is very tight and well controlled.

Importantly, the sound, and even the stereo imaging, remains sensibly consistent if you move off axis, and despite their open, detailed sound you can listen to the BM15As for long periods with no sense of fatigue. Of course, with a maximum SPL of around 120dB, there's more than enough level to make your head ring, but I prefer to monitor at sensible levels and consider the extra power as headroom! Absolutely everything in my test collection passed with flying colours, and even material that brings out the edginess in lesser monitors sounded smooth and pristine through the BM15As. Of course, if you do have a nasty mix playing, the BM15As will let you know in no uncertain terms, but that's what a good monitor is all about. What's important is that the speakers seem to have no vices of sufficient magnitude to mask the shortcomings in a recording.

SUMMARY

As you can tell, I like the BM15As very much indeed. As medium-sized monitors for the smaller studio after serious results, they are pretty close to perfect, and yet they're by no means the most expensive small powered monitors around. The frequency range is ideal for full-range monitoring in smaller studios with little or no special acoustic treatment, and the sense of detail and imaging is superb. Though they are possibly on the bright side of neutral, this is only by a tiny amount, and, as I said earlier, if this helps you pinpoint detail it's not such a bad thing. The BM15As have to be amongst the nicest speakers I've used at any price, and they make a very worthy addition to an already fine range of monitor loudspeakers. In fact I can't find anything not to like about them, which is going to make the pros and cons list tough to finish! SOS

info

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SPL Dual-channel

Valve Signal Processor

PAUL WHITE finds that though the new Charisma has only two channels instead of eight, it's lost none of its original charm.

SPL's original Charisma (reviewed in *SOS* November 1996) was an 8-channel device designed for use with 8-track recorders, and its aim was to add valve coloration and saturation effects in a very controllable way. Now the company has released a 2-channel version, so that people who don't need to process all their tracks at once can use the Charisma process on either individual mono tracks, a stereo subgroup, or a whole stereo mix.

The Charisma's two channels have identical sets of controls. Its internal circuitry features a pair of dual-triode ECC83 valves running at 230V (though the input and output circuitry is solid state and uses SSM 2141 and 2142 balancing drivers, which permit unbalanced use without level loss). Elaborate power-supply design is used to keep hum and noise from the valve stages to an absolute minimum, and a rear-panel ground-lift switch is fitted to isolate the circuit ground from the chassis ground. Both balanced jack and XLR inputs and outputs are fitted on the rear panel, and power comes in via the usual EC socket and lead.

WHAT DOES IT DO?

Developed by SPL's own designers, in conjunction with Manfred Reckmeyer, the creator of the original Charisma, this unit is designed to generate the beneficial side-effects associated with the best vintage valve equipment, notably that elusive quality of warmth and dynamic compression. The effect can sound like tape saturation (unsurprisingly, since the non-linearities of valves and analogue tape under high-level conditions are quite similar).

The valve's behaviour is governed by the Drive and Charisma controls: the Drive control adjusts the level of the signal fed into the valve stage by up to +24dB, and the Charisma control varies the valve's saturation characteristics. A Gain control adjusts the output level of the processed signal, and each channel has its own bypass button — a sort of Charisma bypass (I used to work with somebody fitting that description!). As Drive is increased, the valve starts to operate in its non-linear region, but because valves saturate softly, rather than clipping in the way that most transistor circuits do, the effect is to add subjectively musical harmonics, while at the same time restricting the dynamic range by compressing individual waveform peaks.

With most valve devices, drive level is the only factor the user can vary, but SPL have added the Charisma control so that you can alter the way the valve sounds when it saturates. Varying the Charisma setting changes the saturation effect from hard to soft, and from what I can tell this determines how quickly the valve becomes non-linear once a certain signal level has been reached. Though the effect is different to compression, there is an analogy to be drawn between the soft Charisma setting and soft-knee compression, where the effect increases progressively with level. The Hard setting, on the other hand, features a rapid transition from clean to coloured when the signal exceeds a specific level. The manual describes the Soft side of the control as providing warm, smooth sounds, while the Hard side creates punchy, crisp sounds.

> "SPL have added the Charisma control so that you can alter the way the valve sounds when it saturates."

The 2-channel Charisma has no on-board metering but does feature two LEDs designated Max and Process. The Process LED lights when the signal level is high enough to cause the tubes to start behaving in a non-linear fashion, and the Max LED warns that any further level will cause clipping. However, the manual wisely points out that the Process LED can only be a guide, because some signals, such as drums, can stand very heavy processing before much change is evident, whereas some types of musical signal can sound over-processed at such low levels that the Process LED may not even have come on.

IN USE

When I first switched on the Charisma, only one channel was working, so I removed the cover and found that one of the ECC83s had worked loose in its socket. I guess the unit must have received quite a jolt in transit, as the

pros & cons

SPL 2-CHANNEL CHARISMA £469

pros

- Very easy to set up.
- Very controllable.
- Authentic valve saturation sound.
- High standard of mechanical design and construction.

cons

- The Process LED gives only an approximate indication of how the unit will sound, so you really have to count on your ears when making adjustments.

summary

A very controllable way to add either subtle valve coloration or more obvious valve distortion to any audio signal.

SOUND ON SOUND

Charisma

valves are securely seated in good quality sockets, but this did make me think that perhaps sockets fitted with spring retaining clips might be a good idea. Once the valve was pushed back home, the unit worked perfectly.

I tried the Charisma with single voices, solo instruments and full mixes, and found that it delivered those characteristics normally associated with 'the valve sound' very authentically and controllably. It also confirmed what the manual warns of: namely, valve distortion doesn't suit every sound source. Some musical sounds suffer from rather unpleasant intermodulation distortion when valves are deliberately pushed into saturation, and in such cases you might find that running the valves below the level at which the process LED comes on gives a subtle but tangible effect that does remain musical. The Charisma's effect on vocals also tends to vary from singer to singer, but I prefer to err on the side of minimum saturation to keep the sound natural and clear. A soft setting of the Charisma control, with the Process LED coming on only occasionally, seems a good bet. Heavier processing can be used to beef up synth or percussive sounds, especially those with spiky waveforms, and because of the way in which tubes saturate you can gain a significant increase in perceived level without increasing the actual peak level at all. This can be useful when recording to a digital medium, as it helps protect against peaks.

The more assertive Hard setting of the Charisma control seems best suited to percussive sounds, where a little crunch is perceived as better attack and more power rather than as obvious distortion, though it's also possible to use this setting as a type of limiter, just to catch peaks. There's also enough Drive available to move out of coloration and into obvious distortion, and this setting may be useful to treat sampled organ patches or to further process electric guitar tracks. The real trick is to listen, and not be tempted to overdo the processing — quite often, if you can hear a definite effect you've gone too far. Original valve mics were designed to be as clean as possible, not to deliberately distort the sound, so with most vintage gear you don't get significant amounts of distortion until signal levels are very high.

SUMMARY

There are numerous boxes on the market that claim to let you add the valve sound to your music as if it were some kind of sonic stock cube that you could sprinkle on, and some do the job more successfully than others. As usual, SPL have taken a somewhat different approach to their competitors, by making the valve overdrive characteristics user adjustable, so that it's possible to get any amount of coloration at any signal level, and to choose between a soft, progressive coloration and fairly tough saturation. If you're into the sound of valves working hard, this is certainly the most controllable and flexible box I've yet tried for achieving that sound. SOS

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Fostex DP8

Digital Switcher

PAUL WHITE tries a simple but useful digital switching system that can be used with S/PDIF or ADAT-format signals.

pros & cons

FOSTEX DP8 £199

pros
- Inexpensive.
- Very simple to use.

cons
- Insufficient co-axial channels for studio applications where the requirement is mainly to switch S/PDIF phono connections.
- No 'off' position on the switches.

summary
The DP8 is a simple and affordable solution to a number of digital patching problems.

SOUND ON SOUND

As more items of studio equipment become digital, the problem of patching them together grows increasingly complicated, because, as with analogue gear, you occasionally need to change your setup to perform specific tasks. In the analogue domain the job is generally done with mechanical patchbays, but there's no direct digital equivalent. There are some programmable digital patchbays around, but these can be expensive and difficult to operate, especially when you only want to make a simple patching change. Life is also complicated further by the fact that there are several types of digital connection format, predominantly ADAT optical, AES/EBU XLR and S/PDIF on both phono and optical ports.

Fostex have come up with one solution to the problem, in the shape of the DP8, a non-programmable 8-in, 8-out digital routing box where the routing is controlled entirely by rotary switches. Both phono and optical inputs and outputs are provided, but there's no XLR option.

The secret of the DP8 is simplicity — there's no data conversion or other clever processing inside. The most complicated thing that happens is that phono ins are converted to optical, and vice versa. If you feed in an ADAT signal, you'll get an ADAT signal out, and if you feed in S/PDIF from a DAT machine or similar source, then S/PDIF is what you'll get out. You can't merge data streams (that would require a digital mixer), though it is quite possible to split one input to feed several destinations.

THE HARDWARE

The DP8 is presented as a shallow 1U rackmount device (wall-wart powered, of course), with two phono ins and outs (channels 1 and 2) and six optical ins and outs (channels 3 to 8). Inputs 7 and 8 are located on the front panel for convenient access when patching in visiting gear, whereas all the others are on the back panel for permanent connection. The brief manual states that dust caps are fitted to all optical ins and outs, and that these should be replaced when the optical ports are not in use, but the review sample came without dust caps.

The only user controls are eight rotary switches, each of which relates to one of the eight outputs. Turning a switch selects which of the eight inputs is routed to that output; there's no 'off' position, so one of the eight inputs is always selected. There are no restrictions on which signals are routed to which outputs, but clearly there's no sense in routing an ADAT optical input to a phono output, as the data stream will still be in ADAT format and thus will be unreadable by an S/PDIF phono input. However, optical S/PDIF can be sent to a co-axial phono S/PDIF output with no problem.

The simplest way to connect equipment to the DP8 is probably to use I/O 1 for one machine, I/O 2 for another machine and so on, though you don't have to work in this way if you don't want to. There's room above the selector knobs to fix a strip of tape carrying the names of the connected devices, but there's no official scribble strip. Furthermore, because the DP8 doesn't have a programming system it might be useful to write down the knob settings for your most common patches, so that you don't have to figure out everything from first principles every time.

IS IT USEFUL?

The DP8 is such a simple device that I hardly need to talk about how it performs in use (suffice it to say that signals go where they're supposed to go), but I think a few suggestions on where it might come in handy are in order. In a studio where there are, for example, two DAT machines and a computer with a digital interface, the DP8 could swap between a configuration where one DAT machine is connected ready for cloning tapes onto the other machine, and a completely different setup where one DAT machine might be used

as the A-D converter feeding the digital card and the other monitoring the card's output. Similar situations could occur with ADATs, digital mixers and ADAT-compatible soundcards, where sometimes your ADATs will need to be connected to each other for track copying and cloning, while at other times you'll want to connect your ADATs to your soundcard or mixer. I know, in my own digital editing setup, that there are times when I'd like to be able to change my digital connections more easily, and with a device such as the DP8 I could feed the output from my editing system into both DAT machines at the same time, to simplify patching when making two simultaneous DAT copies from disk.

To me, the greatest limitation of this device is the fact that the I/O ports are mainly optical, while most studio DAT machines have co-axial phono S/PDIF connectors. Of course, if you're using mainly ADATs this is an advantage. If all the outputs had been available on both optical and phono simultaneously (as was the case for the programmable Midiman Digipatch unit we looked at in the December 1997 issue of *SOS*), the connectivity options would have been rather more

"The secret of the DP8 is simplicity — there's no data conversion or other clever processing inside."

flexible. Incidentally, the manual warns against using two or more DP8s in cascade, because of the risk of introducing clock jitter. Other than that, the unit is simple in concept and does just what it says on the tin!

SUMMARY

This box is ideal for anyone who has a fairly simple digital setup and who needs to switch between relatively few configurations. The ratio of optical to co-axial connectors makes the DP8 most useful for those who have equipment with mainly optical interfaces, and because the optical connectors can also handle ADAT information, there are numerous applications in ADAT-based studios (or systems using the ADAT protocol).

This isn't a unit that needs the hard sell — you either have an application for it or you don't, and if you do you'll be choosing between the DP8 and something programmable and more flexible, that's probably a lot more expensive.

SOS

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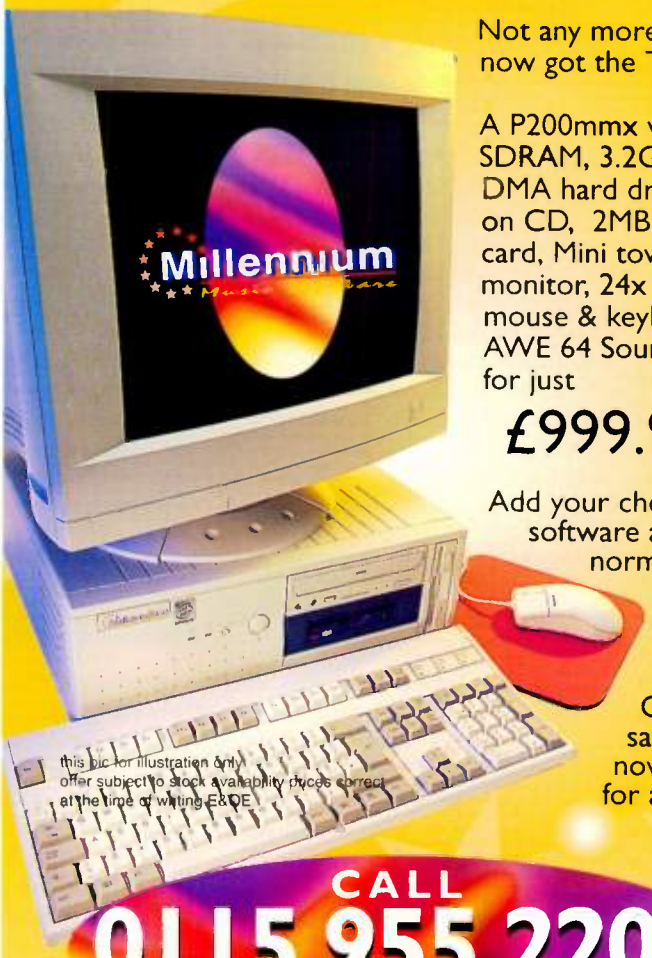

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JoeMeek VC5 Meequaliser

3-band EQ

While this outboard EQ provides little more than a decent desk EQ in the way of facilities, it does have that distinctive vintage Joemeek sound at a price that won't break the bank. PAUL WHITE meeks out.

The Joemeek Meequaliser appears to offer no more than you'd be likely to find on the EQ section of a typical budget desk — high and low shelving controls, plus a single sweep mid. However, no matter how similar the control layout, or even the paper specifications, equalisers by different designers always sound different. This particular 2-channel design is based very closely on a circuit originally used by Joe Meek in his own studio, and is said to comprise simple bass and treble shelving

controls with a mid circuit based around an inductive filter — one that uses a wound-coil inductor rather than a capacitor in a gyrator feedback circuit. Indeed, Ted Fletcher (the man who refined Joe Meek's original designs), has few kind words to say in favour of typical desk equalisers based on gyrator circuitry.

Built into the familiar Joemeek green 1U case, the Meequaliser has TRS jack ins and outs that can be used balanced or unbalanced. In fact there are two identical outputs per channel, just in case you need to split the signal. Additionally, each channel has a direct insert TRS jack socket that can be connected to a console's insert point with a regular stereo jack cable (though there are still one or two mixers that wire their inserts the opposite way to everybody else, so this may not work in all cases). This connection is, of course, unbalanced. Power comes from an internal supply connected via an IEC lead.

The front-panel controls are both simple and familiar, though they have no centre detents. Treble comes first, providing up to 18dB of cut or boost at a fixed frequency of 8kHz. The Bass control offers the same range, but at 100Hz. Around 16dB of cut and boost is available from the mid-range controls, with a second pot sweeping the frequency between 600Hz and 3.5kHz. The mid-range Q varies with frequency, from around 1.2 at 600Hz to a tighter 2.5 at 3.5kHz. This has less range than I usually like from mid controls, as I find it valuable to be able to get into the 150-200Hz band to modify errant bass sounds, but I'll reserve judgement until after the listening test. The final control, accompanied by a dual green/red LED level indicator, provides up to 12dB of overall gain or attenuation. A separate bypass switch, with status LED, is fitted for each of the two channels.

ALL SYSTEMS GREEN

I tested the VC5 Meequaliser alongside the 3-band EQ section of one of my own small consoles (one that I regard as being reasonably good), and in all respects the VC5 produced nicer sounding results. With drums, for example, the bass control on the VC5 adds weight but doesn't mess up the mid-range or create an unnatural sound — it simply acts like a volume control on the bass elements of the sound, which is how I feel it should be. The treble control emphasises cymbals and transient hits, but you have to add quite a lot before the sound gets aggressive or spitty, whereas I only had to add a little of my desk EQ before the top end took on a rattly quality.

The mid-range control works very sweetly, and you can pile on a lot of boost without feeling you're overdoing it. Again, trying similar settings with my desk EQ resulted in a rather more nasal sound.

Re-testing with vocals showed the bass control on the VC5 to be particularly good at bringing out the chest resonance of the voice in a very natural and controlled way, while my desk EQ (fixed at 80Hz rather than 100Hz), seemed almost to miss it entirely. I put this down to the gentle slopes of the VC5, which must bring the bass EQ right up into the mid-range, though no curves are provided to corroborate this impression. Similarly, with mixed material, modest amounts of EQ are effective in sweetening the overall sound without giving it that phasey, disembodied quality that desk EQs often seem to impart.

FIRST AMONG MEEQUALS?

This isn't an EQ for making radical changes to a sound, but more a sweetening EQ for use in situations where you need to make tonal changes without sacrificing the natural character of the original sound. It's probably fair to say that it's most useful on mixes and vocal tracks, where it works exceptionally well, but it's also flexible enough to work with guitar and bass, providing the type of change you're after isn't too radical. Obviously there are better equalisers around if you're prepared to spend the money, and there are equalisers with rather more flexibility, but as with the existing Joemeek products, the VC5 has a smooth, friendly character that should win it a lot of friends. If you're disillusioned with your desk EQ, but can't afford one of the big-name esoteric outboard equalisers, the Meequaliser could be exactly what you need. SOS

pros & cons

JOEMEEK MEEQUALISER £349

pros
- Warm, musical sound.
- Not excessively expensive.
- Simple to operate.

cons
- 3-band, fixed-Q format makes it less flexible than some other models.
- Limited mid-sweep range.
- Only one mid band.

summary
The VC5 Meequaliser is a simple, straightforward 3-band equaliser with a warm, natural sound. What it lacks in flexibility it makes up for in sonic charm.

SOUND ON SOUND

info

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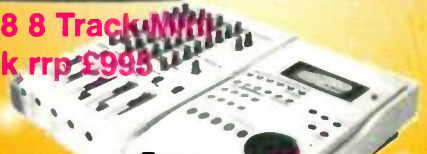

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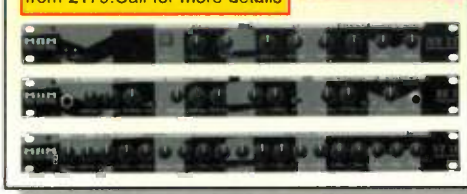

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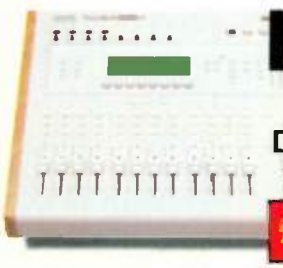

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BOB MOOG

PAUL WHITE talks to one of the seminal figures of the electronic music era, pioneering synthesizer designer Bob Moog.

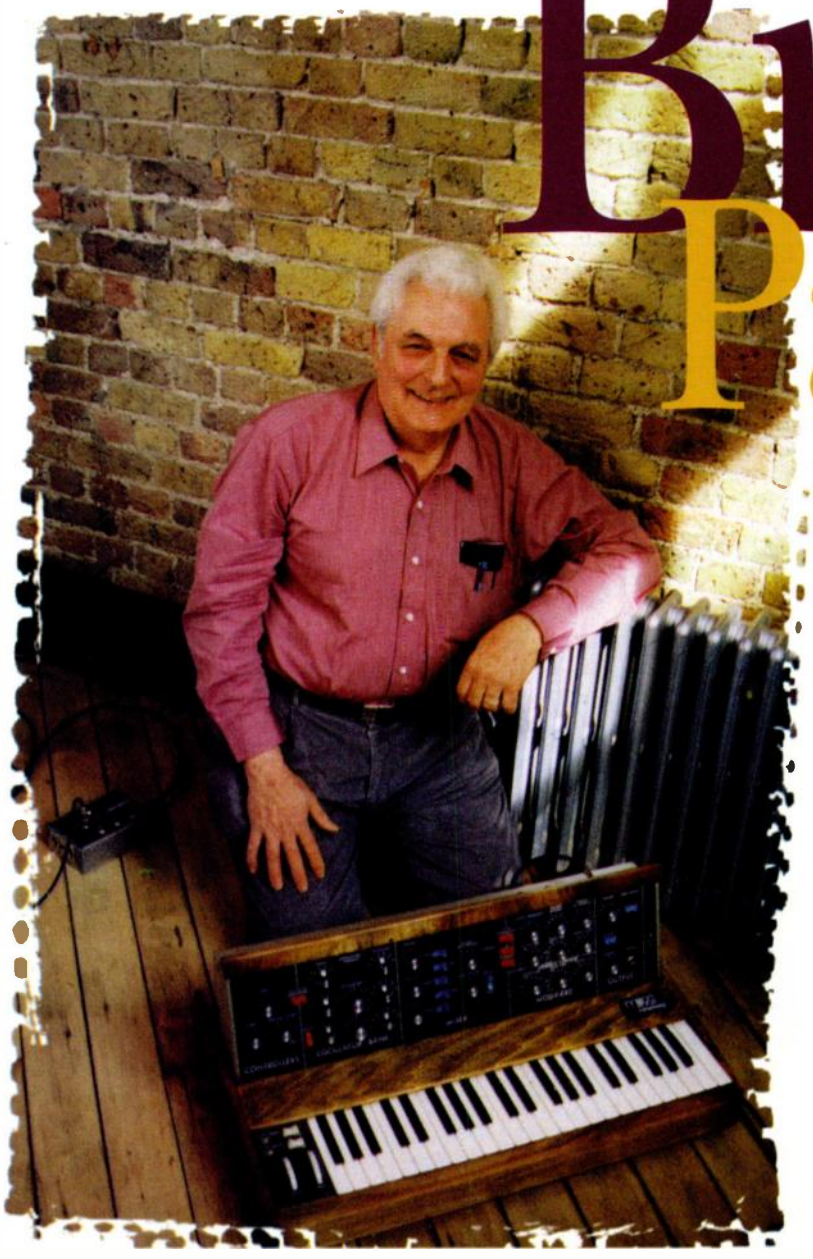
Bob Moog's name is synonymous with analogue synthesizers, but these days you're more likely to find him experimenting with MIDI theremins and alternative MIDI control systems. His company, Big Briar, manufactures both inexpensive traditional theremins and a far more sophisticated MIDI version housed in a splendid mahogany cabinet. On Bob's business card, his position with Big Briar is described as 'Grand Poobah', which makes a refreshing change from all that President and Chairman stuff! I caught up with Bob Moog at the opening of Turnkey's new in-house synthesizer museum and 'Loopstation' showroom and asked him about the past, present and future of electronic music.

When you set about designing the Minimoog to be both affordable and portable, did you agonise over which modular features you could include and which you'd have to leave off?

"The first trial feasibility prototype consisted of modules — I think there were two oscillators, a filter, a VCA and one or two envelope generators. It also had a very small keyboard, which was maybe just a couple of octaves. Of course, that wasn't enough, so we began adding things back in, and by then we knew what people liked most — what they had to have for a basic voice."

Is there anything from the modular system that you really feel it would have been nice to include if you could have at the time?

"It would have been nice to have had patching, of course, linear frequency modulation would have been interesting, perhaps synchronisation of oscillators and a fixed filter bank. When it comes to modular synthesis, there was no idea of how much was enough. The simplest modular systems were just one cabinet systems and were probably about as powerful as a Minimoog, but we always understood that we could add any number of extra modules. The flexibility was just down to how many modules you had."



Bob Moog's new company is working on a new version of the Minimoog, scheduled to be ready around the end of this year: "The specification I've set myself is that it should sound like the original Minimoog, but it should also be stable and reliable."

Do you think synthesis lost anything when it went polyphonic? The controllers that you built into those early machines seemed applicable more to single note lines than they were to chordal work.

"Oh yes, of course. A polyphonic instrument with a keyboard, from the point of view of the player, is more like an organ. A synthesizer to my mind is more of a lead instrument or monophonic instrument where you put all your attention into getting a sound that changes in interesting ways. With a polyphonic instrument, what you need is a sound that changes in simple ways. Nevertheless, a lot of instrumentalists were very happy to have polyphonic synths, such as the Prophet Five, the Memorymoog or the Oberheim stuff, because even though you played it like an organ it sounded pretty good."

DIGITAL SYNTHESIS

We now have digital synthesizers claiming to replicate the sound of the original analogue

synths with absolute tuning accuracy and stability, but do you think that the sound has lost something?

"I think the absolute accuracy and regularity of digital systems detracts from an aspect of the sound that is pleasing and comfortable to our ears. I like analogue sound better, but I'm sure that as time goes on and digital systems get better, you'll be able to simulate those pleasing imperfections and uncertainties. Right now I don't think that anyone really knows sufficient to make an accurate enough model so that an informed listener could not tell the difference. I don't think there's a digital system in existence that would fool anybody in a side by side comparison."

Which imperfections of analogue do you think are the most important in creating that pleasing sound?

"The things that really distinguish analogue instruments from digital instruments are right at the edge of perception — we have trouble pinning them down and describing them accurately. A lot of it comes down to the fact that analogue instruments are not exactly accurate in the way that digital instruments are. Acoustic instruments are not exactly accurate either, and with an analogue synth, when there are two oscillators slightly apart, the rolling beating that you hear is not perfectly regular — it has a random or drifting component to it that keeps our ears from getting fatigued."

Does physical modelling interest you as an area worth pursuing, or do you feel it might be a dead end?

"Oh no, I think it's probably the most fruitful digital synthesis area to explore right now. You can go every way from modelling a real physical system like a violin, all the way to modelling something fictitious that's never been heard before. If I were to work with a digital system for my own edification and enjoyment, it would be physical modelling."

Synthesis methods, such as physical modelling, give us more parameters we can control in real time, so what improvements do you think are possible in that area given that a typical keyboard player has got a couple of free feet, maybe the left hand, and perhaps the opportunity to use a breath controller?

"Ah, the optimum control system! I don't think there's such a thing as the optimum control system, but there are a lot of good ones and more will come. That, I think, is the big area for the near future. I believe it is a mistake to think in terms of one parameter for one finger, another parameter for another finger, but somehow you should be able to control many high level parameters that have to do with things that we hear. For example, if we had a sound with 40 overtones, I don't think anybody would want to be able to control the overtones individually, but we may want to be able to control a whole band of overtones at once. With MIDI now, you can build a controller and then use the output of that controller to vary any parameter you want, and I think that type of experimentation could shed some light on what aspects of sound musicians like to control."

As a guitar player, I've experimented with MIDI guitars, which are pretty imperfect things, but the one thing I do like is being able to apply different degrees of vibrato at different speeds to different notes. Is that something that could be translated into keyboard terms, for example by using a key with a position-sensitive surface?

"I've built a few keyboards like that and they were described in the *Computer Music Journal* maybe six or seven years ago. I began with a regular wooden keyboard and then put a touch sensitive coating on top of each key so that the key was position-sensitive to where you placed your finger in two dimensions. That's very interesting, but it's also expensive to do. There are various ways of approaching that problem in engineering terms, but the real difficulty is getting musicians to study it — to put behind them the techniques they've learned and to try something new."

Surely this will always be a problem as long as the keyboard is the main player interface for electronic music?

"That's right, and that's why I'm more interested these days in alternative controllers. The multiple touch-sensitive keyboard that I developed was built around a conventional keyboard because that was something that was available, not necessarily because the keyboard is the best means of control."

Aside from theremins, what other forms of non-keyboard controller have you explored?

"One that everybody talks about is what you see in the Beach Boys *Good Vibrations* video, a ribbon controller that we made back in the mid '60s. I think that sort of thing would be interesting to explore further. Another approach I find interesting is something built by Wendy Carlos, which she calls a Circon. It's really a big pointer that rotates through 180 degrees, and you hold the end of the pointer in front of a scale that shows the notes being played. This gives you some kind of visual feedback, and though it controls pitch in the same way as a ribbon controller, it feels different. Wendy has tried the theremin and the ribbon controller, but she likes the Circon because of its feel, and that's very important."

Essentially though, it's basically a frequency pot with a pointer attached to it.

"Yes, but the size and the shape of the part you put your hand on, exactly how smooth it is, how fast the frequency changes when you move it — all those things affect how it feels, and that's part of my craft, getting those things as close to right as we can."

THEREMINS

Moving onto theremins, they used to be notoriously unstable — one of the oscillators has to be free to drift so that you can use hand capacitance to change its frequency. How have you improved the stability — the only way I can think of to make a MIDI theremin would be to do a quick autotune routine every time a MIDI Note Off occurred?

"Well, we could do something like that, but in fact we don't, though it would be useful for applications such as having a theremin set up in a museum where you can't have somebody tuning it up all day. Our instruments are fairly stable, but they're not 100% stable, they couldn't be, because the temperature and the moisture content of the air affect the tuning. In practice it doesn't matter too much because you quickly feel where the notes are and compensate for any changes in tuning — you

WHAT'S IN A NAME?

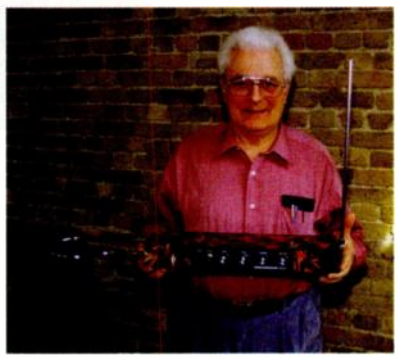
"I sold my interest in Moog Music in 1978 and after that, the company continued for a few more years, then ran down. A few years ago, there was no business activity whatsoever coming out of the old Moog Music and the company was getting rid of all the old service inventory, showing signs that they were about to abandon the use of that trademark. Now, under US trademark law, if you stop using a trademark, it lapses and is considered to be abandoned. That's what Moog Music did.

"A man called Don Martin applied to register the Moog trademark, which ordinarily, he would be entitled to do, but there's another aspect to US trademark law in cases where the trademark is the name of a well known person and where use of that trademark might confuse the public as to whether or not that person was involved. That's where we are now — Don Martin applied for use of the trademark first, and I've subsequently applied for use of the trademark, so we have to wait for a legal resolution.

"I've registered the Moog trademark in France and Germany and applied for it in a number of other European countries, but the situation is rather different in the UK where another party has claimed the right to my name. That's a problem for us right now, and again we will have to wait for a legal resolution."

"I don't think there's such a thing as the optimum control system...that, I think, is the big area for the near future."

"A synthesizer to my mind is more of a lead instrument... where you put all your attention into getting a sound that changes in interesting ways."



Bob Moog's 'deluxe', mahogany cabinet MIDI theremin. Like the standard model (inset) it has two antennas, one for pitch and the other to generate a control signal, usually for amplitude.

▶ basically play the instrument by ear. You don't think in terms of putting your hand in exactly the same place to get a given note."

I guess that if you feed the output of a MIDI theremin into a sequencer, you're going to see oceans of pitch bend data and not much in the way of note information.

"That's right, there's almost no note information, though there are a couple of different MIDI modes you can choose to use. In one there is a Note On message when you begin a sound, then when you go back to silence, there's a Note Off. Everything in between is pitch bend, and that has a range of plus or minus four octaves."

So editing a performance could be tricky!

"Yes, and we're interested in working with sequencer manufacturers to get some good graphic editors, because there are some very interesting things you can do with graphic editing if you display the pitch bend contour as a function of time, and just move it around a bit. You can, in principle, correct notes, change the amount and speed of vibrato and things like that."

The theremin is an intriguing instrument, but is the old capacitance-controlled oscillator technology the best way to do it? For example, wouldn't it be more stable if you wore a small transponder on your finger, then used a radio system to continuously calculate the distance of the transponder from the sensor? Couldn't you use one of the passive transponders that are used in anti-shoplifting tags?

"The advantage of analogue theremin technology is that it is absolutely continuous, whereas having something like a supersonic transducer would provide the data in steps, which would take time to compute."

Unless you checked it at a high enough rate that it was effectively continuous. After all, what comes out over MIDI is essentially a series of steps.

"Yeah, we update the pitch information 200 times a second, though you can select a lower update rate if you want to. It turns out not to be a problem that this is an analogue device, and as an engineer, I'm not sure that any other transducer type that I know of would have all the musical advantages of the traditional theremin."

ALTERNATIVE CONTROLLERS

What do you think about some of the optical MIDI control systems that have been developed?

"I think they hold promise as controllers, but they're different from the theremin. With the theremin, you can get up to a distance of less than a centimetre and still be playing. This is ideal for the playing range of the arm, around 60 cm, whereas optical controllers work over a different range. Buchla's Lightning [infra-red light-based alternative MIDI controller] is interesting in that it is two-dimensional, so you can move your hand from side to side and control another parameter. They're two different types of controllers that are appropriate for two different types of gestures."

As Bob had brought a theremin with him, I had to give it a try! Because there's no physical feedback other than what you hear, it takes some getting used to, but even so, I could appreciate the appeal of the instrument. I asked Bob if he had considered extending the control capabilities into three dimensions.

I guess that if you were to develop an effective three-dimensional scanning system covering the space around the antennas, then you could have control over pitch and two other parameters from one movement.

"Yes that's right, whereas the theremin has two antennas, one for pitch and the other to generate a control signal, usually for amplitude. There is another MIDI mode where we can assign the antenna outputs to any MIDI controllers at all — pitch bend, filter, modulation or even for turning lights on and off. There are all sorts of theatrical applications. There's also a footswitch and pedal input for further control."

Obviously you're always thinking of new ways to provide more performance control. Is there anything you can talk about without giving away too many secrets?

"Well, I can tell you what we've done so far, but there are also things I don't want to talk about, not because they're secret, but because they're less than ▶

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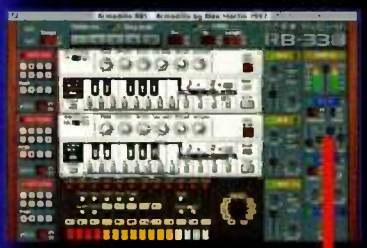

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vapourware and may not turn out to be good ideas. However, there are four MIDI modes on this instrument, one of which is a conventional theremin where the right hand antenna sends out pitch bend and the left hand antenna sends out one of a small selection of control change messages. The second is a more general continuous controller, where either antenna can be assigned to any MIDI controller. Third is a chromatic mode, where we use Note On messages to quantise the space around the antennas. There's a selection of 16 different scales you can play like air harp or air guitar. That's very different from playing with continuous pitch change. The fourth mode is called Smart Theremin mode, where we use a combination of Note On and Pitch Bend to add pitch bend to whatever MIDI note you happen to be playing. In normal theremin mode, the note is always middle C plus pitch bend. This last mode is appropriate for playing things like sample playback, because samples don't usually work well when they're being bent over four octaves, they're best used over a relatively narrow range."

Some of Bob's early Moog modules.

"I think the absolute accuracy and regularity of digital systems detracts from an aspect of the sound that is pleasing and comfortable to our ears."

RESURRECTION OF A CLASSIC

Does your vision extend much beyond theremins at the moment — is there something else you'd particularly like to explore?

"Well, I love thinking of new things, but I'm running a small business now, so we need to think of having new products that people will buy. We've been very gratified at the acceptance of our theremins, but that market is very small, so now we're looking at introducing some new products going back to analogue synthesizer-like things. There's a high awareness of the musical value of analogue instruments amongst musicians these days, so I expect that in around six months time we'll be introducing a set of effects that are organised more like analogue synth modules than the usual pedals. There'll be things like filters, ring modulators and so on. We're also working on a new version of the Minimoog which should be ready by the end of this year."

Will that be a replica of the original design or will it be enhanced in some way?

"It'll have all the basic sound quality and function of the original model, but with a few additional things like synchronisation and different ways of controlling the filter. We'll use 1990s components instead of 1960s components — you can't get 1960s components any more, and even if you could, I'm not sure we'd want to use them! I'm an engineer, and an engineer will build a design to meet a specification. The specification I've set myself is that it should sound like the original Minimoog, but it should also be stable and reliable."

Is that going to be a difficult task when, as you said earlier, some of the things that make the original sound distinctive are actually quite subtle? Is there a danger that you might 'throw the baby out with the bath water'?

"Between my associates and myself, we're pretty confident that if we design something that doesn't sound like a Minimoog, we'll know it. We won't sell anything that doesn't sound like a Minimoog. As an engineer I'm confident that if we spot something that isn't right with the design, I'll know how to fix it. At worst, we could go back to doing things as they were in the old instrument, but I don't think it will come to that. We'll be keeping the original ladder filter circuit, but using modern transistors that should be quieter and more reliable."

INTO THE FUTURE

"Beyond that, I'm interested in all types of alternate controllers. Wendy [Carlos] and I have talked about us manufacturing a Circon-like device, and we certainly know how to build ribbon controllers. I can foresee a ribbon controller with MIDI output."

Would this be a new kind of instrument, like a device with ribbons replacing strings?

"I was once asked what I thought the future held in store for electronic music, and I predicted that musicians who played electronic instruments would own their own finely crafted controllers which would be very sophisticated and quite expensive, and for a performance, they'd plug this into a generic sound generator, the same way musicians today plug into a generic PA system. And I'm amazed today at how fast we're approaching that. I also predicted the advent of MIDI, and I missed it by only one year. This was back in 1976. Now you can plug a sound card into your computer and emulate fairly closely, not exactly, but fairly closely, just about anything. You get all that stuff on a card now, so if you look 10 or 20 years ahead, I think it's safe to say that sound production is going to be generic. With just a little bit of money, you'll be able to make any sound you want, and the real expense will be in the device that you use to play and control those sounds."

Presumably, different players will demand different things from their controllers, so does that mean the controllers themselves will end up being modular?

"You can already customise guitars or have a custom guitar made, so why not MIDI controllers? You're still a human being, you're still using your hands, and the same sort of things are going to continue to make you feel good."

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The Rhythm method

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Even a killer rhythm pattern won't make the grade if it's played with lacklustre sounds. In the concluding part of this series, NICHOLAS ROWLAND puts on his sound designer's head and explains how you can re-tread your tired timbres...

In the first instalment of this series, I made the point that one of the main attractions of sampled rhythm loops is often not the intricacies of the rhythm pattern itself, but the sonic character of the loop. This character might come from the particular ambience of the recording or the accidental presence of other instruments which add an unexpected twist to the drum rhythm. Or it might be there because someone has employed a whole bank of effects to flog the sounds to within an inch of their lives.

We've already looked at more extreme approaches to rhythm programming, in last month's issue. But in this final session of tub-thumping I'd like to talk about a number of techniques for manipulating drum and percussion sounds — techniques which can be used to make even the most boggish of bog-standard drum machine rhythms sound that bit more interesting.

But first a disclaimer. What I'm outlining here is my personal armoury of techniques: I'm not claiming to cover the whole spectrum of possibilities. And remember — parameter values can go down as well as up.

TAKE IT TO THE LIMIT

The first place to look for inspiration is in the manual. In other words, it's always good to know what your equipment is actually capable of (missus). Many drum machines and sound modules have various on-board facilities for customising sounds, such as programmable pitch, decay, and timbre. Some also give you control over such parameters as sample start point, velocity-controlled pitch-bend and velocity-sensitive crossfades between samples.

These parameters can be used in both subtle and not-so-subtle ways. As a simple example, you can add interest to a straightforward rock-style rhythm pattern by using different pitches of the same snare drum on different beats. Or try shortening the decay values on each successive beat of a snare fill, so that the sound tightens up as it reaches the climax of the roll.

Some drum machines allow you to spread a percussion sound across the drum pads so you can easily play it at different pitches. Rather than just tapping in a straight 8th- or 16th-note hi-hat pattern, with the voice at the same pitch, try programming in your hi-hat or other top-line percussion instruments (such as shaker, tambourine and so on) more as melodic riffs. (As an aside on tuning voices like conga and bongos, don't try and tune them to some precise melodic pitch — somehow this has the effect of making them disappear from the mix.)

I mentioned last month that extreme tunings of sounds can yield some unexpected results. Yamaha's RX5 drum machine, for example — a veritable giant of its time — allowed transposition of samples over a staggering eight or nine octaves. You quickly discovered that at very low pitches electro-toms sounded like small explosions, while splash cymbals turned into J Arthur Rank-style gongs. Sadly, the designers of many other drum machines which offer tunable drum sounds see fit to restrict the pitch ranges to 'realistic' values — a pity, really, as I don't feel you really get to know the true gut-wrenching potential of a vibraslap until you've heard it at subsonic levels.

PAN HANDLING

Conventional wisdom dictates that when you place a drum sound in the stereo spectrum you should take your lead from how it would sound if you were standing in front of a drum kit. In other words, bass and snare dead central, hi-hat panned slightly to the right, ride cymbal slightly to the left, and the toms spreading from half-right to half-left in descending order of pitch. (Unless, of course, your drummer happens to be left-handed, in which case the kit placement would be reversed.)

These rules are all there to be broken, of course, though I would stress that panning effects are best applied only to sounds in the mid- to high-frequency range. As you probably know, it's much harder for the human ear to accurately pinpoint the directional presence of low-frequency sounds such as bass drums. Generally, then, gratuitous panning of bass sounds is a waste of time.

Where a rhythm has fairly busy high-frequency percussion elements (that is, hi-hats, ride cymbals, ▶

BREAKING THE STEREO BARRIER

Many drum machines and sound modules are equipped only with a pair of stereo outs. Yet conventional rhythm track recording wisdom dictates that bass drums are recorded dry and snares have gated reverb applied, while hi-hats and other top-line percussion benefits from a touch of ambient reverb.

If you can't multitrack the various elements of the rhythm separately to tape, sample the hi-hat parts with the necessary EQ and effects and run this loop alongside the bass and snare part, as supplied by the drum machine. Panning the snare and bass to opposite sides of the stereo spectrum allows you to then treat them with separate effects and EQ. Of course, when doing this you might want to consider applying the techniques mentioned elsewhere to the sampled part of the rhythm — for example, recording at a low resolution or trying out the 'octave-apart' trick.

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shakers and the like) try panning these elements hard left and right. This immediately opens up the soundstage and helps it to feel less cluttered. Extreme pannings of tom sounds can also work quite well in what, for want of a better phrase, we'll call 'jungle rhythms' (or, if you want the Politically Correct term, try 'tom-intensive ethnically orientated beats').

If you want to add a new twist to the machine-gun snare-drum rolls which usually come as standard issue with dance tracks, first program two rolls using separate snare sounds. Then either cross-pan them during the roll; start them at opposite ends of the stereo spectrum, then bring them together; or start them together and widen them out. Couple this with volume fades or changes in pitch to add extra "gosh" factor.

MIDI METHODS

The above ideas are easy to apply if you're using a MIDI sequencer to control drum sounds from an external unit. With a fistful of MIDI Controller commands you can simulate ping-pong echoes, tempo delays and dub-style delay effects. (In fact, sequencers such as *Cubase* offer a MIDI delay program as part of the furniture.) Regard these features as your friends.

You can also create simple echo effects by copying a drum pattern to another sequencer track, then moving it forward by, say, a 16th note. You could then try assigning a different style of drum kit to this second rhythm pattern. If you were using a big-sounding rock kit for the main rhythm, you could try a softer jazz kit played at lower volume for the 'echo'. Obviously, you can take this technique a few steps further. For example, you could have a series of echo tracks built around just one element of the rhythm, with each 'repeat pattern' assigned to a different set of drum sounds.

SET PHASERS TO STUN

If you're triggering a drum machine or sound module from a sequencer, you'll probably have noticed how doubling up the pattern (ie. sending the same information down the same MIDI channel twice) causes the double-triggering of the sounds to create a kind of phasing effect. This can be quite useful for giving flappy drum machine sounds a much harder edge. Try trebling or quadrupling up and see what happens.

The phasing ploy can be used to accent individual sounds, and is effective when creating big, bad bass drum sounds. If you want to go further down this road, try programming two bass drum samples on the same beat, but pitch one of them up by two or three octaves.

GRUNGE HILL

As a spin-off from the interest in analogue synths, there has been a revival of interest in the use of lo-fidelity techniques to give rhythm loops more roughage than a bucketful of All Bran. If this is the kind of territory you're interested in exploring, there's plenty you can do to dirty up your dance drums.

The basic advice here is to connect your drum machine through anything you think might distort the sound in some way — guitar pedals, the filter section of an analogue synth with an external

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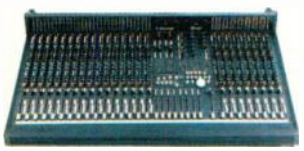

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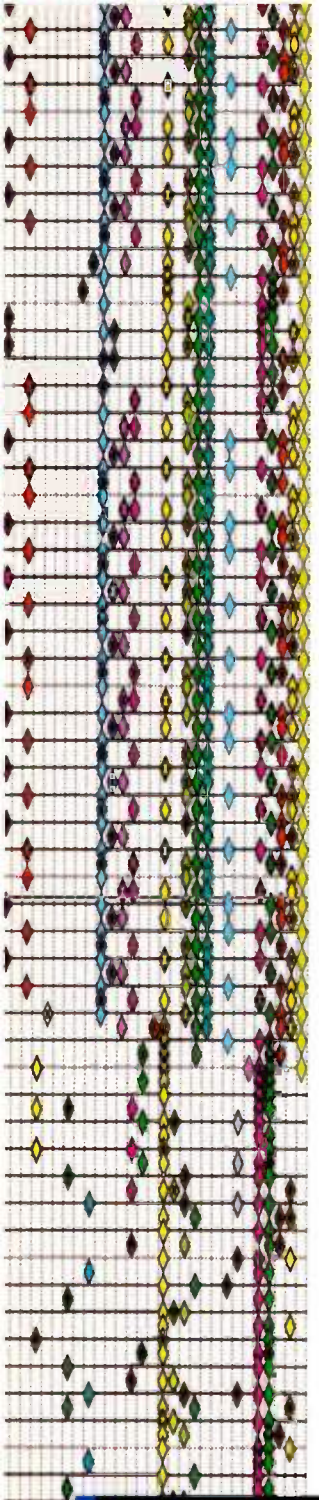


input... even a miked-up bowl of custard if you feel it'll create something interesting.

Effects treatments are an obvious place to start. Even budget units now offer various sound-crunching lo-fi presets. The Zoom 1201, for example — at a mere £99 — offers a number of 'lo-fi' settings, plus a vocoder. Effects plug-ins for programs such as *Cubase VST* are another useful tool for the grunge merchant on the prowl. Steinberg's *Grungelizer* and, more recently, the *Trancemitter* plug-in are worth a look, while the BIAS *SFX Machine* gives you a range of effects from radio tuning drift to ring modulation. One piece of freeware I've recently come across is Stephan Sprenger's *North Pole* resonant filter plug-in for *Cubase VST* (for Mac users only at this stage). Go to http://www.prosoniq.com/sms/sprenger.html for details of how to download.

"Try sampling (at low resolution) a beat-box rhythm at twice the tempo you need it, then play it an octave lower..."

There's also a range of external filters to suit every price and pocket, including the Mutator, the Sherman Filter Bank, the Waldorf X-Pole, the FAT Resinator and the wonderfully named Lovetone Meatball. Guitar pedals are also a particularly good source of mangle-isation. Not only are they comparatively cheap, you also get the added bonus of gratuitous hum, noise and distortion, particularly if you overdrive the inputs.

For the grunge programmer on a budget, there are a number of DIY options — all part of general home recording tricks of yesteryear. For your own 'played down the telephone' effect, try running your mix through a low-pass filter set at around 3kHz with a little bit of resonance. Combine this with some sampled vinyl surface noise trimmed to the length of the drum pattern and triggered alongside. You can also try recording your drum machine through a miked-up guitar amp, preferably one with a dodgy spring reverb that's been dropped several times down a flight of concrete steps. Or record your rhythms to tape, then play them back on a portable cassette player turned up loud. Stick a microphone in front and enjoy.

SAMPLED DELIGHTS

Samplers provide another creative behaviour-modification tool. For a quick-fix lo-fi effect, try sampling your drum machine pattern at a low resolution and then trigger it from your sequencer as you would a loop from a sample CD.

If you know your sampling maths, you'll be aware that when you play a sample an octave higher than its original pitch, the sample is in fact running at twice the speed. And conversely, if you play it an octave lower it runs at half the original speech. So try sampling (at low resolution) a beat-box rhythm at twice the tempo you need it, then play it an octave lower than the sample key it was assigned to. The result is a detuned version of the rhythm running at the correct tempo. Obviously, you can play around with the tempos and sample playback speeds to arrive at different combinations of these tempo/detuning parameters. If anyone has a mathematical formula for determining the precise results of this approach, I'd be glad to hear it.

When sampling your own loops, it's a good idea to always apply some kind of effect during the sample recording process — reverb, chorus, flange, distortion, EQ, filter. Basically, what we're interested in is messing up the frequency content a little, to try and blur the edges of the original drum voice. Once you start pitching the rhythms up or down, the results will be that much more interesting.

IN THROUGH THE OUTBOARD

Here are some (very general) observations on the use of external kit with drum sounds:

• REVERB

Percussion always benefits from a touch of reverb, though the precise settings will generally be determined by what's going on with the rest of the track. For a harder-edged sound, go for plate reverbs. Gated reverbs appear to have long gone out of fashion as the *de rigeur* effect for snares — I certainly never touch 'em myself, guv. But you might want to try reverse reverb as a once-in-a-blue-moon special effect on fills. For all our sakes, though, please use sparingly.

• EQ

If you want to create ground-shattering basses, it's not just a question of cranking up the low end. The 'bass-ness' of a sound is more defined by the sum of frequencies and the shape of the wave than the fact that it inhabits a frequency deeper than hell itself.

If you must play around with EQ, try boosting at around the 80Hz mark. But you might also want to try cutting the mid-range back slightly, to tighten up on the muddiness which often results.

• COMPRESSION

Unlike real drums, the sounds from drum machines are generally well-behaved enough not to require much in the way of compression. However, if you want those larger-than-life big beats, try a low threshold value (-20dB or lower), a ratio of 12:1 or lower, and a release of around 40-80ms. Then play around with the attack times until you get a hard-edged sound.

• TEMPO DELAY

Tempo-related delay is one of the most underrated rhythmic tools in the drum programmer's kit, and provides a good way of creating complex-sounding rhythms from otherwise simple percussion lines. Some delay units kindly allow you to simply punch in the tempo and the musical value of the delay you want, and they will then make the necessary calculations. The rest of us need to keep a calculator or a tempo delay chart about our persons.

To work out the sum, divide 60 by the BPM value, then divide again by the desired sub-beat (4 for a quarter note, 8 for an eighth note, 12 for an eighth-note triplet). There are also lots of freeware tempo-delay calculators available on the Internet. A trip to the Shareware Music Machine site (http://www.hitsquad.com/smm) produced links to various examples for Windows PCs, Macs and Ataris.

• PITCH SHIFTING

Tempo-related pitch-shifting delay can be another useful tool. For example, try feeding a single hi-hat beat into a pitch-shifting delay, set to give eighth-note repeats that rise or fall by a semitone with each repeat. Then stand back and be amazed. You can also use pitch-shifters to create dub effects which rise and fall in pitch throughout the pattern.

Clearly, you can apply this basic technique to entire rhythms or just sections of them. For example, you could investigate the potential of sampling the hi-hat and top line of percussion, then running that as a detuned rhythm loop against a bass and snare pattern provided by your drum machine/sound expander.

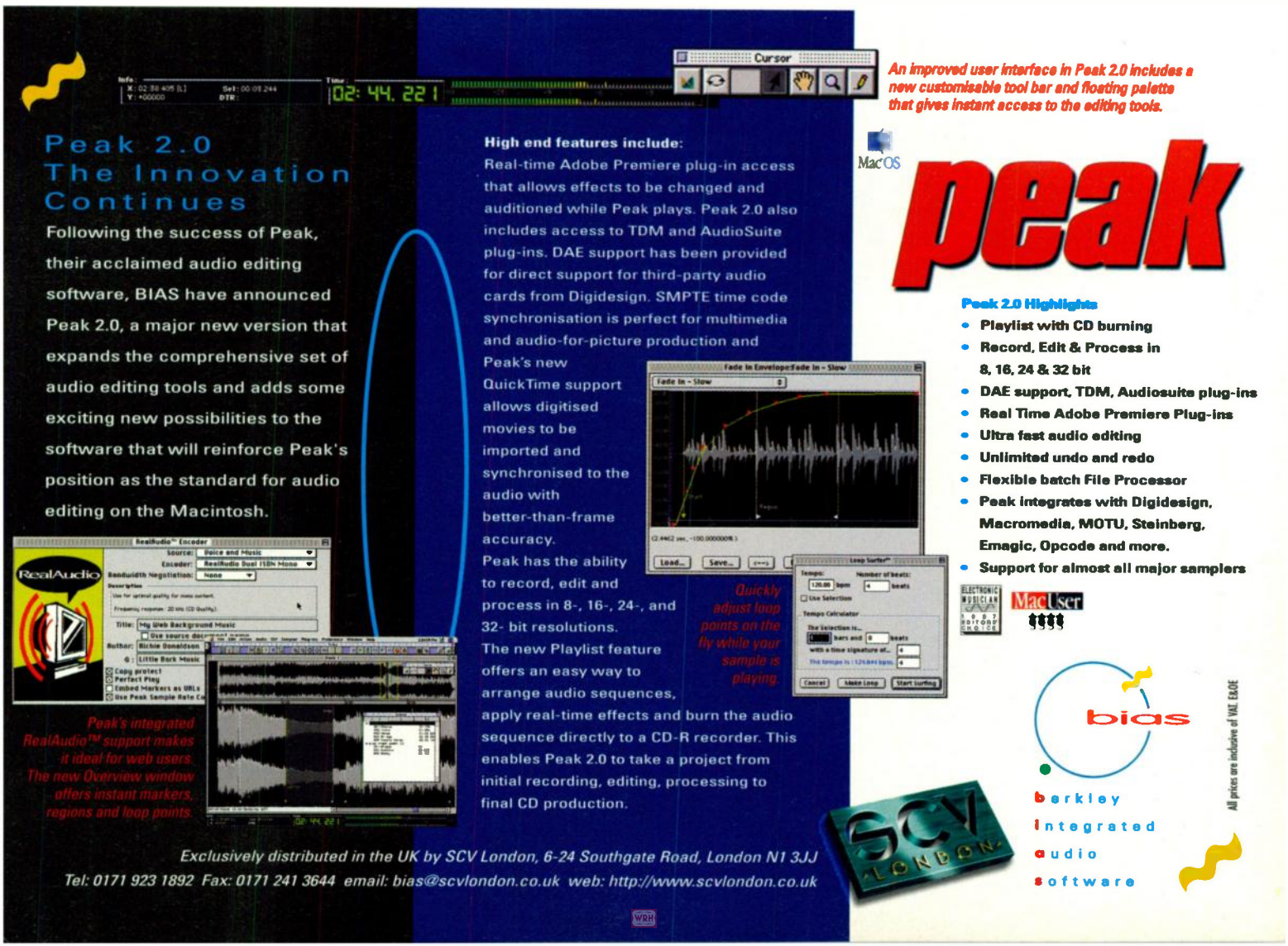
Another technique related to the one above can be used to produce ethnic-sounding, lo-fi percussion tracks. Again, this trick is based on the fact that samples played an octave higher run at twice the usual speed. Let's say you sample a rhythm loop on middle C. Now play it back using the G below and the G above. This works particularly well with patterns made up of latin and hand-held percussion — bongos, congas, shakers and so on. You usually end up with a plicky-plucky percussive line at the top and a heavy-sounding tom tom-style beat running underneath.

AND FINALLY...

If you want to add a touch of real-life ambience to your rhythm tracks, as well as bringing in all that touchy-feely human stuff I was banging on about in the second instalment of this series, why not record part of your rhythms live, using *real* instruments? While I recognise that most people don't have the luxury of a full drum kit to call on — or, indeed, the kind of neighbours who would tolerate the noise — it's relatively simple to add percussion parts to bass/snare rhythms with tambourines, shakers, maracas and other instruments. You might even consider vocalising these sounds. Providing you're not the sort of person who feels self-conscious going "tss-te-te-tss-te" or "che-che-che-che" into a microphone, you might find you actually enjoy it. In one memorable (and, I have to admit, drunken) session, a friend and I once partnered a drum machine pattern with the sound of cutlery being shaken in a tambourine and recorded through a guitar pedal flanger. But we've both had treatment for it now.

Clearly we're beginning to stray into territory normally inhabited by fresh-faced *Blue Peter* presenters, but just before we fall into the abyss, I might as well encourage you to raid the kitchen for pots, pans, glass jars and bags of rice, with which to construct makeshift rhythm instruments. Just make sure an adult is present whenever you attempt to use the scissors.

And there you have it. Go forth and make beauteous beats. I'm off to watch that old *Blue Peter* episode where John Noakes makes a drum machine dust-cover out of squeezy washing-up-liquid bottles and a length of sticky-backed plastic. SOS



Beat Club

ZOOM RHYTHMTRAK 234 DRUM MACHINE

New drum machines are few and far between these days, but as NICHOLAS ROWLAND discovers, this one has a lot to offer even in a world full of computer sequencers.

In this sequencer-driven, multitimbral world, you would think that beat boxes might have hung up their virtual drumsticks some time ago, out-gunned by alternatives which are often far more versatile and a great deal more expandable. However, the fact is that at the budget end of the music technology evolutionary scale the dedicated drum machine still has its place — for live playing, for non-MIDI musicians, and for those times when you simply don't want to turn on two grand's worth of computer technology just to beat out a simple cha-cha-cha. That explains steady sales of models like the Alesis SR16 and the Boss Dr Rhythm series of drum machines. And it also explains why Zoom's first departure from the effects units for which they are justly renowned takes the form that you see here on these pages. Actually, 'drum machine' is a slightly too tight-fitting phrase for the new RhythmTrak 234, as its subtitle — 'drums/percussion/SFX/bass' — might suggest. First, it offers loads of sounds: not just drums and percussion but melodic basses of all shapes and timbres. This in itself makes it interesting for guitarists, keyboard players and instrumentalists looking for a rhythm section. Second, it offers some novel ways of manipulating these sounds in real time. Third, along with its 99 preset and 99 user programmable patterns, it gives you the facilities to play with loops DJ-style — building up and breaking down rhythms layer by layer. Fourth, all this is yours for a modest £199.

PLASTIC FANTASTIC

The RhythmTrak is sounding good before you even start to remove the packaging. Take it out of the box and it looks very good indeed. It's a well-designed piece of kit, with a low-profile grey plastic case and the fan-shaped arrangement of the main drum pads giving it, to my eyes, a pleasing, slightly futuristic appearance, like something you might expect to play a crucial part in the plot of a *Star Trek* movie. On a more down to earth note, the RhythmTrak also feels as though it has the mettle to stand up to the kind of (un)fair wear and tear that drum machines usually experience in their lifetimes. The rectangular shape of the 13 drum programming pads makes it easy to tap them with

two fingers — ideal when you feel the urge to simulate the opening bongo roll from the Pearl & Dean theme tune. They are also velocity sensitive, with a choice of seven sensitivity options. Above each pad — and, indeed, above most of the other buttons — is a tiny LED which lights whenever that pad is played or whenever the sound assigned to it is triggered. This is extremely useful when you're editing a drum pattern which uses lots of different sounds, as it enables you to quickly identify which pad/sound combination is playing. As the drum pads are also used to access many of the machine's programming features, these LEDs also help you keep track of which editing function is live at any one time. With clear labelling, a logically laid out front panel and the main 6-digit, 7-segment LED in the centre of the unit, the RhythmTrak is very easy to get to grips with, even without recourse to the manual. And as I didn't have a manual for most of the review period, I speak from experience.

Around at the back you'll find a power switch, the input for the supplied 9V transformer (wall-wart alert) and a small rotary control for overall volume. Along with these are stereo outputs on quarter-inch jacks, an audio input, two inputs for control pedals, and a MIDI In socket. The lack of a MIDI Out did cause me to raise a few eyebrows — or, more correctly, to raise my two eyebrows several times. However, as the RhythmTrak 234 is aimed primarily at the solo instrumentalist, or the gigging musician, rather than at the fully fledged MIDI studio muso, I'm sure most potential users won't see this as a disadvantage. That said, I would like to have seen at least one more auxiliary output, particularly on a unit offering melodic bass sounds, since these are often likely to require separate processing from the drum sounds.

SOUNDS GOOD

The RhythmTrak has a total of 174 basic sounds, including the basses, which are assembled in various combinations to give 124 drum kits and 50 melodic bass patches. The styles into which the kits are grouped (displayed on the front panel) show that the emphasis is firmly on contemporary popular styles — rock, funk, hip-hop, techno and rap. That's confirmed by preset patterns which cover styles such as rock, thrash, metal, punk, techno, acid jazz, hip hop, funk, big beat, R&B, ska etc... not a paso doble or a Gay Gordon in sight. It's all competent (and occasionally inspiring) stuff. As each preset comes with an appropriate bass line, they're great to jam along to. Each kit consists of 13 instruments, with the first 100 kits comprising conventional collections of drum sounds — in other words, bass drum, snare, three toms, hi-hats, crash and ride cymbals, with the rest of the numbers usually made up with latin and ethnic percussion sounds. The last bank of 'Percussion/SFX' kits consists of collections of more exotic sounds, ranging from temple blocks, tablas and gamelan, to off-the-wall FX such as thuds, squeaks, ghostly howls and reversed cymbals. Among this list you'll also find a brush snare set, classical orchestral collection, and a set of cymbals. Overall, the individual sounds are excellent, and many of them also have a distinctive, slightly grainy character which is not unappealing. There are plenty of crowd-pleasers in the form of big ambient rock drums, feisty hip-hop kits and snappy techno sounds. The TR808 and TR909 imitations are pretty good, with the bass drums in particular having plenty of bottom end. And among the ethnic percussion you'll find some of the best drum machine tablas I've ever come across.

A RhythmTrak pattern can make use of any combination of three drum kits, plus one sound from the bass bank (each one of these pattern elements is henceforth known as a track). This means that for each pattern you have access to a total of 39 drum sounds, plus bass. Note that the kit and bass assignments are memorised as part of the pattern data, so switching to a new pattern brings up the appropriate kit selections. You can also program an overall volume for each track and save that as part of the pattern data.

A PATTERN IS EMERGING

Even if you haven't used a drum machine before, you'll find the pattern programming and playback functions very easy to get to grips with. Both step-time and real-time recording are available, with the basic stop, start, pause and record duties handled by four tape transport-type buttons in the top right-hand corner. Pattern length is programmable between 0 and a generous 99 bars, although options for time signatures are rather restricted at 2/4, 3/4 and 4/4. Progressive jazz rockers will have to look elsewhere. Possible quantise values are 4, 8, 12, 16, 24, 32, 48 and Hi (in other words, quantise off), with 16 being the default. The quantise value also determines the timing of the auto-roll function (controlled by the elongated repeat/step key below the drum pads) as well as the length of the rests when inputting in step time. You can also apply a swing function, to shuffle-ise the pattern, and make offset-timing adjustments to give the pattern more of a human feel. Tempos can range from 20-250bpm, and it's good to see that the RhythmTrak has a tap tempo function, which was often lacking even from more expensive drum machines of yore. With facilities such as programmable count-in and click volume, plus an easy delete function (both for individual instruments and whole patterns), programming the RhythmTrak really is very straightforward indeed.

SHAPING UP

During programming you can make use of the Sound Jammer function — the slider on the left-hand side of the panel — which allows you to continuously adjust the pitch, volume and tone (known in RhythmTrak speak as 'Sound Change') of individual instruments as you record. Pitch and volume behave in much the way you'd expect. But the effect of the 'Sound Change' function varies from sound to sound. In some cases, moving the slider up will lengthen the decay and increase the attack of a sound. In other cases, it will allow you to crossfade between two variations of the same sounds — for example, between a ride cymbal 'surface' sound and a ride 'bell' sound, or between a closed and open hi-hat sound. At other times you can toggle between two completely different sounds — a clap and a cowbell, for example. This is a great tool, even though you are restricted to just one Sound Jammer function at a time. You can ▶

pros & cons

ZOOM RHYTHMTRAK £199

pros

- Easy to use.
- Great looking.
- Has bass sounds.
- Innovative features, including real-time 'jamming tools'.

cons

- No MIDI Out, which could be a problem for some users.
- Lacks super-detailed editing facilities.
- The dreaded wall-wart!

summary

The RhythmTrak 234 offers a lot of bang (not to mention kick, snare, hi-hat and bass) for the buck.

SOUND ON SOUND

"The RhythmTrak is an excellent debut outside the company's usual sphere of operation."

also use the Sound Jammer function when playing the pads along with a pre-recorded pattern or song. However, it has no effect on the pre-recorded pattern itself during playback. Incidentally, when the Sound Jammer function is not activated, the slider doubles up for virtually all other data entry functions — another factor which makes the RhythmTrak easy to use.

FEEL A SONG COMING ON?

Songs are assembled from blocks of user patterns. Technically, you can't use the preset patterns in this way, though you can get round the restriction by copying presets to user locations. Each song can consist of up to 255 steps (one step equalling one pattern) and the RhythmTrak can store up to 99 songs. Tempo and volume changes can be stored as part of the song, while bass tracks can be transposed up or down by up to six semitones. With these parameters at your disposal it's possible to construct fairly complex backing tracks for, say, a live performance. As with all hardware sequencing devices, though, the real limit is available memory. In the RhythmTrak's case this weighs in at a reasonable 13,000 notes.

GETTING INTO THE GROOVE

While the concepts of pattern and song programming should be fairly familiar, pressing both song and pattern buttons on the RhythmTrak allows you to explore stranger territory: RhythmTrak's world of groove play — described in the manual as playing with patterns "like a DJ spinning records". You can assign any of the RhythmTrak's 99 groove loops, or any of the 99 user-programmed patterns, to any one of the 13 drum pads. The pattern starts playing as soon as you touch the pad, and if you touch the black bar as well it will continue to loop until you stop it by pressing the drum pad again. You can build up and break down percussion tracks layer by layer, with a maximum of four patterns playing at a time. Once again, those tiny LEDs keep you, the customer, informed at all times as to which pad is active. However, you will need a good memory, as there's nothing to indicate which loop is assigned to which pad. You will also need a good sense of timing and accurate button tapping skills, as the various loops don't automatically lock in with each other — they just start whenever you hit the pads. This is a source of potential embarrassment or a great creative bonus, depending on (a) your rhythmic abilities or (b) your sense of creativity. Those whose (b) outweighs their (a) might be interested in the prospect of assigning the same loop to two different pads, then starting the second one, say, a beat or two after the first to create impressively complex polyrhythms. Like the preset patterns, the preset loops cover a multitude of 'modern' styles: impressive big beat and hip-hop workouts, delicate ethnic percussion lines, thumping bass lines and twiddly arpeggios. You can also alter the global pitch, volume and tonal characteristics of the loops in real-time via the Sound Jammer control. However, this is something of an imprecise science: only those with a good sense of pitch will be able to manipulate the melodic loops to create something approaching a tune. Nevertheless, it's a great function and you can have lots of fun...

ABOVE THE DIN

Judging by its single MIDI In, I wasn't expecting great things from the RhythmTrak's MIDI specification, but in fact I was pleasantly surprised by how comprehensive the spec is. Each of the three drum kits assigned to a pattern can be triggered over a separate, programmable MIDI channel, as can the melodic bass patch. A special Auto mode for the bass means that when the RhythmTrak receives a GM sound source bass select message, it automatically switches the bass track to the appropriate MIDI channel. Kits and basses can also be called up using pre-assigned program change numbers. In the sync department, the RhythmTrak 234 will slave to an external MIDI clock and recognise MIDI starts and stops. All the Jammer parameters can be accessed via MIDI and all the sounds will respond to pitch bend — what more can the creative rhythmster want? What you can't do, though, is program patterns remotely — in other words, record a bass line using a keyboard. And obviously the lack of a MIDI Out also means that you can't dump RhythmTrak data to any external devices or use it to trigger external modules.

Along with MIDI control, you can also access the Jammer functions via a continuous controller footpedal (such as Zoom's very own FP01). An on/off footswitch type (such as the Zoom FS01) allows remote starting and stopping of playback too. You can also program the unit so that a pedal of this type will trigger any of the sounds or switch between two specified sounds. This last function allows you to switch between an open and closed hi-hat sound, if, for example, you were using the RhythmTrak 234 as a sound source with MIDI-fied drum pads.

VERDICT

I raise my hi-hat to Zoom. The RhythmTrak is an excellent debut outside the company's usual sphere of operation. Indeed, given its highly competitive price, I'd happily live with the RhythmTrak's failings, which, I must stress, are relatively few. The bottom line is that the RhythmTrak not only delivers a lot for the money, but manages to come up with several new twists on what you would have thought is now a very tried and tested formula. To paraphrase Zoom's corporate slogan: Catch it if you can. SOS

A SUITABLE BASS FOR TREATMENT

Calling up a bass patch assigns it chromatically across the 13 pads in semitone steps. In default mode, E2 is the lowest note. You can transpose the patch as a whole, or set individual notes for each pad, in a range from A1 to A4. These settings are then memorised as part of the pattern. Another useful function is the fine-tune facility, offering a 435Hz-445Hz range. There's a very comprehensive set of bass sounds, ranging from twangy Indie-style bass guitar samples to pumping analogue synth soundalikes. In between, there are funk pops and slaps aplenty, hybrid bass/percussion sounds, and a rather impressive gritty bass slide. The Sound Change function allows you to further express yourself by bringing out the resonance on synth basses or beefing up the bottom end of acoustic guitar samples.

info

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