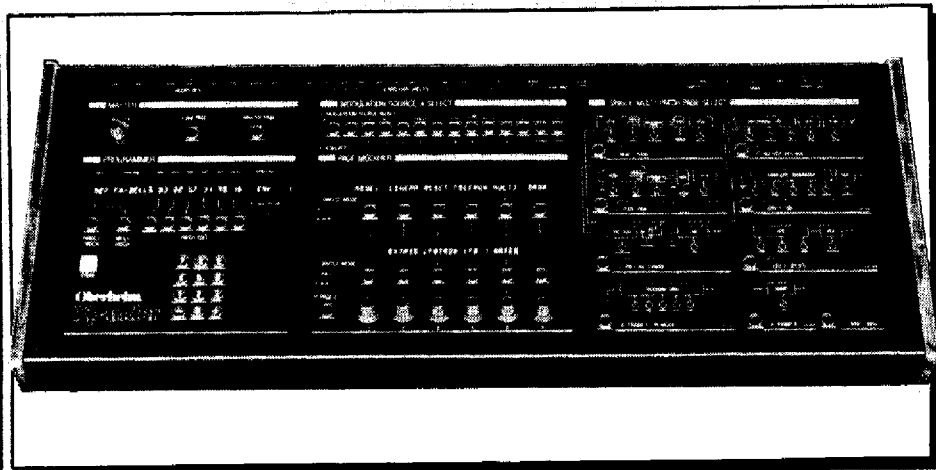


Oberheim Xpander

The Xpander represents Oberheim's idea of a first class, no-holds-barred modular synthesiser, but does the high price-tag put its fascinating blend of analogue and digital technology out of the reach of the musicians who need it most? *Paul White*



The Oberheim Xpander represents a radical departure from conventional synthesiser design in that it has no keyboard, and takes its playing instructions in the form of control voltages or MIDI code. This is not as strange as it may appear at first sight, as it can be played via another MIDI-equipped keyboard, by a sequencer or even by several independent monosynths.

It's this kind of flexibility that makes the Xpander so useful and, as each voice may be programmed to produce a different sound, the eight voices may be configured as a single polysynth, eight monosynths or anything in between.

Clever application of electronic design techniques has enabled the Xpander to retain the flexibility of a modular design without the user having to resort to patch leads, and the makers claim that the unit's design philosophy offers the user more choice and sophistication than is currently available from any other programmable polysynth.

Certainly, the unit's paper specification makes impressive reading. You can't argue with 31 LFOs, 30 envelope generators, 12 oscillators, 18 tracking generators, 24 ramp generators, and no fewer

than 90 (yes, 90) VCAs.

Voicing

Each Xpander voice may be programmed independently, and the filter design is such that 15 different modes of operation can be selected, enabling virtually any commercial synth filter to be emulated. Two voltage-controlled oscillators generate the usual array of waveforms, and phase sync may be employed on Oscillator 2, each oscillator having its own VCA.

Additionally, FM synthesis may be adopted by modulating Oscillator 1 with Oscillator 2 under control of one of the onboard microprocessors, and although this is a fairly simple form of FM, authentic, harmonically rich sounds can in fact be created quite easily.

The modulation section is really quite bewildering, as any modulation source may be routed to any destination or combination of same.

Each voice has five envelope generators and these incorporate a delay time function in addition to the usual attack, decay, sustain and release parameters. There are also five LFOs per voice, and

these reputedly offer 64 different waveform variations.

There are three five-position tracking generators per voice, and these convert linear inputs to non-linear ones and, used in conjunction with the keyboard, may be used to control the filter tracking. And as if the above selection wasn't enough, there are also four ramp generators and a lag processor so that portamento can be applied not only to pitch but also to modulation sources.

Front Panel

Finished in the distinctive Oberheim black and blue livery, the panel contains

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all the controls in addition to three information displays based on green alphanumeric LED matrices.

Patch editing is divided into sections, so that when a function is being edited, up to six parameters are available and can be adjusted simultaneously. This is a vast improvement over those polysynths that assign only one variable to a control at any one time, and makes experimentation with sound both easier to achieve and considerably more productive. During editing, the six parameter values and names are displayed on one of the Xpander's three LED readouts, and this information is referred to as a Page. When a new Page is selected the settings for the previous Page are held in memory and the controls are in permanent edit mode, enabling rapid

changes to be made during performance.

All this is made possible by the use of stepped encoders which, although they look like ordinary rotary controls, are in fact much more sophisticated devices that can be rotated continuously, there being no end stops. Moving the knob clockwise increases the parameter value while turning it anticlockwise, not surprisingly, decreases it.

A useful built-in automatic tuning facility enables the oscillators, filters and VCAs to be calibrated under control of the internal microprocessor in a few seconds.

Programming

One hundred voice patches may be stored within the machine, but what sets the Xpander apart from so many other polysynths is that each of its six voices is programmable individually, and any combination of those voices can also be stored in memory, resulting in a vast number of possible combinations. This 'multipatch' memory remembers the control source for each voice, any keyboard splits that have been set up and the volume and assignment of each voice.

The extensive stereo pan facilities are also programmable, and any of the six CV inputs or 16 MIDI channels can be assigned to control any voice of the Xpander. As these assignments are stored in the multipatch memory, a new assignment may be executed simply by calling up a new multipatch program.

If not all the voices are required to operate independently, two or more of them may be layered together to provide a fatter sound, and the keyboard may be split into up to three sections, each controlling a user-specified number of voices. The Xpander manual claims that this allows you to play bass at the bottom of the keyboard, chords in the middle and melody at the top, but no matter which way I add it up, this would appear to require at least three hands, and no spares were included with the unit we checked out.

The split information, along with other assignment data, may be dumped onto either cassette or a suitable MIDI device, enabling a library of sounds and patches to be built up for future use.

To the right of the front panel is the VCO and envelope section, and this is graphically illustrated to assist in the understanding of modulation effects.

Modulation

This is where the Xpander really goes to town. Twenty-seven sources may be routed to any of 47 legitimate destinations, and the amount of modulation and its effect can be either positive or negative as required.

The modulation sources include two pedal inputs on the rear panel of the machine, and two lever sources are assigned via the MIDI interface. All five envelopes and LFOs may also be used,

and the other sources are ramp and tracking generators, master vibrato oscillator and lag.

When the Xpander is used in conjunction with MIDI, velocity, pressure and release information may be interpreted by the system.

Sound

It's impossible to describe the range of sounds available from this instrument within the confines of the printed page, but what can be said is that it will produce just about any conceivable polysynth sound, plus a good few that you'd never thought of.

Perhaps because the filter configuration is so flexible, all the factory preset sounds are solid and vibrant along the whole length of the keyboard, unlike so many Japanese synths that tend to have woolly bottom ends (like sheep). Oberheim have long been respected for the tonal quality of their filter designs and in this respect the Xpander is a real beauty: you could fiddle with it for days and still find something new.

'The Oberheim's extensive modulation facilities enable you to create sounds that simply defy analysis, even before you bring the FM facility into play.'

Most conventional synth sounds are quite easy to analyse when you've had a bit of experience of setting up patches, but the Oberheim's extensive modulation facilities enable you to create sounds that simply defy analysis, even before you bring the FM facility into play.

Although basic, this last-mentioned feature permits the creation of metallic, bell-like sounds with a fair degree of authenticity. Although this invites comparison with the Yamaha DX series, such an evaluation isn't really valid, since FM is only one weapon in the Xpander's huge synthetic armoury. Nevertheless, it's surprising just what you can do using only one modulator and one carrier, especially when these sounds can be further filtered and modified by the rest of the system.

In such a short space of time it's impossible to do much more than scratch the surface of what this instrument is capable of but, fortunately, a detailed (if somewhat dry) handbook is provided with every Xpander. This incorporates a high fact-to-text ratio and so must be read slowly and repeatedly before much of it sinks in, unless you're a particularly fast learner.

There is also a useful addition in the form of a help guide at the end of the manual, and when things aren't going quite as planned, this could help maintain your temper and sanity.

Conclusions

Polysynth ads always tell you that the instrument's sonic horizons are limited only by your imagination and that you should be able to produce an infinite variety of sounds.

If that's true, then the laws of arithmetic are in for something of a hammering with the advent of the Xpander, because it's likely to extend your gear's sound-producing capabilities by a factor of about ten!

The sounds really are good, and in an age when drummers and guitarists are becoming more level-greedy than ever in live situations, it's good to come across a synth that can cut through at both the bottom and top end.

It's also good to see that old-fashioned CV inputs are provided in addition to the thoroughly modern MIDI, and the Xpander's channel allocation system would appear to cover just about every conceivable eventuality. The external trigger input means that the Oberheim may be used with non-MIDI drum machines, and trigger polarities are switchable under software control for maximum interface flexibility.

The facility for dividing the controlling keyboard(s) into zones – combined with the Xpander's formidable range of stereo panning options – should enable users to create huge soundscapes without recourse to a mixer. If you've got a decent sequencer and drum machine, you could almost consider throwing your tape recorder away. You can even set the keyboard zones to overlap, giving layered sounds over some – but not all – of the unit's octave range.

If the foregoing sounds like a stream of almost continuous praise, it's because the Xpander is one of the few instruments that seems to be free of any serious omissions; a piece of hardware whose designers have considered almost every operational eventuality and made provision for it accordingly.

There's simply no escaping the fact that you could have three DX7s for the same money and still have some spare to go to the pictures and buy some fish and chips afterwards (those were the days...). As a result, it's unlikely we'll see many Xpanders outside professional circles, particularly when you consider that the machine requires plenty of additional – and high quality – auxiliary equipment in order for it to be used to the full.

If you're in the market for an electronic instrument in this price category, then you'll find the Xpander has no serious competitors that can even approach it for musical and technological versatility, but I'm still left with a feeling of slight disappointment that a specification of this completeness has to carry such a high price penalty. ■

The Oberheim Xpander carries an RRP of £3945 (inc. VAT), and further information is available from the importers, Atlantex Music, at 1 Wallace Way, Hitchin, Herts. ☎ (0462) 31511.