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Ensoniq Fizmo

Real-time Transwave Synth

Reviews : [Keyboard](#)Published in SOS March 1999
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Ensoniq were at the forefront of workstation and sampling technology in the '80s, but their recent synth offerings have not kept up with the fashion for controller-festooned techno boxes. The Fizmo, however, updates their take on wavetable synthesis with extensive real-time control. **Derek Johnson** explores further...

We've had Swedish, German, Japanese and even British companies doing it -- releasing backward-looking synths using MIDI-driven new technology. However, few American companies have entered the fray. A handful of dedicated developers are producing limited-run modular synths as if the '80s had never happened, and Bob Moog is testing the water with his Moogerfooger range of synth pedals, but it's a surprise to see the first new synth in a while from Ensoniq covered in retro knobs, bedecked with funky colours, and rejoicing in a name that could be described as jazzy, and a sound that could be described as '80s retro.



Let's Get Fizzical

The paint-job will be the first thing you notice about the Fizmo if you take a test drive, and it caused one or two jaws to drop around here when it was first removed from its box. According to Emu-Ensoniq, opinion is divided 50/50 between those who love it and those who... don't. With some modern synths, you have to wonder how long it will be before they look dated. With the Fizmo, there's none of that kind of worry; it looks dated already, courtesy of a weird '80s graphic-design airbrush effect on its purple-and-blue top panel. In a low light or from a slight distance the artistic effect is actually very good -- a bit like a Monet!

Aside from the technicolour flash, Fizmo's package is quite conventional, in a 'modern synth' kind of way. Its springy 61-note synth-action keyboard is velocity- and aftertouch-sensitive, and has attendant pitch-bend and modulation wheels. The central area of the top panel is where the knobby action is, with 34 buttons and 23 knobs promising quite a lot in the way of hands-on tweakability. The domed oval buttons, especially, are very attractive, with many featuring an off-centre integral LED, so that the effect when they're active is of many little eyes glancing sideways! Some of the buttons have another neat attribute: they can be double-clicked, like a mouse button, or even triple-clicked, to access different modes or speed up parameter changes.

If the Fizmo is generous on the button and knob front, it's not quite so bounteous when it comes to displaying data: the LED window is very small, consisting of a mere four 7-element LED characters. Staying with small for a moment, the knobs are also surrounded by some of the tiniest lettering known to synthkind! There are nice touches elsewhere though: for example, the stereo audio outputs and single audio in, dual footswitch socket and MIDI In, Out and Thru are located under a sort of protective overhang at the rear, which is good news for live users. However, the PSU is an external brick (albeit not a huge one), which is not so handy for live use, and the synth lacks a volume-pedal socket.

Trans-Vision Synth

The Fizmo's knob-laden appearance might make you wonder whether it's going to try to be some kind of virtual analogue or groove machine. Well, it's not -- although, to bring it more into line with current market trends, Ensoniq *have* provided it with an arpeggiator, a vocoder and a set of real-time control knobs. The Fizmo is actually a 'Real-time Transwave Synth', based on a development of digital technology that was first introduced by Ensoniq in the late-'80s VFX. It's not imitative, and it won't recreate an orchestra or jazz band in your back room. It's a synthesizer, pure and simple, designed for the creation of sounds you can't get anywhere else. And despite what your imagination may be doing with that name, the Fizmo is *not* physically modelled!

In keeping with the 'traditional synth' feel, the Fizmo's multitimbrality is rather limited compared to what we're used to these days at just four parts, though polyphony is more up to date, at 48 voices. Neither figure tells the full story, however: many Fizmo sounds are made to be stacked or split across the keyboard, like traditional megasynths of old such as the Roland Jupiter 8, so being able to address four sounds on separate MIDI channels is a bit of a bonus, if you like. Stacking timbres also cuts right down on that 48-voice polyphony, but for the kind of powerful, movement-filled sounds that result from stacking you often don't need that many notes going at the same time.

Effects are just the icing on the transwave cake: two processors are provided, but without a computer editing package they're rather basic.

Wave Hello

Transwaves are essentially wavetables made up of multiple short samples (or Frames; the terminology derives from celluloid film, where 24 snapshot frames per second make up the semblance of a moving image). The frames may be sonically related to each other or completely unrelated, and although the order of frames in a Fizmo wavetable is fixed, the user can introduce further sonic variety by changing the start point of a transwave, or modulating it. Each Transwave constitutes a Fizmo 'oscillator', and as with the output from oscillators in analogue or other sample-based synths, the Transwaves

ENSONIQ FIZMO

£995

pros

- Sounds fantastic.
- Basic but decent vocoder.
- Excellent arpeggiator.
- Comprehensive knob control.

cons

- Tiny display.
- A bit pricey.
- Polyphony may be limited for some users.
- Current manual in severe need of forthcoming update.

summary

The Fizmo is a breath of fresh air in the current market, and one of the most distinctive and usable synths I've heard in recent years.

SOUND ON SOUND

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Soft Sell

A free Emagic *Sound Diver* editor for the Fizmo is being developed as this review is being written. It will provide access to a much wider range of parameters, allowing much more precise control over

may be processed by a collection of traditional synth parameters (envelopes, filters, effects, and so on). The arrangement of two oscillators and their attendant synth parameters is called a Sound. The sonic upshot of this architecture is a synth with more timbral depth, movement and variety than the average sample-based instrument. Though the transwaves are composed of samples, the way the technology is used means that the Fizmo almost never betrays its sampled provenance through dead loops or obvious multisample crossover points. Certain transwaves have a human quality, and with names such as 'Vowels', 'Syllables' and 'Transwave OO', it's immediately clear what some of them are going to sound like.

Superficially, the Fizmo even has one or two points in common with Yamaha's FS1R (see review in SOS December '98) -- especially in the case of the vocal-like Transwaves, which can feel rather like simple formants. And the FS1R similarity doesn't stop there; Fizmo users interface with the Fizmo's synth engine through the so-called Preset (analogous to an FS1R Performance), which is composed of up to four Sounds (like the four Voices on the FS1R), layered or key-split across the 61-note keyboard.

Of the 58 raw waveforms at the heart of the Fizmo, 55 are transwaves; the remaining three are sawtooth and square waves, for straight-ahead analogue synth emulation, and a simple electronic drum kit multisample (dubbed FIZDrums).

Close To The Edit

Straight out of the box, the Fizmo has 64 Presets, arranged in two banks; as explained a moment ago, each Preset is composed of four 2-oscillator Sounds (a total of 256 Sounds). Programming is 'from the top down': start with a Preset, select the four Sounds of your choice (these can be nicked from any other Preset), layer them or split them across the keyboard, choose an effect -- and at its simplest, that's it. There are no empty user Sound or Preset memories: you have to save edited versions over the factory patches (although forthcoming free editing software will allow user sound libraries to be easily built up and stored via computer).

The next level of sound-tweaking involves the F I Z M O knobs. These are five lettered real-time control knobs which can be used to make instant changes to all the Sounds in a Preset at the same time -- and changes made in this way can also be saved. Three of these knobs are generally fixed in their function, and two are user-definable to a certain degree, though both are ready-assigned in the factory Presets. None of their functions relate in any way to the letters next to them, and some might say that rather more mundane labelling that actually told you what the knobs do would be preferable. As near as I can tell (the manual being pretty awful and much of this material having been deduced from experimentation), the FIZMO knobs do the following:

- F: Effect modulation.
- I: Wave modulation.
- Z: Filter cutoff.
- M: Oscillator detuning.
- O: Varies from Preset to Preset.

If you're one of those perverse people who prefer to get something really original out of the synth you've just spent five pounds short of a grand on, you can go further with Sound edit (this mode is entered as soon as any knob or button is touched).

A Sound's signal path is roughly mirrored in the knob layout on the front panel, and approximately follows that offered by a familiar, traditional analogue synth. After you've selected a Sound from the current Preset for editing (using one of the small 1-4 nu

What's In A Name?

According to Eric Montgomery, of Emu-Ensoniq's tech-support team, the story of the Fizmo's name goes like this: "When companies develop products in house, they are assigned a code name so you don't have to discuss it by saying, 'you know, that new keyboard we're working on'. It was a code name that we felt reflected what the product was like -- it's something vintage and futuristic at the same time." Now, isn't that better than a tongue-twisting alphanumeric? The word may be essentially meaningless, but like all the classic instruments of old, it's something you can latch on to. Minimoog, Prophet 5, Jupiter 8, Synclavier... Fizmo. It works!

numbered buttons next to the display), it's then necessary to select one of the Sound's two oscillators (ie. Transwaves) for editing, using one of the two OSC buttons. Once the oscillator is activated, all the knobs to the right of the OSC buttons work on that oscillator -- though if both OSC buttons are depressed simultaneously, the knobs can edit both oscillators.

The different sound-modifying sections are divided by screened vertical lines. In the Wave section, a transwave can be chosen for the oscillator being edited, and a modulation source and amount can be set: as mentioned earlier, modulation in this context has the effect of starting playback of a transwave at some point other than its beginning. The Pitch section offsets oscillator tuning by +/-24 semitones, the Glide section sets Portamento, and the Envelope Generator section has dedicated Attack, Decay, Sustain and Release controls, as you'd expect. There are actually three EGs on offer (pitch, filter and amplitude), with a switch to swap between them.

An Amplitude section, next, hosts controls for oscillator level and pan position, and a Filter section features cutoff frequency and resonance controls for the low-pass 4-pole filter, plus a variable keyboard tracking control which varies cutoff value depending on keyboard position, for a brighter or duller sound.

The last area of the panel relating to synthesis is the LFO, which offers a variety of wave-shapes (triangle, rounded triangle, sine, rising triangle, rising sine, sawtooth, square and positive ramp, plus noise) and variable speed -- though LFO speed can also be sync'd to the FIZMO's master clock or incoming MIDI clock. You'd normally expect to find a depth control with an LFO, but this function is covered by modulation amount knobs in several of the other sections.

Once an oscillator has been passed through the synthesis sections, all that remains is to assign it an effect.

A Flock Of Treatments

Two effects processors are available, one offering global reverb, which can be applied in one of three preset 'amounts', and one providing an 'insert' effect (the selection includes parametric EQ, chorus, flange, delays, distortion, and combinations of effects). Their quality is fine, but there's not a lot of variety: just eight reverb variations, and 41 insert effects, each of which also has variations. Aside from selecting a variation, the user only has control over the wet/dry mix, though the 'F' real-time controller knob is generally preset to modulate effects parameters in some way. More effects flexibility is provided with a computer editor -- preset effect amounts, for example, should become fully variable (see the 'Soft Sell' box for more details).

One insert effect that's worth mentioning separately is the vocoder: the audio input at the rear can be routed to this, allowing the Fizmo user to impose vocal characteristics, articulation and speech on synth sounds played from the keyboard. Vocoders pass through cycles of popularity, and are currently on a high (look back at SOS January, 1994 for a feature on the use and abuse of vocoders). In addition, the audio input can be routed to any other insert effect, meaning that a voice or any other instrument can be treated to what the Fizmo's effects have to offer.

Upside Down

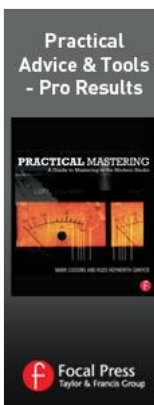
As well as up to four Sounds and two effects, a Preset can also carry with it an arpeggiator type and setting. No fewer than 118 arpeggiator patterns are

FIZMO Specifications

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available, and if you only go by the manual you will have no idea what any of them are supposed to do, since they are not listed there! Discovered on the Ensoniq web site, however, and apparently due to be included in a manual update, is a list of all pattern names. Yippee...

A variety of up/down note combinations is provided, and there are also "riffs". Some arpeggiations even alter pan and modulation rather than notes, which is nifty. Note resolution can be set by the user, as an abstract value or an exact note value (whole note to 32nd note, with many triplet options), and the arpeggiator is sync'able to Fizmo's master tempo or incoming MIDI clock. Parameters are also provided for key range, note duration and 'feel', and you can choose to have minor and major thirds, fourths, fifths and octaves added to the arpeggiated notes. The last option is capable of creating some excellent effects.

Lay Your Hands On Me

The Fizmo is a very nice synth to use, and its architecture is comprehensible and approachable. Obviously, it's great to have all the knobs, and the real-time FIZMO knobs are OK as far as they go, but with their factory preset parameters they don't seem to do anything really drastic. Of course, the F and the O knobs can be assigned parameters of your choice, which could make a big difference. The small display is just about functional, when you get used to the cryptic abbreviations, and you don't really miss an LCD once you get going (keep the manual handy, though).

Initially, editing can be confusing, since many of the buttons behave differently depending on whether they're pressed once, double-clicked or triple-clicked. If in doubt about what you're editing, just remember that the button corresponding to the Sound or oscillator being edited has a solidly lit LED. With a bit of familiarity, new sound creation is fast and quite easy, but the small size of the front-panel legging could eventually engender curvature of the spine, especially in dim lighting conditions.

I was a little disappointed by the basic and largely preset nature of the effects, which leaves the user without much control over what could be one of the most important aspects of sound tailoring. The forthcoming computer editor should help a lot, but if you don't have a computer it won't help at all!

In line with a new tradition I've just created, of saving the worst until last, the manual deserves special mention: apart from the fact that there's no MIDI spec (though Fizmo owners will be able to request it), it's confusing, badly organised and missing important information -- such as what the variations on the Insert effects are, for example. I understand that the manual is being reprinted, though, and that big changes are being made in the process.

Sound (Not) Of The Crowd

There's not an imitative sound anywhere in the Fizmo, and that's great as far as I'm concerned. Instead it's stuffed with lush and sparkly pads, melting, eerie and epic atmospheres, and impressive analogue-style leads and basses. General MIDI? The Fizmo's never even come within shouting distance of it.

MIDI Control

The Fizmo's front-panel editing knobs and real-time controllers allow the user plenty of opportunity to manipulate the synth. However, there will be times when it needs to be controlled remotely, and to this end, Ensoniq have provided a useful MIDI spec (though this is not printed in the manual). First of all, four incoming MIDI Controllers can be designated as so-called System Controllers, which can, along with mod wheel, pitch-bend and aftertouch, be assigned as modulation sources when editing the Fizmo. In addition, Fizmo can be set to transmit NRPNS -- non-registered parameter numbers -- over MIDI to an external sequencer. Without going into too much detail, NRPNS are generated by all of the Fizmo's editable parameters; once recorded into a sequencer, tweaked parameter changes will play back exactly every time the sequence is played.

The multitimbral side of the Fizmo is quite straightforward: the user selects a base MIDI channel, which plays the currently select Preset, and referenced to this are the arpeggiator control channel (base + 1), and the MIDI channels which will play the four Sounds individually (base + 2, +3 and +4). Interestingly, Sounds within a Preset can also be changed remotely, using Bank Select commands. A detailed list of Sound to Bank Select/Program Change numbers can be found on the Ensoniq web site.

use it on almost everything. It's that kind of synth.

Do go and have a listen. If you've liked Ensoniq's older synths, such as the VFX family, you're almost certain to be impressed with the Fizmo. If you're relatively new to synthesis and you've never heard Ensoniq's synths, it's about time you did. **\$995**

information

- 61-note velocity- and aftertouch-sensitive keyboard.
- Four programmable keyranges, and four possible zones.
- 48-voice polyphony.
- Two effects processors.
- Vocoder.
- Arpeggiator.
- 44.1kHz sample playback rate.
- 20-bit D/A conversion with 100dB dynamic range.
- 97dB signal-to-noise ratio.
- 2Hz-20kHz frequency range.
- Left/right quarter-inch outputs.
- Stereo headphone output.
- Audio input (quarter-inch jack).
- Single/dual footswitch input.
- MIDI In/Out/Thru.
- 64 Presets, 256 Sounds.
- 24 knobs, 32 buttons.
- 4Mb of 16-bit internal wave ROM (featuring Ensoniq 2nd-generation Transwaves, created through digital synthesis and resynthesis).

The Fizmo's sound quality actually reminds me of several monosynths I've had in the past -- it had me rushing to old demos to check if I was hearing correctly. I was: there were certain sounds and effects I used to get out of Yamaha's CS40M and Korg's Mono/Poly that were jumping out of the Fizmo. Uncanny. But a real '80s digital feel also creeps in, with some patches you could swear just fell off a Thompson Twins or Van Halen record. If there's a downside, it's that the factory pads become a bit 'samey' when you're getting towards the end of listening through the whole factory set. Yet the vast majority are still enormously usable. Many of the Preset sound splits, which often place a bass (sometimes with arpeggiator setting) on the left hand and a monosynth-type lead or rhythmic pad on the right, are instantly playable and invite composition. Personal favourites include P17 Rhythm Pad Split, which is so evocative; P03, Bass & Lead, which couples a fizzy, faintly Minimoog-like lead with doubled octave effect and a tight, chugging, functional bass doing 16-note arpeggiation; and P06 Analogue String Pad, a standard (but very nice) old-fashioned Juno/Jupiter-style brassy string pad. I could go on for quite a while here, but sadly space forbids.

Ensoniq's web site, by the way, already has new Fizmo sound sets, and at least one has been programmed specifically for the dance market. Personally, I think I might have had enough of the dance market!

Don't You Want Me?

Fizmo is a playable instant atmosphere machine before you even start to program it, and there's enough depth in its synthesis system to keep you interested for ages. At the same time, it's quite easy to program, with the hands-on control offered by the knobs being most welcome. The only slight sticking point could be the price: £995 might be seen by some people as a lot to pay for a machine that won't produce entire orchestral arrangements (though I hear from the LA NAMM show that a 5U module version, which will be a little cheaper, is on the way). That said, I can imagine buying a Fizmo, keeping it for a long, long time, and getting very good value for money out of it, because I'd probably

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T Emu-Ensoniq +44 (0)1753 630808.
F +44 (0)1753 652040.
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Published in SOS March 1999

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Fax: +44 (0)1954 789895

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