Teenage Engineering Pocket Operators £49 each

Teenage Engineering products always generate much excitement. **Bruce Aisher** fills his pockets to see what all the fuss is about

INCLUDES AUDIO

vault.futuremusic.co.uk

WHAT IS IT?

A range of portable synths and drum boxes that tip a nod to hand-held computer games from yesteryear

CONTACT

Who: Teenage Engineering Tel: +46 8 599 953 72 Web: teenageengineering. com

HIGHLIGHTS

- 1 The price
- 2 Those animated displays
- 3 Sync capabilities



ast year Teenage Engineering got tech-nerds and hipsters alike palpitating with deconstructed, retro-edged,

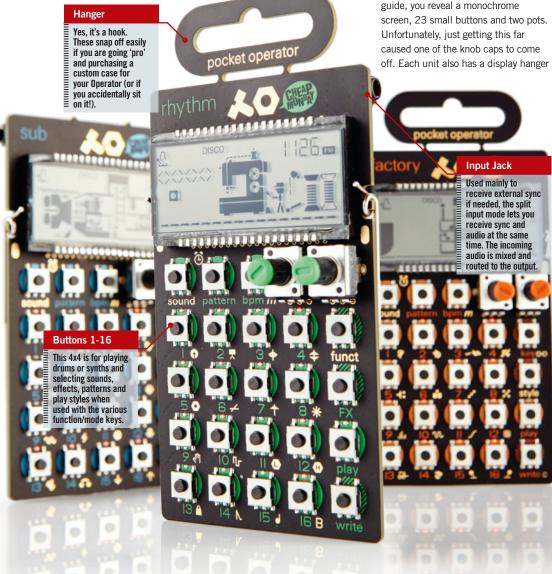
yearning on the announcement of their three upcoming calculator-style synths designed in collaboration with Swedish clothing brand Cheap Monday. Besides the question of what a company that makes jeans has in common with a cutting-edge audio company, most focus was centred on the unusual

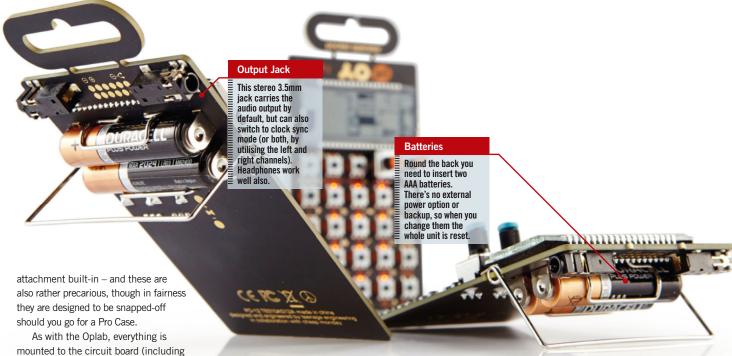
display that featured as a centrepiece to these new synths. The next question was usually whether they would prove to be amusing toys that happened to make a noise, or cheap-and-cheerful drum machines and synths that could be used to create worthwhile music. We'll revisit that question later.

The Pocket Operators include Rhythm (a drum synthesizer), Sub (a bassline synthesizer) and Factory (a melody synthesizer), with the latter two harnessing synthesis methods ranging from FM and subtractive to wavetable and physical modelling.

I'm the operator...

The Pocket Operators come in a similar deconstructed packaging to the TE Oplab unit looked at in *FM* last year. In other words, there's no case – though these are available as an optional extra. Each PO is palm-sized and, once you've peeled off the cardboard shell that doubles as box and quick start guide, you reveal a monochrome screen, 23 small buttons and two pots. Unfortunately, just getting this far caused one of the knob caps to come off. Each unit also has a display hanger





mounted to the circuit board (including the rear panel AAA battery holders and 3.3mm ins and outs). The screen of the Pocket Operators is centred around a particular visual theme - a sewing machine (PO-12 Rhythm), submarine (PO-14 Sub) and factory and crane (PO-16 Factory) - which are reminiscent of Nintendo's early-'80s Game and Watch hand-held games. In each scenario different elements move and respond to button presses when playing back patterns. There are a few parts of the display which provide more direct visual feedback (including tempo and the positions of the two pot controls), but everything else has to rely on a three-digit display area at the top right of the screen. So, from the outset

Synchronicity

Despite their size, the Pocket Operators offer quite a bit of flexibility when it comes to tempo synchronisation. The different sync modes are accessed by using the function/key button and pressing 'bpm' to increment through the six options.

The simplest scenario utilises one PO as the Master plugged into a Slave unit via a stereo 3.5mm jack-to-jack

cable. In this situation a tempo pulse is sent from the Master unit down the left channel, while audio goes down the right (to be mixed with the second PO's output). This allows you to use just one audio out (from the Slave unit) to carry all the sound to your headphones or amp etc. All three (or more) can be connected in this manner.

Should you wish to lock any (or all) of the

POs to an external source such as a Korg Volca or SyncKontrol. there is an option for receiving sync only on the jack input of the POs. This also allows you to run a click pulse from a DAW track via vour audio interface to the Operators.

Like any simple clock pulse sync system, there is no start/stop linking, but this allows for more creative possibilities.

the focus appears to be on fun rather For the PO-12, think the Roland TR series mixed with a Linn LM-1 or Oberheim DMX, but more gritty

than functionality. With this and the cost in mind, it is understandable that the LCDs are not backlit, and in practice this wasn't an issue.

The Rhythm

I decided to dive in with PO-12, the Rhythm section of the family. After plugging in the batteries - which apparently can keep the unit on standby for two years - it was time to turn the unit on. Except that there is no on/off switch, so it's merely a question of diving straight in, having a play and then leaving the unit to drop into standby mode when you've finished

(which keeps the LCD screen on, but LEDs off). There's no external power option here, though modding one yourself wouldn't be too difficult.

Pressing the button marked 'play' was simple enough and set the beats in motion. However, it became pretty clear from the start that I needed to run through the quick start guide, and refer back to the overview schematic, and then dive into the manual. There are quite a few combination key presses and knob-twists to remember in order to get to all the features on offer.

In essence the PO-12 offers 16 sounds (each with two adjustable

parameters) that are triggered by one of the 16 (16-step) patterns. Patterns can be recorded live (and are automatically quantised), or in

step-mode, where individual steps can be turned on or off for each sound via a 4x4 grid (buttons 1 to 16).

The sounds in the PO-12 lean very heavily towards those found on drum machines of the early '80s. This was a time when both analogue synthesis and limited bit-depth sampling techniques were used. So think of the Roland TR series mixed with a Linn LM-1 or Oberheim DMX, but altogether more gritty and lo-fi - there's a lot of digital aliasing on some sounds. Whilst I wouldn't say this little box has class, it does certainly have character, though you will need to plug it into a decent

SPECS

P0-12

Real synthesized and sampled drum sounds

P0-14/16

Multiple real synthesizer engines, including FM, subtractive synthesis, wavetable and physical modelled string 16 punch-in bass oriented or arpeggio and chord play styles

AII

16 punch-in effects including delay, bitcrusher and filters Parameter locks Auto compressor and hardware limiter Step multiplier and fill-ins 16-step sequencer -16patterns with chaining Clock and alarm clock Jam sync with audio through 3.5mm audio out/in Animated LCD display Folding stand 2 year standby time

sound system if you want to hear more than the high-frequency, biscuit-tin soundalike, from the built-in speaker. That said, the tiny onboard speaker is a marvel of concealed engineering.

Holding the Sound button while pressing one of the numeric buttons,

selects the relevant drum sound for auditioning or step-entry. Here it's possible to see what the two knobs offer in terms of sound editing. The most common parameters are pitch and decay, but in some cases there is more going on under the hood —

Automatic Fun

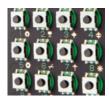
You can automate many of the sound and playback settings...



> Sound parameters for each drum, bass or lead can be tweaked and recorded via the knobs. Pitch and decay are most common, but there are more complex varieties too.



> Drop-in effects selection, including delay, filter, distortion and stutter is recorded and recalled using the FX button. The temposynced filter sweeps are great.

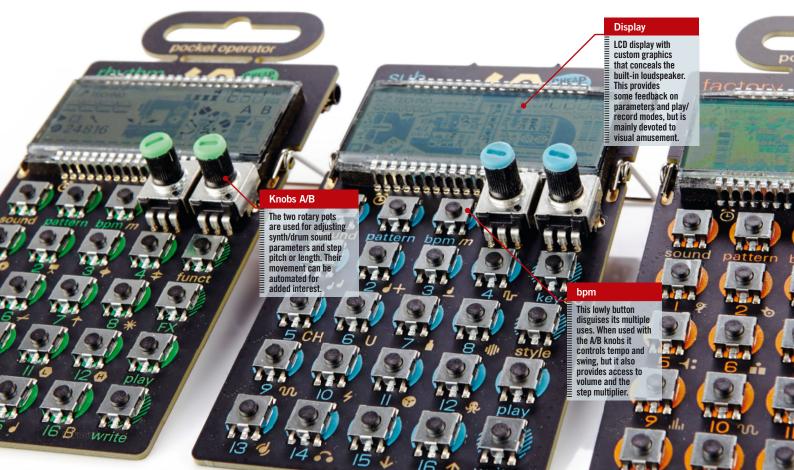


> Play styles for bass and lead lines can be added in real time for each step of a pattern via the keypad. Handy for adding variety to your loops and lines. bit-depth reduction, doubling and snappiness being a few.

I was initially somewhat confused, as making tweaks when a pattern was paused did not make any difference as soon as Play was pressed. It turns out that parameter automation is permanently engaged, so the Write button needs to be pressed while making any sound edits for them to become permanent. This is much like a permanently engaged version of Korg's fabled Motion Sequencing, introduced on their earlier Electribes – and still in use on the Volca range.

Now throw in 16 different (non-editable) effects that can be switched between on-the-fly and it soon becomes apparent that the Pocket Operators are capable of conjuring up some, occasionally inspired, sonic madness with ease. Like the other sound parameters, the effects selection is automated (and is engaged even when Write isn't pressed). The final piece of the picture here is the so-called 'step multiplier' that allows you to add custom glitch-style re-triggers (2, 4, 8 or 16) to any step in a particular sound's pattern (unlike the globally applied stutter effects).

Once you get a handle on these additional keypress combos, and some of their underlying operational quirks, they add another level of interest to even the most lacklustre beat. Patterns can be copied to other slots and chain



together with repeats very easily to make a longer 'song'.

All the time you are doing this, there's the frantic sight onscreen of a small stick figure controlling a sewing machine and bashing out beats. Without wishing to sound too dry or aloof, this provides some brief amusement but I wished more of the screen could have been used for parameter and beat-making feedback instead. Bah humbug!

Dive, dive, dive

The PO-14 Sub synth follows a similar format to the drum module in terms of layout and broader aspects of pattern programming, but this time with a monophonic bass synth combined with a 16-part 'micro drum' section. 15 different bass sounds provide the starting point here. Having selected a sound and cleared the current pattern. the easiest way to get something going is to use the buttons (arranged as two octaves of a major scale) to 'play' a bassline.

Effects can be added as before they are the same in each unit - though

Effects In Your Pocket

Despite their being no reverb, the effects built-in to the POs are excellent. They are the same in each, but the choices made by Teenage Engineering generally work well (excluding the vibrato effect in the case of beat-making). Note also that there's nothing in the way of editing or fine-tuning, so you are stuck with what is provided in each case.

Effects are engaged (or 'punched-in') by

for some reason the button is named

'style' this time. The 'func' button is

labelled 'key' on this one but, even

more confusingly, this doesn't have

pattern, but allows you to access the

'play styles' which turn your simple

single-note bass notes into arpeggios

stick figure controlling a sewing

There's a frantic sight onscreen of a

anything to do with the key of the

pressing the FX button with one of the numeric kevs whilst in play mode. The chosen effect will be active for as long as you hold the relevant key, and the selection will be recalled with each cycle of the pattern. This automated effects selection can be cleared by holding down the FX button for a complete cycle.

In terms of what's on offer, you've got Sample Rate Reduction and Bit

Crushing for a dose of digital nastiness, with Feedback and Distortion completing the gnarly side of things.

Filtering options include fixed low and high-pass as well as tempo-synced swept cutoff versions of the same. Four Stutter types and Note Shuffle add rhythmic interest, with the palette completed by a simple delay. Parameter LFO and the aforementioned Vibrato.

The verdict

In use these units can be a little confusing, so patience is required if you are after more than pseudo-random noodling. The small step LEDs are not always clear, making it somewhat difficult to track the current step.

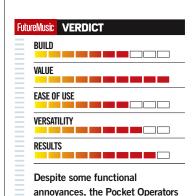
The sync options via the in/out

for running the with other gear. There's no MIDI, which is to be expected.

I did notice a

caused by the 'auto compressor' and hardware limiter, but these do make for a more punchy sound.

All three Pocket Operators are



are a lot of fun.

jacks are helpful units together or

rhythmic ducking

in level on some occasions, no doubt

capable of creating some interesting, and usable, musical elements, though if I had to choose one it would definitely be the PO-12 Rhythm box. And for those who may be of a tardy persuasion they all have a built-in alarm clock! FM



and other interesting note sequence effects. Those opting for a, pricey but nice, Pro Case (£39) will find that this is rectified to provide unity across the range. Like the audio effects, their selection can be automated and saved as part of the pattern.

For more detailed programming, you can edit the note pitch and length of each step and the two synth sound parameters. Should you choose the 16th sound, you get a selection of drum hits chords and effects, which can run in parallel to the bass section.

PO-16 Factory is much more closely aligned to Sub with regards to function and sonics. The main difference here is the preset synth sounds and micro drum elements, with the focus being on melodic and harmonic lines. Like the PO-14, there's no description of the various play styles in the manual. I'm all for experimentation and play, but this minimal approach to documentation (physical or online), which was also evident with TE's Oplab, is not especially helpful.

Korg Volcas £119

ALTERNATIVES

Larger, more flexible and with plenty of modding scope, but double the price of the Pocket Operators.

www.korg.com



Korg Monotron

Another Korg, and just about the cheapest hardware synth you can buy. Analogue all the way, but very basic.

www.korg.com



Apple iPad

If you are serious about mobile music creation then iOS App Store has plenty of excellent choice. You'll need to buy an iPad first though.

www.apple.com