

Arturia MiniBrute | £429

Arturia might be famous for software emulations of classic analogue synths, but no one expected them to release a 'real' one. **Bruce Aisher** gets noodling...

INCLUDES AUDIO

WHAT IS IT?

A monophonic analogue synthesizer keyboard featuring a 100 percent analogue audio signal path

CONTACT

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HIGHLIGHTS

- 1 Flexible oscillator wave-shaping options
- 2 Unconventional but flexible filter design
- 3 Flexible arpeggiator section

Arturia need no introduction in music-tech circles: they've firmly established themselves as one of the leading vintage synthesizer emulation development companies, with a range that embraces classic monophonic, modular, polyphonic and digital-analogue hybrid designs. More

recently, they've explored the hardware arena with the standalone DSP-based Origin hardware, or via software and controller systems such as the Spark drum machine. Given that all their prior sound-generation systems have been firmly bedded in software, though, it came as quite a surprise when Arturia announced the MiniBrute,

a 'real' hardware synth. In essence, it's a single oscillator VCO-based synthesizer allied to a 25-note keyboard – though, as we'll see, this somewhat undersells the full spec.

On opening the box and picking up the unit, the first impression is that the MiniBrute is weighty and substantial. The case is made of aluminium with plastic side-trim, and the keyboard is of the two-octave full-size variety taking up the full width of the unit, above which sit the pitch and modulation wheels, and the densely populated synth programming section – Arturia really do squeeze in a lot of knobs, switches and sliders here.

Disappointingly, the MiniBrute draws its power from an external 12V PSU, though we suspect this won't be a deal-breaker for most.

Ultra metal

The MiniBrute, as stated earlier, has a single oscillator, but this does somewhat understate its sophistication.



Oscillator Mix

Three waveforms plus sub-oscillator and noise can be combined in any way you wish, and even mixed with external audio.

Filter Section

The filter is of the flexible multi-mode variety offering low-, high-, band-pass and notch options. Despite the relatively tame filter slope, resonance can be quite extreme.

LFOs

The MiniBrute features two LFOs – one dedicated to vibrato another more flexible for broader modulation duties. It can also synchronise itself with the arpeggiator.



Before diving-in, it's perhaps worth reminding ourselves of some synth-design parlance. Although the MiniBrute can generate multiple waveforms simultaneously, they cannot be detuned independently, making this a single oscillator design. The MiniBrute has a VCO (Voltage

Controlled Oscillator) and these generally exhibit more obvious analogue traits (especially instability and unpredictability in frequency terms) in comparison to DCO (Digitally Controlled Oscillators) and true digitally-generated designs. However, there are many variants even within the

with a square/sine-wave switchable sub-oscillator sitting one or two octaves below the others. External audio (taken from the back-panel 1/4-inch input) can also be routed into the synth for further processing and control.

The square wave's 'pulse width' has a dedicated knob for moving between a

full (50 per cent) and narrow (90 per cent) wave shape. More importantly PWM (Pulse Width Modulation) is easily achieved under either

envelope or LFO control. PWM is a classic way to fatten-up single oscillator synth designs. Where the oscillators on the MiniBrute take a detour into the unusual is in the wave-shaping available to the triangle and sawtooth waves. 'Ultrasaw' progressively adds two additional out-of-phase sawtooth waveforms to the first, and allows their pitch to be modulated providing you with sonic variations extending from subtle doubling (sounding much like a form of chorus) to a heavily detuned wobble.

The triangle wave-shaping takes the form of a 'Metalizer' that apparently 'folds' the wave back on itself to create additional harmonics. At extreme settings the result is harsh and clangorous, but subtler variations are easily dialled-in as well. Like the PWM section, the Metalizer amount can be

SPECS

Steiner-Parker 2 pole multimode filter (low pass, band pass, high pass and notch)

Voltage Controlled Oscillator with sub-osc (square, sine, -1 & -2 oct)

Oscillator mixer (sub, sawtooth, square, triangle, white noise, audio in)

Signal Enhancers: Pulse Width Modulation, Ultrasaw generating shimmering sawtooth waveforms, Metalizer bringing extreme triangle harmonics, Brute Factor™ delivering saturation and rich harmonics

LF01 with 6 waveforms (sine, triangle, sawtooth, square, random square, random sine) and bi-polar modulation destinations (to PWM & Metalizer, Pitch, Filter, Amplifier)

LF01 clock syncable to Arpeggiator (Arpeg, or free).

LF02 with selectable rate and 3 vibrato modes (trill up, trill down, sine)

2 x ADSR Envelope Generators with selectable slow/fast speed (from 1 millisecond to more than 10 seconds)

Keyboard Tracking on the VCF Cutoff

25 note semi-weighted keyboard with aftertouch (assignable to Cutoff or Vibrato amount)

Continued overleaf...

The MiniBrute has a single oscillator, but this does somewhat understate its sophistication

VCO stable – from discrete designs (built from separate components) to those built into a single custom chip alongside filters, LFOs and envelope control sections. The MiniBrute falls into the traditional discrete VCO design camp, but includes some interesting additions that take its sound-generating capabilities beyond what, at first glance, appears to be a modern take on Roland's classic SH-101. This also means that the synth requires a warm-up period of at least five minutes to reach a pitch-stable state.

In the mix

The Oscillator mixer section, consisting of six sliders, provides the best overview of what's on offer. Sawtooth, square and triangle waves, alongside a white noise source, can be mixed in varying amounts. These are bolstered



Arpeggiator

Not content with just up and down patterns, the arpeggiator can also do a fine impression of a 16-step sequencer.

Ins and Outs

The MiniBrute hosts a healthy complement of interfacing options. A USB connection takes care of simple computer-based communication and serves to ferry MIDI data back and forth, as well as being a conduit for firmware upgrades and a means of accessing

various additional editing parameters not available from the front panel.

Standard MIDI In and Out sockets are also provided.

Of particular interest to analogue synth connoisseurs will be the CV (control voltage) and Gate connectors (on 1/8-inch jacks) allowing independent control over

the Amp, Filter, Pitch and Note trigger. More surprisingly, the MiniBrute can also output a CV/Gate derived from the keyboard (including pitch bend).

Alongside the 1/4-inch line-level and headphone outputs you also get an audio input jack for mangling external sound sources.

ALTERNATIVES



Dave Smith Instruments Mopho Keyboard

£600

Fine-sounding and flexible multi-oscillator mono synth from the godfather of MIDI (and commercial polyphonic synthesis).

www.davesmithinstruments.com



Roland SH-101

around £600

Far less flexible – and more expensive than the MiniBrute – but the only choice if you really want the ‘101’ sound.

www.ebay.co.uk

modulated under both envelope and LFO control.

So far, it's clear that the MiniBrute has a far greater range of individual oscillator-shaping capabilities than many mainstream analogue designs, though the synth does lack the fully independent wave control of a true multi-oscillator synth.

of the switchable multi-mode variety, offering low, high and band-pass, as well as a notch option, plus resonance (capable of self-oscillation). The filter in fact harks back to a topology originating in the '50s – but now most associated with the rare Steiner-Parker Synthacon. This is a somewhat unusual choice as the filter slope, at its most

other Roland, Moog, Oberheim...) clone. However, you should be aware that it does make it difficult to achieve certain tones with which a hefty 24dB/oct filter would make light work, although the ‘Brute Factor’ control, which introduces some controlled audio feedback into the signal chain, does help add extra grit if required.

The MiniBrute is not cheap, but it does represent good value for money given the range of features

Of course, a synth isn't just made from oscillators. In the subtractive synthesis arena, the filter section is just as important and, like the oscillators, the MiniBrute takes a somewhat unusual route. The filter is

extreme, is of the relatively tame 12dB/octave variety.

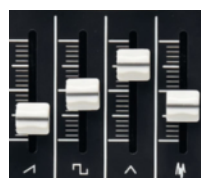
In use, this isn't a particular problem and, arguably, gives the MiniBrute its own unique character – it's not just a SH-101 (or

The MiniBrute has a dedicated four-stage ADSR amplitude envelope for level shaping. There is also a similarly designed filter envelope section,

which also doubles as a modulation source for the oscillator's PWM and Metalizer elements discussed earlier. These can also be modulated, along with amplitude, filter cutoff and pitch, by the LFO section, which offers six waveform types. A particularly interesting feature here is the ability to clock the LFO rate to the built-in arpeggiator tempo. It would have been very useful to have had a way to change their relative rates, but scarcity of panel real-estate (and cost) may have precluded this. In addition, another LFO is dedicated solely to vibrato (pitch modulation duties), with its own rate and shape controls. It's depth, alongside filter cutoff, can be controlled by the position of the modulation wheel or keyboard Aftertouch.

The Good and Great

Three reasons why the MiniBrute is a force to be reckoned with...



> The MiniBrute manages to squeeze a lot of mileage out of what appear to be – at first glance – a conventional array of oscillator waveforms. Wave shaping and distortion controls associated with the square, triangle and sawtooth waves expand the possibilities of this diminutive beast.



> Arturia's choice of filter is unexpected, but in use provides a good range of ‘subtraction’ options that sit well with the oscillator section. This also helps give the MiniBrute something of its own sound – it's not just another ‘Rolobermoog’ clone.



> Arpeggiators are fun and creative, but often lack flexibility. This MiniBrute's arp allows you to achieve classic up/down arpeggios, but goes somewhat further with its swing and clocking options, and most notably its capabilities as a basic step sequencer.

Ups and downs

The final, but important, playback element is the arpeggiator. This manages to squeeze quite a large amount of functionality into such a small space. Up, Down, Up/Down and Random trigger modes are included, but if Hold mode is enabled the external editing software allows you to switch from the pitch-sorted to time-sorted arpeggios. In practise this allows you to build-up simple sequences note-by-note.

Six different Swing variations can be dialled-up alongside six step-rate values – especially useful when clocking the Arp from an external source (enabled automatically if MIDI Clock is received via the MIDI In or USB port). A nice touch is the Tap tempo button for matching the Arp speed to a real-time source – holding down the Tap button switches to relative mode for more accuracy. If using an external clock, holding Tap

The Software...

The MiniBrute comes with a USB port and editing software but this shouldn't be seen as a full patch editor. In fact, it's mainly used for updating the synth's firmware and providing access to parameters not available on the front panel. For example, we did find that the default sensitivity of the Aftertouch was such that the effect kicked in rather quickly – especially noticeable

when used with vibrato – but the software does let you choose a gentler onset curve. We also changed the LFO re-triggering and legato playing modes, though these would have benefitted from more immediate front-panel access. This is clearly one area where digital control and menu systems (or just more knobs) can be advantageous, but Arturia do strike a reasonable compromise here.



switches the Tempo knob to a clock divider, so plenty of flexibility here.

In use, the MiniBrute was immense fun and surprisingly flexible. Bases, leads and effects were all easy to achieve, and with no memory storage in sight, experimentation was the key. But this reveals the true heart of the MiniBrute – for those brought-up on synths with multiple presets and built-in effects, the MiniBrute might seem like a step back into the dark ages, even if the upside is the possibility of sonic originality.

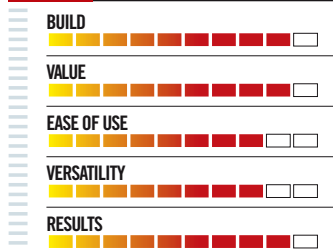
It's a great performance synth, that encourages you to play, but for live use you'll need to be nimble-fingered to conjure up different patches in quick succession, even if Arturia kindly

provide some blank cutout patch cards for 'storing' your own creations (along with a few pre-printed 'presets' to get you started). We were also impressed with its CV (control voltage) interfacing options, allowing the MiniBrute to integrate into a fully analogue environment with ease.

Value for money

In price terms, at an RRP of £429 (which could 'street' at £399) the MiniBrute is good value for money given the range of its features, and when compared to its nearest modern competitors (units such as the more expensive Analogue Solutions Leipzig-K and Dave Smith's Mopho Keyboard) it's a bit of a bargain. The final word on

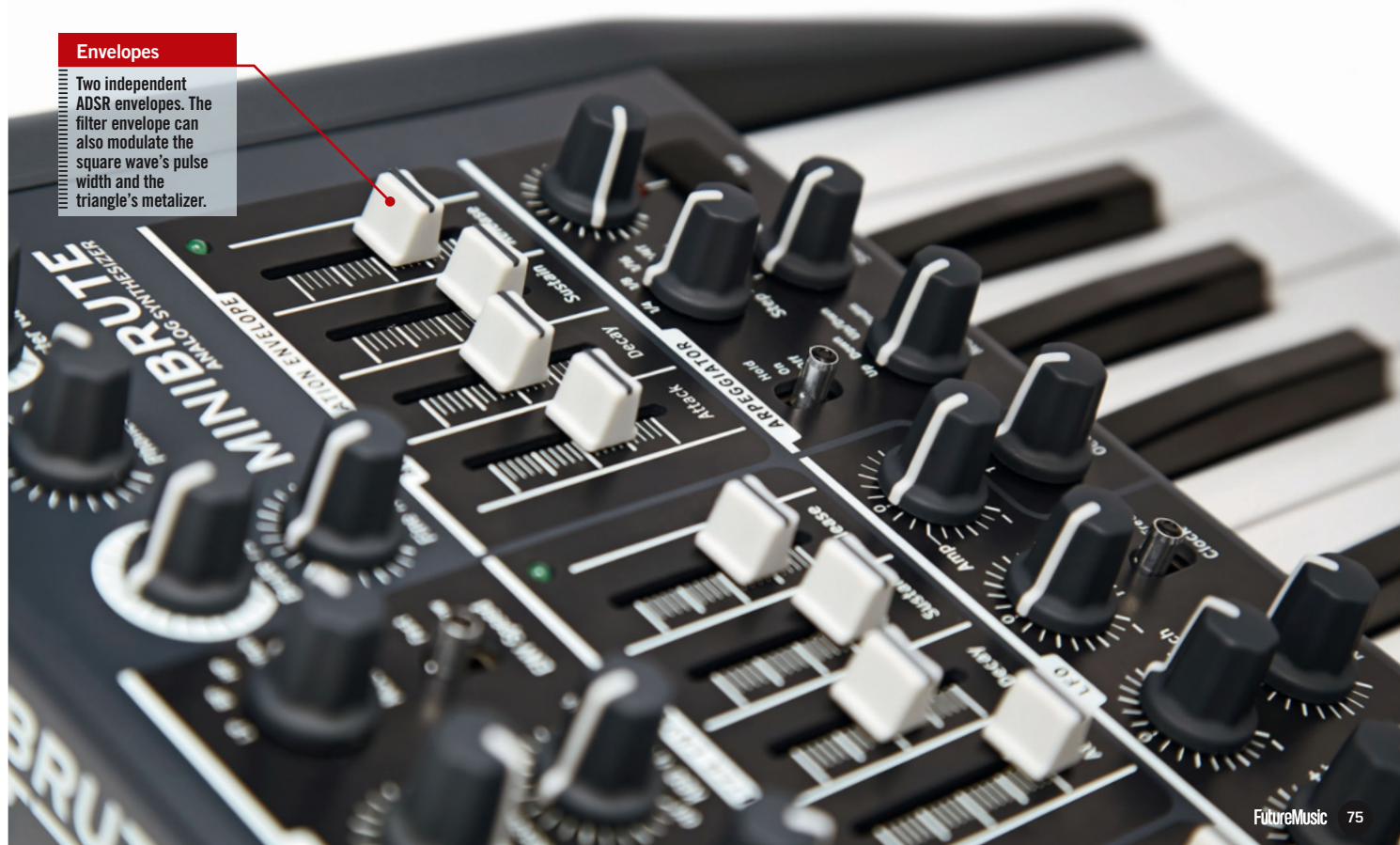
this then is that we're seriously considering buying one – though we might have to wait for the 'PolyBrute' should Arturia decide to make one! **FM**

FutureMusic **VERDICT**

A great little synth, which manages to pack a lot of punch into its modest frame.

Envelopes

Two independent ADSR envelopes. The filter envelope can also modulate the square wave's pulse width and the triangle's metalizer.

**SPECS**

Mod wheel (assignable to cutoff, vibrato or LFO amount)

Pitch wheel (with selectable bend range)

Octave selector from -2 to +2 octaves

External analogue audio input

CV In/Out controls:
Pitch, Filter, Amp

MIDI In/Out

USB MIDI In/Out

CV Gate source selector
(Audio/Hold/Keyboard)

1/4-inch audio output and
1/4-inch headphone output

Arpeggiator: 4 modes, 4 octave range control, 6 step divisions, 6 swing positions, Hold function, Tempo knob, Tap tempo, MIDI Sync

Dimensions:

325 x 390 x 70mm

Weight:

4kg