

MFB Kraftzwerk | €580

It's mini, it's mean and it's modular – what more could you want? *Marc '01'* looks for some free time

WHAT IS IT?

A semi-modular analogue synth that's smaller than a copy of *FM*

CONTACT

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HIGHLIGHTS

- 1 Analogue circuits
- 2 Semi-modular with loads of patch points
- 3 Small and light

MFB is the brainchild of Manfred Fricke, boutique analogue designer who has been running out of his

Berlin HQ for many years now. This is his latest and greatest synth design, and it follows the MFB tradition of offering powerful but tiny synths for a very reasonable price.

Its small footprint is significant and, as far as analogues go, this might have highest feature to size ratio of any semi-modular synth out there. To give you an idea, the case is a couple of

inches smaller than a copy of *FM*.

Inside you get a triple VCO, dual LFO, 24dB low-pass filter, VCA and dual ADHSR modules. Add 34 knobs, 13 switches and 37 patch points to the surface and you get a synth with loads of sonic potential.

One of the main reasons for its small size is because it uses the smaller 1/8" mini-jacks for patch points, and smaller than average (but still perfectly formed) knobs and miniature toggle switches. On the subject of build, it does have a

bit of a project 'feel' to it. This might be to do with the off-the-shelf knobs and switches, as it's a tidy build. The screen-printing is nice and clear, and overall it's good enough for this price point not to be a complaint.

The unit arrived with half a dozen patch leads which are just long enough to span the furthest patch points, a special PSU and a two page printed manual in German. I downloaded the UK version from the MFB website, and it was about as concise as any synth manual can be of this nature.

The MIDI channel for the CV convertor is set using dipswitches at the back of the unit, and there's also a little heat-sink which can kick out a bit of heat once it warms up.

When the unit powers up, the oscillators are tuned up and stabilise automatically. It seems to hold it's tuning quite well, and I didn't notice any drift in pitch.

Must be modular

As the name suggests, a semi-modular synth all the modules are connected internally, and it should be able to make noises without the need to do any





patching. While the patch points provide the opportunity to explore and experiment with the signal path and combine different modulation sources.

The modules are laid out from left to right, dual LFO's are on the left, followed by the triple VCO and the low-pass filter in the middle. Next we have the VCA and on the far right is the dual ADHSR section.

To understand the normal signal flow, all I needed to do was examine the patch points and their associated knobs up close and all was revealed. MIDI note messages are automatically converted to CV and Gate values. These are wired in to the oscillators and envelope sections so there is indeed no need to patch up anything to get a sound going.

Each of the three oscillators and the noise source has its own volume level

Breaking The Line

Patching is a big part of fun to be had with the Kraftzwerk. It's quite safe to try any combination as nothing can really be damaged when plugging in a cable. There are 37 patch points on the top panel, plus four more on the back for handling CV, Gate Pitch Bend and Mod

wheel. It's definitely worth learning the internal routing first, but breaking things up with the cables can lead to some pretty crazy noises being spewed out. The LFOs in particular can be called upon for all kinds of cross-modulation up to audio rates, and can also

be plugged into the mixer and used as a noise source. Pitch Bend and Mod wheel can be used live, or as part of a MIDI sequencer pattern which opens things up further, and of course, any other modular synth can get involved just by patching it in any way you wish.

– these route into the filter and on to the VCA. Turning the gain past five opens it up and gradually lets the sound through without triggering it with an volume envelope.

Envelope one is routed to CV cut on the filter, this is joined by a second CV

input that uses a small pot to set the amount, and is normally linked to key-tracking.

Both LFOs have predefined functions – LFO 1 is assigned pitch modulation duties. It can be switched between all the oscillators, or just

SPECS

Osc: Three with Tri, Pulse and Saw waveforms. Individual and mixed outputs

Sync Input with two modes: OSC 1 or OSC 1+2

Ring Mod: Individual output – summed from OSC 1 + OSC 2 – digital

Envelopes: 2 x ADHSR with switchable linear mode

LFOs: 2 with Reset sync and Rate and CV input

LFO 1 Shapes: Saw, Tri, SQ, **LFO 2 Shapes:** Ramp, Tri, S+H

Filter: 24dB Low-pass with Resonance/Empahasis

MIDI Input: CV, Gate, Pitchbend and Modwheel: patch points, 37 patch points all 1/8th-inch mini jack including main output.

Dimensions

315 x 165 x 38mm

Weight
0.88kg



ALTERNATIVES



MFB Synth 2

£399

Pretty much the same guts as the Kraftzwerk, but swaps the patch points for MIDI control and preset saving. The ADSRs don't have the hold stage, but more than make up for it with an internal step sequencer.

schneidersbuero.com



Future Retro XS

£899

Semi-analogue with full sized knobs and big 1/8" jacks. Offers three-oscillators, sync and plenty of switchable modulation destinations.

future-retro.com



Doepfer Dark Energy

£349

The single oscillator architecture is much simpler than the Kraftzwerk, but can produce a big range of sounds thanks to the cunning modulations.

doepfer.de

Filter-Feedback

It's been suggested by some that the 24dB low-pass filter has a 'Moogy' quality to it, and there is some truth in that statement. One of the classic Minimoog tricks is to plug the output of the filter back in to the external input in order to introduce a little bit of feedback. This in turn has the

effect of beefing up the sound, making it thicker, and at higher settings, muffles the resonance so things can get good and grungy.

When the output of the VCF is fed back in via the top input, the Kraftzwerk exhibits the same quality. In fact it can sound much more alive

cranking this right up along with the resonance maxed out to restore some of the lost high end. The filter is capable of self-oscillation, and it begins to overload when the emphasis control is more than half way.

This imparts a grungy and aggressive character, which is distinctly different from the

softer, Moog sound. Part of this also comes down to the way that it doesn't seem to roll off the highs as much.

The lack of mellowing can sound more present or piercing, depending on the situation. A really useful and simple addition to the sound canvas nonetheless.

OSC 3 and, as mentioned before, LFO 2 automatically goes the VCA section.

Meet the triplets

The triple VCO features three identical oscillators, each with triangle, pulse and saw waves. They all have a three-position octave switch, and the third oscillator goes an octave lower than the others. This is useful for bass duties, but also because it's the default oscillator for sync. This can be substituted with a different source via the sync input and a rocker switch selects whether either one or both of the other two oscillators get the treatment.

The digital ring modulator is the only bit of the signal chain that isn't analogue. This has its own output, and so needs to be patched into the VCA mixer to be heard, but can be also used as a modulation source.

The ADHSR envelopes are an interesting alternative to the norm, and supply an extra 'hold stage'. By default, they are exponential, but either one can be switched to a linear response. This is

good enough for tight zaps and some percussive, but not quite the right shape for sophisticated kick drums.

Space invaders

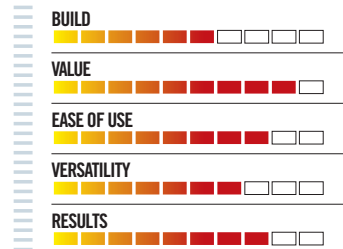
Without any patch cables, there's plenty of room for tweaking, and the high contrast white on black labelling makes it easy to see what's going on. Even the knobs for the dual ADSR, which are quite close together, still feel like there is enough space for tweak-happy fingers. All that can change when patch cables come into the equation. Like any other modular system, cables can get in the way a bit, especially if they have to go from one side of the unit to another, e.g. patching one of the ADHSR's into the LFO CV.

There are a few omissions to the line up that it would have been nice to see. First up there's no internal glide, so you will have to use a glide enable CV keyboard. Oscillators are short of a sine wave and there's no manual PWM.

Sound wise, the Kraftzwerk has a bright top end, exhibits a harder tone

when cranking the resonance. There's no doubt this synth beats a lot of the competition when it comes to size and price. Obviously it's an enticing proposition to get such a capable modular in such a small package. It makes an ideal companion for portable computer setups, cramped studios and live shows. In fact any occasion where analogue purity is a must, but it's just not practical to take a full-blown modular cabinet. **FM**

FutureMusic VERDICT



If you didn't think you had the space or the budget to go modular, then the Kraftzwerk is the answer.

