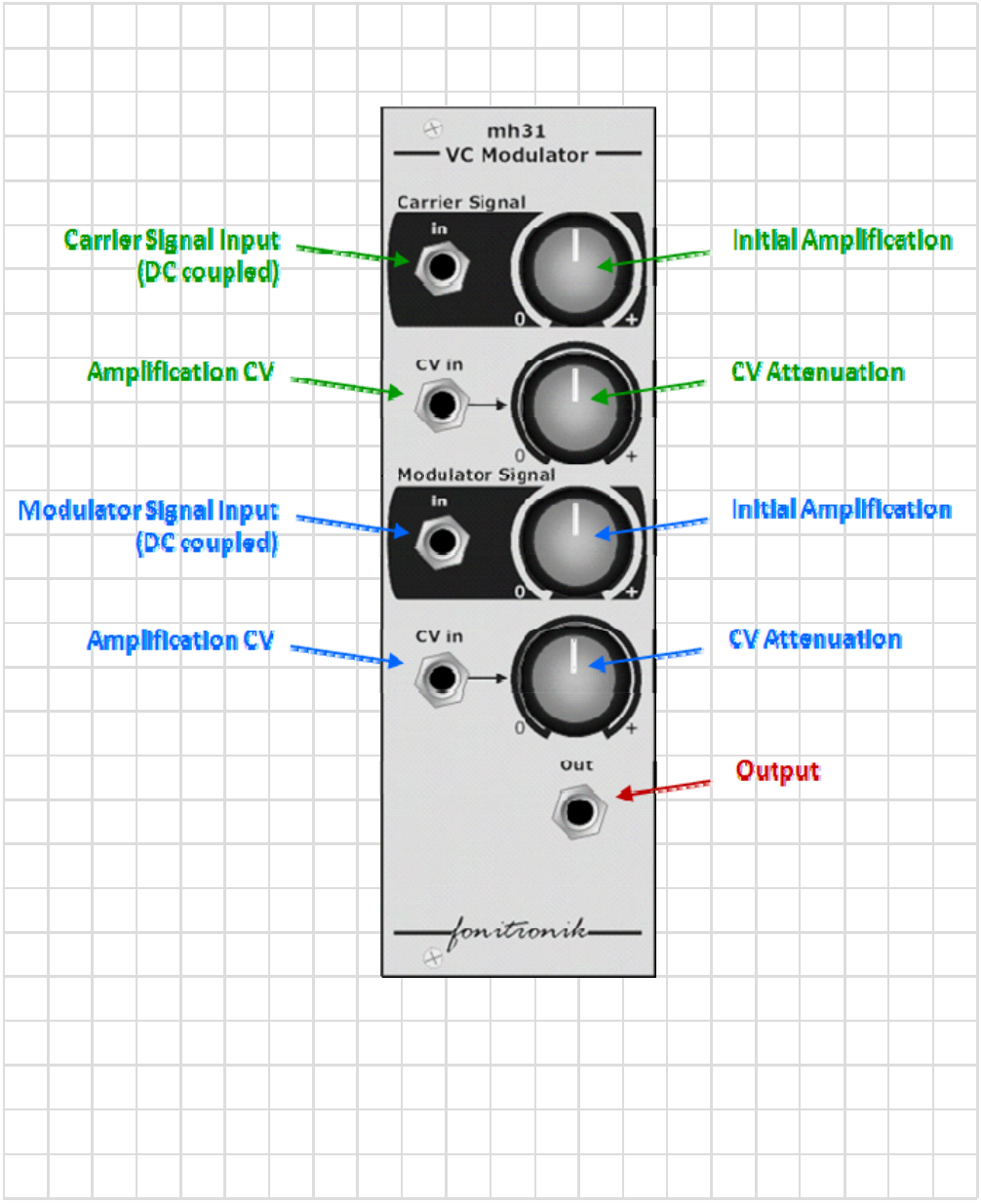
mh31 – VC Modulator V1



What it is:

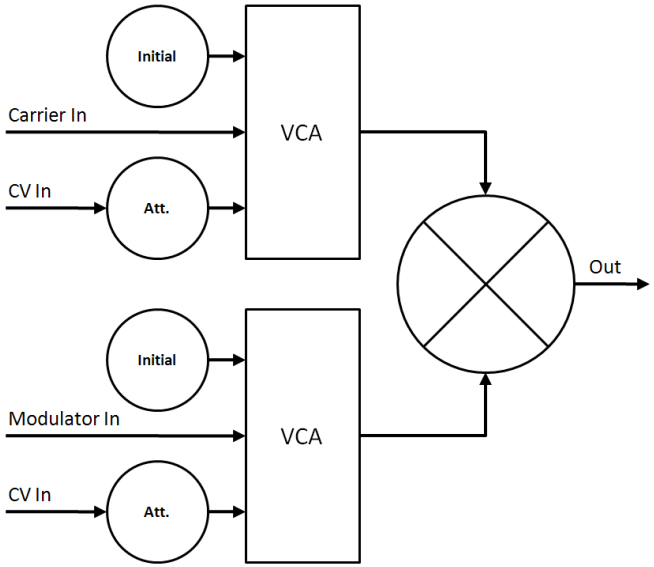
The mh31 – VC Modulator is a Ring Modulator of different cast. Contrary to other common Circuits the mixing of Frequencies is realized by using Operational Amplifiers. The result differs audible, soundwise from other Ring Modulatorsand one must not expect classical functions of a Ring Modulator. Here we come into noisy and dirty terrain. Moreover the module is DC-coupled, so it is usable for control voltages, too..

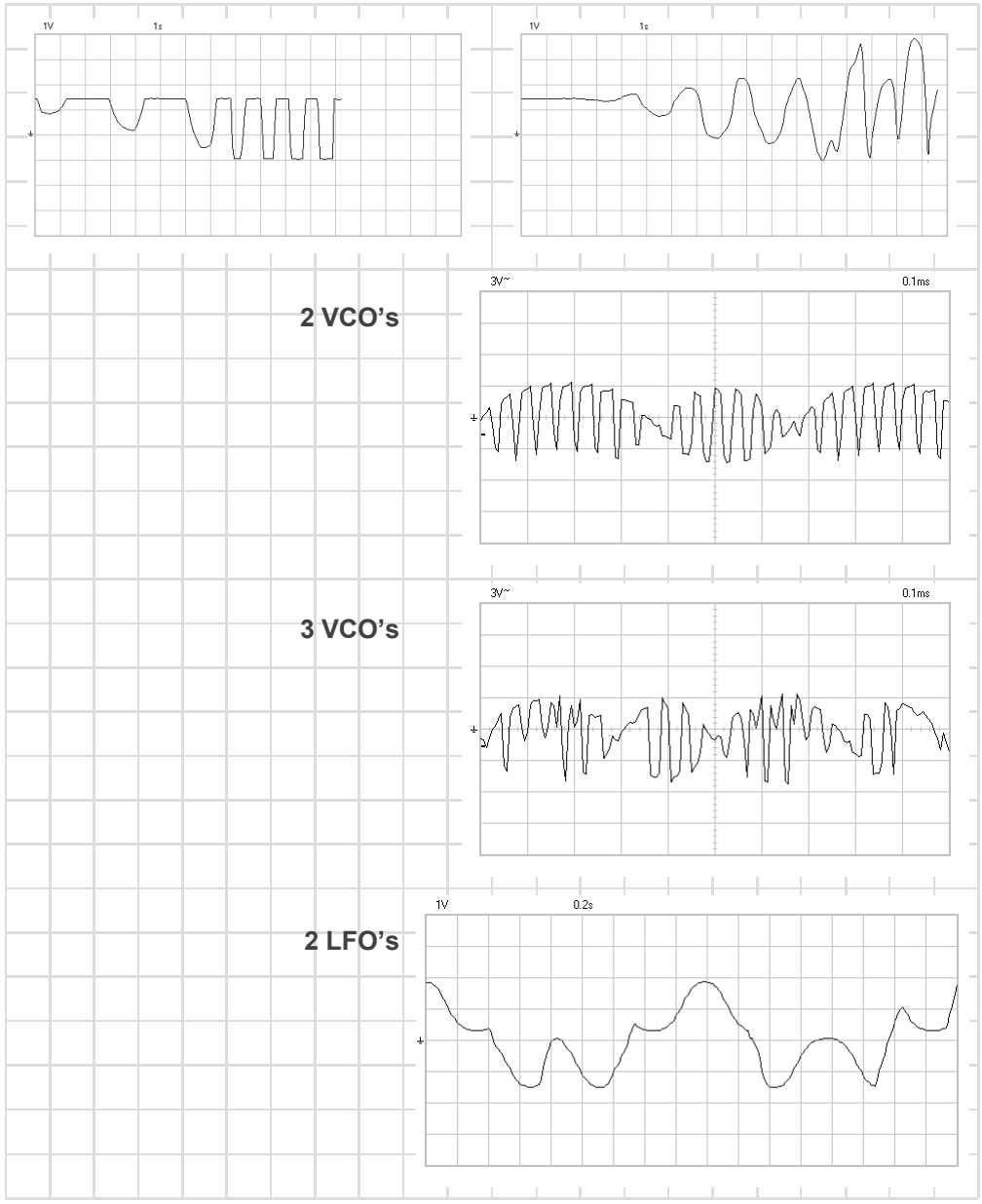
The module offers one VCA for each signal input, including a initial amplification control and a control voltage input with attenuator. Do you drive the CV input with another audio signal you can dial in even a third signal.

The incomin carrier signal switches the sum of both incoming signals (carrier and modulator). The result gets mixed with the kind of rectified carrier signal.

To avoid distortion the amplitude of the modulator signal should be larger than the amplitude of the carrier signals. Double the sum of carrier and modulator should be less than 10V to avoid clipping – if desired. I mean, we are talking a noise maker here!

Blockdiagramm:





Constraints:

This module is a little "noisemaker" for music applications, no precise laboratory apparatus. You have to expect offset voltages at is outputs...

The two pictures to the left (top) show what happens to sine wavesapplied to the carrier resp modulator input, in relationship to VCA setting (close to open). The clipping of the carrier signal and the DC offset is obvious.

Examples of application:

The picure to the left shows the classic Ring Modulator effect. The two frequencies/signals get mixed.

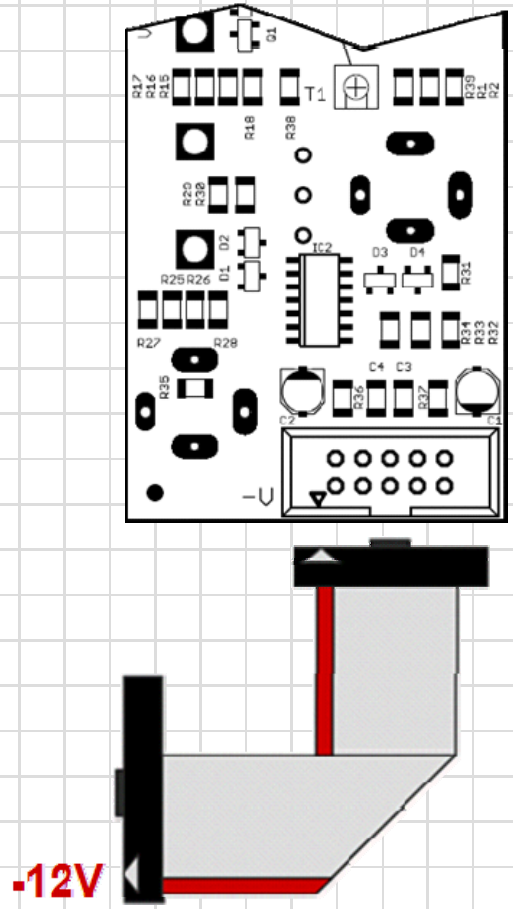
The scope gives just a hint, your ear counts. The module sounds different to other Ring Modulators..

Now we apply an additional audio square wave to the CV input of the first VCA. So we dial in even a third frequency/signal.

Using the VCA's one can create percissve sounds even without additional filter.

The picture to the left shows the graph/course of a control voltage that is created by applying to LFO sine waves.

Since the module is Dc coupled one can create very komplex control voltage curves.



Technical specifications:

3HE, 8TE eurorack format

Depth 1.2in/30mm

Supply voltage -12V/+12V (arbeitet von -5V/+5V bis -15V/+15V)

Current draw 12mA/12mA

Service notes:

Don't touch Trimmer T1 & T2.

These set the offset of the actual VCA's (OTA's) and are set properly when the module gets delivered.

Connect to the Doepfer Buss:

The module comes with a power connector ribbon cable installed. It follows the Doepfer standard (red wire = -12V). The board is additionally labeled with '-V' to indicate the proper polarity of the connector.

Disclaimer:

If the ribbon cable is connected backwards to the power buss, the module will be destroyed. I cannot honor any warrranties in such a case.

So be careful, and triple check the connection you've made.

Thank you for choosing this module. Have fun.

Regards,

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