m303

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Introduction

Thank you for purchasing the M303.

The M303 is a monophonic, analogue synthesizer module.

It is recommended to control the M303 with the CV In, Gate In and Accent In from the Autobot or the Bassline3.

Other CV/Gate-Sequencer will work in the same way, but maybe they have not the exactly timing and groove of the TB-303 sequencer.

The M303 works like the synthesizer-section of the Bassline3, with much more sound variations in your modular system, than known from any other TB-303 modifications. Everything, from abstract filter-sweeps to percussion-sounds is possible.

In comparision to the Bassline3 or the TB-303, the resonance range is extended, that the filter can be played without the VCO.

The M303 circuits of the VCO, VCF, VCA and the envelopes are the same that are used in the original TB-303 bass synthesizer, with a lot of additional features.

The VCO has an additional temperature-compensating circuit, to insure VCO long-time-stability over life-time and changing ambient temperatures.

To get an idea about the possibilities of the sound-generation of the M303, it is best, to take a look on the block-diagram!

M303 BLOCK DIAGRAM

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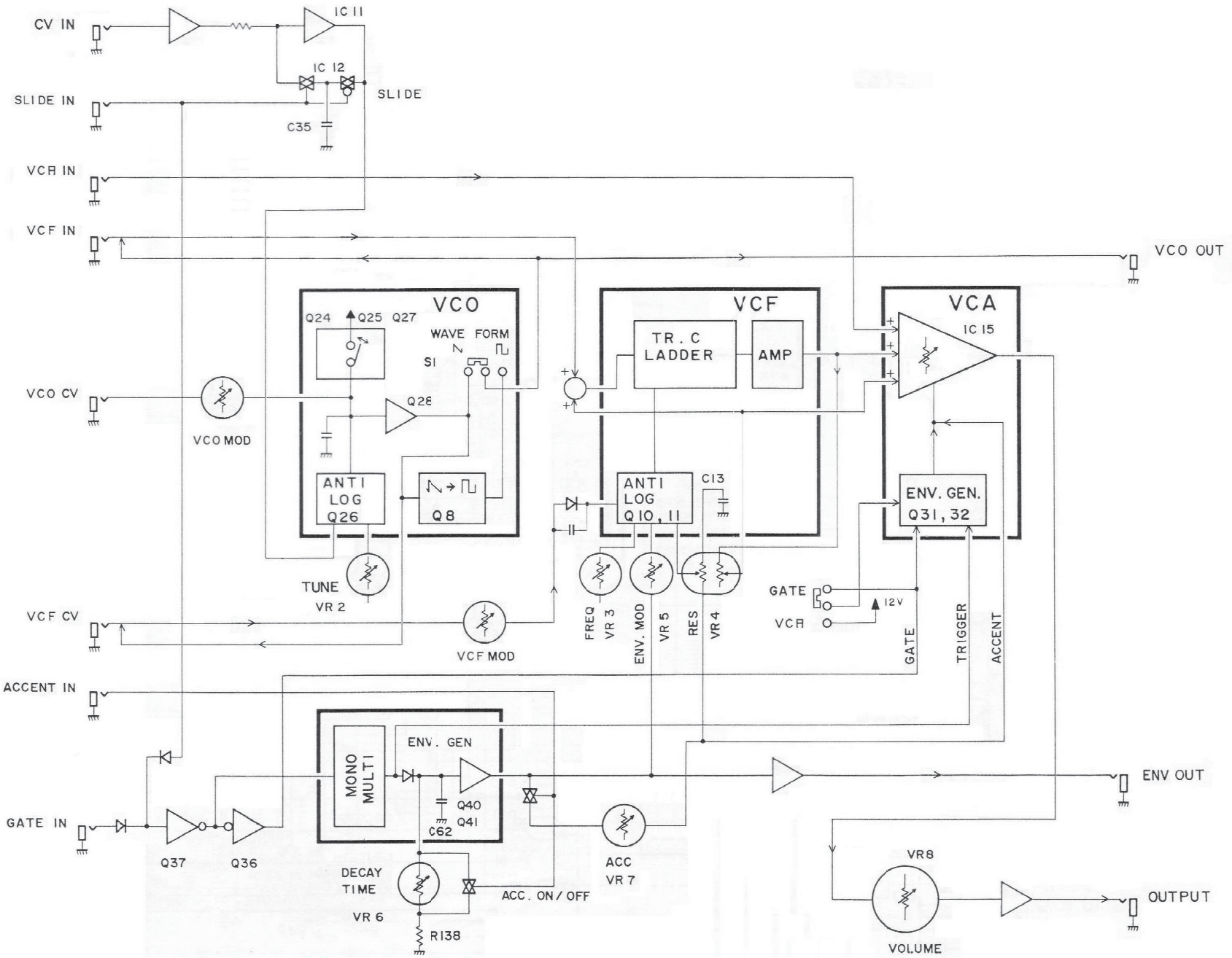

Controls

Tune:

This sets the VCO frequency tuning.

Waveform:

This is to switch the waveform for the VCO output.

Select between SAW and the 303-Square.

VCO Mod:

This sets the amount of the input signal from the VCO CV In.

The input signal modulates (linear) the frequency of the VCO.

VCF Mod:

This sets the amount of the input signal from the VCF CV In.

The input signal modulates the cutoff-frequency of the VCF.

The input will work for low audio signals, too.

Cutoff:

This sets the cutoff-frequency of the filter.

Resonance:

This sets the resonance of the filter and will lower the volume with increase resonance, too.

Env Mod:

This sets the amount of the envelope to the VCF.

Decay:

This sets the decay-time of the VCF envelope.

Gate/VCA:

The Gate/VCA switch changes the VCA envelope.

Select ´Gate´ for the original gated envelope. Select ´VCA´ for the non-gated envelope.

Accent:

Accent controls the amount of the accent envelope to the VCF and VCA.

The Accent In needs a 5-12 Volt signal to control the accent-length and will give an increase in volume, shorten the decay of the filter envelope.

Volume:

This controls the volume of the audio output.

Inputs and Outputs

CV In:

Input for connection to a 1V/octave source (Autobot, Bassline3, sequencer, Midi-to-CV-Interface,…). The CV In converts 1V/octave to the pitch.

Slide In:

Input for a 5-12 Volt gate input signal. The gate will hold the gate and the slide circuit open for the duration of the gate is high. The Slide In works as Gate In too.

VCO CV In:

Input for linear VCO frequency modulation.

VCF In:

Input to the VCF for external audio signals.

The connected input signal will disconnect the VCO output.

Gate In:

Input to trigger the envelope generator and to gate the VCA.

Accent In:

Input for the Accent circuit and needs a 5-12 Volt signal to controll the accent-length.

The Accent In is normally controlled with the Accent Out of a Bassline3 or Autobot.

VCO Out:

Output of the VCO output signal. Saw or 303-Square is selected with the waveform-switch.

VCF CV In:

Input for VCF frequency modulation. If no signal is connected, the internal signal Saw of the VCO is wired to this input.

VCA In:

Input to the VCA for external audio signals.

The connected input signal will be mixed with the VCF output signal.

Env Out:

This is the output of the envelope signal.

Audio Out:

This is the audio output of the M303 modular bass-synthesizer.

About components

The original matched transistor pairs (2SC1583, 2SC2291) and the monolithic VCA BA662A are obsolete and already sold out many years ago. There exist broker shops that still offer these types very expensive, but you cannot be sure that you will get the original parts anymore and you might get worse replacements fitted into the old SIP-housing.

The old matched transistor pairs have carefully been replaced with modern types, with the same characteristics of the original components but with reduced tolerances.

The VCA BA662A has been replaced with a new type of VCA with improved dynamic performance and less noise. The special saturation behavior of the BA662A has been recreated with an additional circuit.

In all the other circuits, the original and rare transistor types are in use, to get the sound as close as possible to the TB-303.

Voltage Supply

The M303 has to be connected with the delivered 2x8 ribbon-cable to the +/-12V-powerbus (e.g. Doepfer).

The secound 2x8 multi-pin-connector on the PCB-board can be used for a flying-bus-wiring.

The lowerpin is connected to the –12V.

It is not necessary to supply the M303 with any +5V.

The maximum supply current is +12V/50mA and –12V/20mA

CV-, Gate-, Accent-Bus

If there is no CV-,Gate- and Accent-source connected on the front of the M303, then the CV-/Gate-, Accent-Bus is connected and the M303 gets the CV/Gate and Accent e.g. from an Autobot that is supplied on the same power-bus.

Warranty

The manufacturer grants a warranty of two years starting from the purchase date on the product, in accordance with the condition described here. If defects are founded within this time, then these will be repaired. Potentiometers, switches and sockets apply with this product are excluded from this regulation. The decision over the warranty claim meets the manufacturer. When determined foreign modifications or mechanical damages any warranty claim expires. Products without warranty authorization are liable to pay the costs repaired. In order to clarify the warranty claim, the manufacturer is to be contacted in each case before sending back. Except the manufacturer, no third is justified to assure or implement guaranteeings. Within the warranty term the warranty is transferable to further buyers. Further requirements because of consequential damages are impossible.

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