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NAMM 2016

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# Vintage Edition of A-100 Modules



Typical modules required to build a vintage analog modular synthesizer will be available from March 2016 in a special **Vintage Edition**. The vintage versions of the modules are equipped with black front panels and white printing. Special vintage knobs with a glossy black body and a metal disc at the top are used.

So far for these modules vintage versions are planned:

- A-110-1 Standard VCO
- A-110-2 Basic VCO
- A-114 Ring Modulator
- A-118 Noise/Random
- A-120 24dB Transistor Ladder Lowpass Filter
- A-132-3 Dual Linear/Exponential VCA
- A-138 Mixer
- A-140 ADSR
- A-147-2 VCDLFO
- A-148 S&H/T&H
- A-180-2 2x4 Multiple
- A-190-3 USB/MIDI-to-CV/Gate Interface



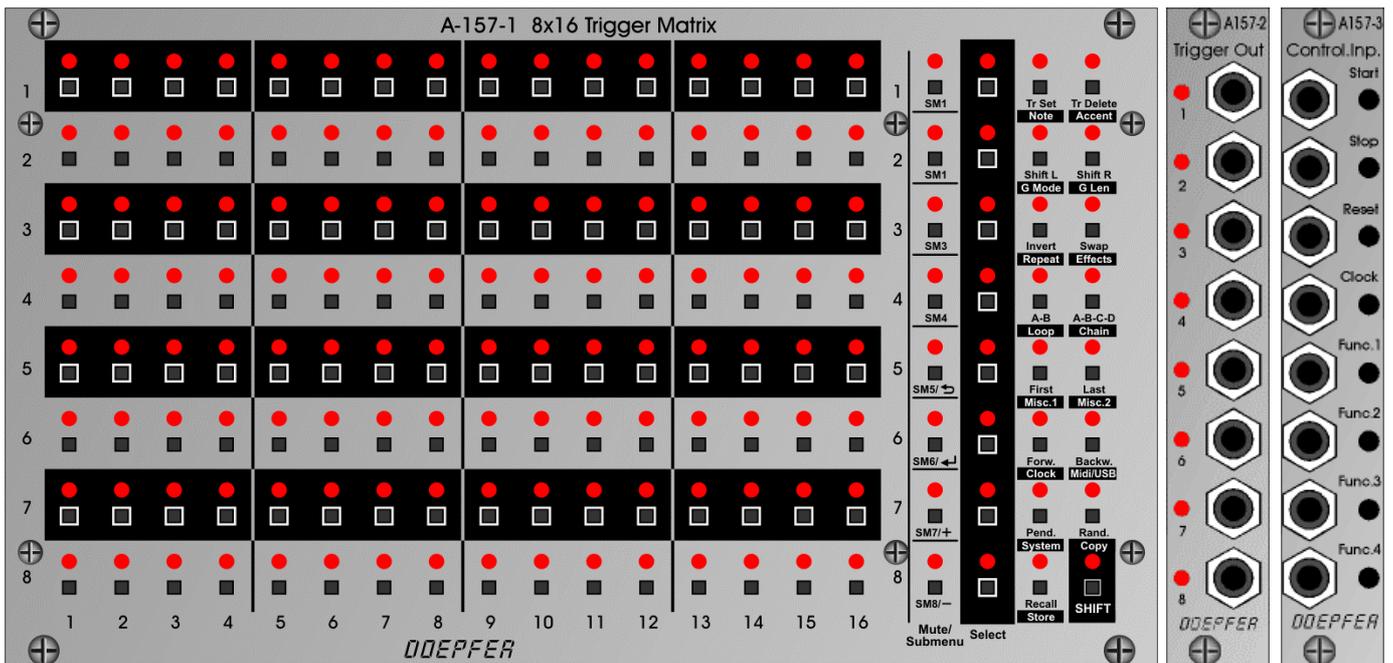
Special Edition  
A-106-5

More modules will be available as vintage editions during the next few months. The sequencer module series will probably be next (A-154, A-155, A-156).

Also another special vintage version of the A-106-5 (cream-colored front panel and black knobs) will be available from March 2016.

We are also considering offering the black panels and vintage style knobs as spare parts. This would allow users to modify their existing modules – provided that their skills are sufficient to disassemble and reassemble the modules.

## A-157 Trigger Sequencer Subsystem



The A-157 trigger sequencer subsystem is now in production. It is made up of three modules:

- A-157-1: matrix module with 160 LEDs and momentary switches arranged as 8 rows with 16 steps each, and the control section on the the hand right side (mute, select, shift, store, recall and so on)
- A-157-2: output module with 8 trigger outputs and 8 LED controls
- A-157-3: input module with manual controls and control inputs for Start, Stop, Reset, Clock and 4 free assignable functions

The matrix module A-157-1 is the core of the system and is used to set or reset each of the 8x16 steps by means of the momentary switch for each step (similar to the well-known 808 operation, but with 8 rows visible at the same time). At the right hand side additional functions are available, like mute (turning a complete row on/off), select (selecting one or more rows for subsequent operations), function switches for selected row(s) like shift row left, shift row right, swap row, invert row, first/last step of the row, direction of the row (forward, backward, pendulum, random), pattern mode (A/AB/ABCD), store/recall of presets, clock source and so on.

The A-157-2 output module is connected via a ribbon cable to the A-157-1 and can be placed to the right of the A-157-1, or even one row above/below if desired. The same is valid for the A-157-3 input module. The input module A-157-3 is the interface to the clock/start/stop/reset signals of the A-100 system to synchronize the A-157 to other modules like an analog sequencer (A-155/A-154) or MIDI/USB via a suitable interface. In addition it has four free assignable function inputs available that can be assigned to certain functions (e.g. shift left via external trigger signal).

The module has an internal USB connector that is used to update the firmware to the latest version. A breakout module with MIDI in/out and USB is in the planning stage. This would mean that it would no longer be necessary to remove the module for a firmware update.

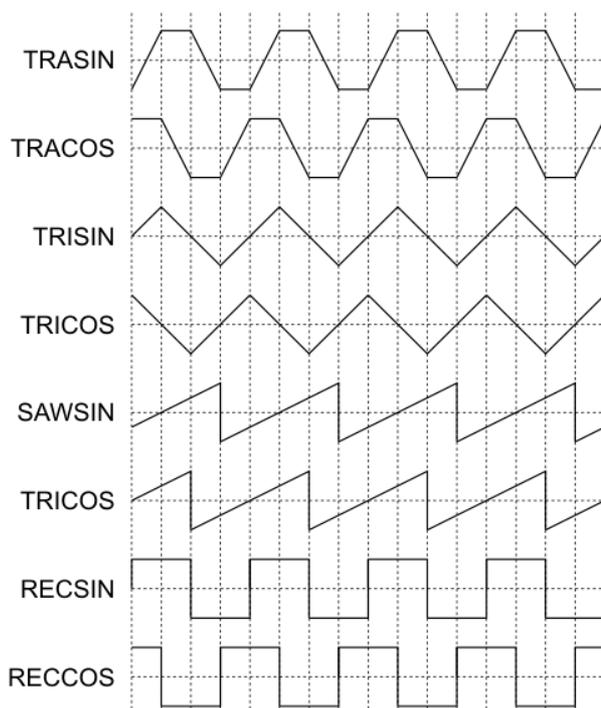
Date of Delivery: February 2016

Price: ~ US\$ 600.00 (Euro 500.00)



The red custom version of the front panel is a design study made with a self-adhesive foil printed by a color laser printer.

### A-110-6 Waveforms



### A-110-6 Trapezoid Thru Zero Quadrature VCO

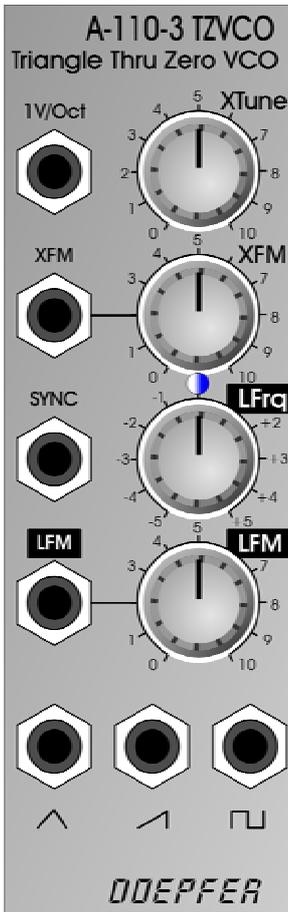
A-110-6 is a new VCO with **Trapezoid** as its standard waveform. In addition to this unique waveform it also offers **linear thru zero frequency modulation** and **quadrature outputs** (i.e. two trapezoids with 90 degrees phase shift). The two basic waveforms are called Trapezoid Sine (TRASIN) and Trapezoid Cosine (TRACOS). The other standard waveforms (triangle, saw, rectangle) can be derived very easily from the quadrature trapezoids and are also available as quadrature signals. We are not yet sure if the final version of the module will have all waveforms available or if we will offer a breakout module which makes all 10 waveforms available (trapezoid, triangle, sine, saw, rectangle - all as quadrature pairs).

The module has two control sections: linear and exponential. The exponential section consists of the XTune control, the 1V/Oct input and the XFM input with corresponding XFM attenuator.

The linear section consists of the LFrq control and the LFM input with the corresponding attenuator LFM.

A dual color LED is used to display the polarity of the linear control voltage (red = positive, yellow = negative). The pitch of all outputs is determined by the control voltages of both sections. The linear section is used to control the pitch in a linear manner. When the LFrq control is fully CW the module works like a normal VCO and the LED lights blue. The pitch is then controlled by the exponential section with the manual Tune control XTune and the exponential frequency control inputs 1V/Oct and XFM. 1V/Oct is used to control the pitch by a 1V/Oct CV source. XFM is used to apply an exponential frequency modulation with adjustable depth. As the LFrq control is turned counter-clockwise starting from the fully CW position, the frequency is lowered in a linear manner until the TRASIN/TRACOS waves (nearly) stop at the center position of LFrq (provided that no LFM signal is present). As the LFrq control is moved from the center towards the CCW position the waves start again but in the reverse direction and the LED turns white. When the fully CCW position of LFrq is reached the module works like a normal VCO again. But much more exciting is the use of the LFM input to modify the linear control voltage by an external control voltage (typically another VCO). Linear modulation by another oscillator using the thru zero feature in combination with the trapezoid waveforms generates audio spectra than cannot be obtained from any other oscillator!

Date of Delivery: Spring 2016  
Price: ~ US\$ 165.00 (Euro 150.00)

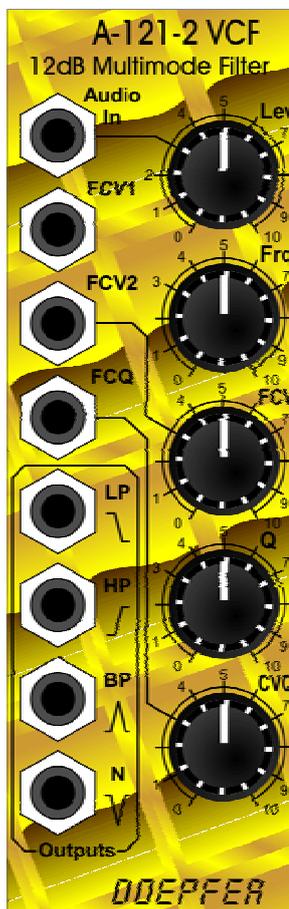
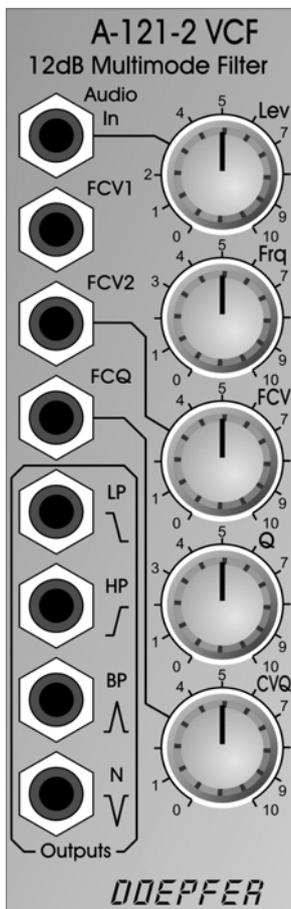


The custom versions of the front panels on the right are design studies made with a self-adhesive foil printed by a color laser printer.

### A-110-3 Triangle Thru Zero VCO

A-110-3 is a Thru Zero VCO with a triangle core. The module has two control sections: linear and exponential. Each section has a manual control (XTune, LFrq) and a CV input with attenuator (XFM, LFM) available. The exponential section features an additional 1V/Oct input. A dual color LED is used to display the polarity of the linear control voltage. The pitch of the outputs is determined by the control voltages of both sections. When the LFrq control is fully CW the module works like a normal VCO and the pitch is controlled by the exponential section, with XTune and the exponential frequency control inputs. As the LFrq control is turned counter-clockwise, the frequency is lowered in a linear manner until the triangle wave (nearly) stops at the center position of LFrq. As the LFrq control is moved from the center towards the CCW position the wave starts again but in the reverse direction and the LED changes it's color. When the fully CCW position of LFrq is reached the module works like a normal VCO again. But much more exciting is the use of the LFM input to modify the linear control voltage by an external control voltage (e.g another VCO). Waveshapers are used to generate the additional waveforms saw and rectangle.

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Price: ~ US\$ 165.00 (Euro 150.00)

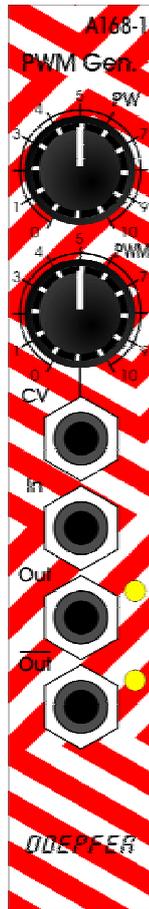
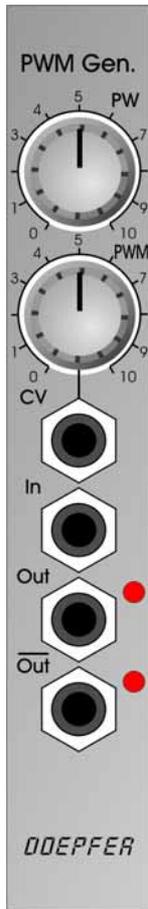


### A-121-2 12dB Multimode Filter

A-121-2 is a voltage-controlled multi-mode filter module with a cut-off slope of -12 dB/octave. Four simultaneous outputs are available, each with different characteristics: low-pass, band-pass, high-pass and notch (or band reject). The cut-off frequency determines the point at which the respective filter effects appear. The frequency can be adjusted manually or by voltage control (filter modulation, for instance, by an LFO or ADSR). Two CV inputs are available, whose control voltages are summed. Resonance (Emphasis or Q) can be adjusted manually or by voltage control, right up to self-oscillation, in which case it will behave like a sine wave oscillator.

A-121-2 is the successor to the obsolete A-121 module, but with totally different circuitry (the A-121 used the obsolete CEM3320 filter circuit). The sound of the new module A-121-2 is identical to the filter of the Dark Energy II, but has been expanded by the voltage controlled resonance feature.

Date of Delivery: March 2016  
Price: ~ US\$ 135.00 (Euro 120.00)



The custom versions of the front panels on the right side are design studies made with a self-adhesive foil printed by a color laser printer.

### A-168-1 Voltage Controlled PWM Generator

A-168-1 is a pulse width modulation (PWM) generator module. It derives a rectangle signal with adjustable pulse width from an external triangle, sawtooth or sine signal. The external signal can be an LFO, VCO or any other signal with falling/rising slopes (e.g. ADSR or a random voltage). In addition the pulse width can be modulated by a CV signal. The typical application of this module is the generation of a rectangle signal with PWM from VCOs or LFOs which do not yet have this feature.

The module is equipped with these controls and in/outputs:

- Manual pulse width control (PW)
- PWM CV Input with attenuator (PWM)
- Signal input (In)
- Output with LED control (Out)
- Inverted output with LED control (/Out)
- Internal trimming potentiometers for PW and PWM range. These are usually adjusted for a symmetrical 50:50 rectangle in the neutral state and full PWM range (0-100%) for the applied CV.

Date of Delivery: February 2016

Price: ~ US\$ 60.00 (Euro 50.00)



### A-184-1 Ring Modulator / S&H / T&H / Slew Limiter

A-184-1 is the combination of 3 functions which are actually already available in other modules (e.g. A-114, A-148, A-170). In many systems it's not necessary to have two ring modulators (A-114) or two S&H units (A-148) or two slew limiters (A-170) available. That's why we have compiled these function in one small 4 HP module.

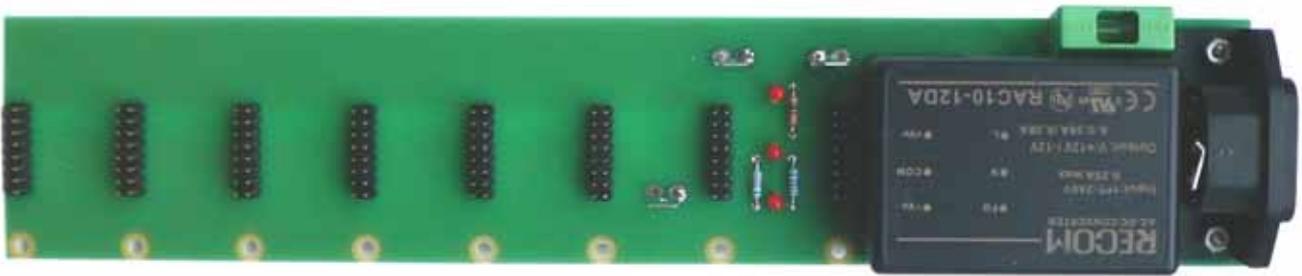
The upper section is nothing but half of an A-114, i.e. a ring modulator with the usual X/Y inputs and the X\*Y output.

The lower section is a Sample & Hold (S&H) / Track & Hold (T&H) unit followed by a slew limiter. An internal jumper is used to set the mode to S&H or T&H. In S&H mode the unit picks out a sample from the voltage at the SH input at the rising edge of the trigger signal input. In T&H mode the output follows the input voltage as long as the level of the trigger signal is high. As soon as the trigger signal turns low, the last voltage is stored. The trigger input is internally normalled to high, i.e. the unit works as a slew limiter in T&H mode when no trigger signal is applied.

Date of Delivery: Spring 2016

Price: ~ US\$ 90.00 (Euro 80.00)

### A-100SSB Small Supply/Bus



A-100SSB is an economically priced small power supply combined with a small bus board with 8 module power connectors. The device is directly connected to mains voltage (100-240V / 50-60 Hz), i.e. no 'wall wart' is required. At the bottom of the board a metal plate covers all parts carry mains voltages. The maximum output current is 380 mA for each voltage (+12V and -12V). In addition +5V is available. The A-100SSB can be used for small systems with up to 8 modules and a maximum current of 380 mA. It can also be used for the DIY construction of small cases.

Date of Delivery: March 2016

Price: ~ US\$ 80.00 (Euro 70.00)

### A-100PSU3



A-100PSU3 is a new power supply that has been installed in most A-100 cases since January 2016. Compared to the former A-100PSU2 it has a higher current output (2A) for +12V and additionally +5V with 4A is available. It's equipped with a wide range mains voltage input (100-240V / 50-60 Hz).

Consequently it's no longer necessary to modify the power supply or to use a mains voltage converter when travelling between countries with different mains voltages.

An existing A-100 power supply can be easily replaced with this new one as the A-100PSU3 has nearly the same dimensions and the mounting bolts are at the same positions. Nevertheless the replacement or installation has to be carried out only by qualified personnel because the correct wiring of the mains connection is essential. It's also essential that all parts that conduct mains voltage (cables, pc board, electronic parts on the pc board) are mechanically protected against any contact with the human body (touch-proof, e.g. by using a cover for the power supply which is also available as a spare part).

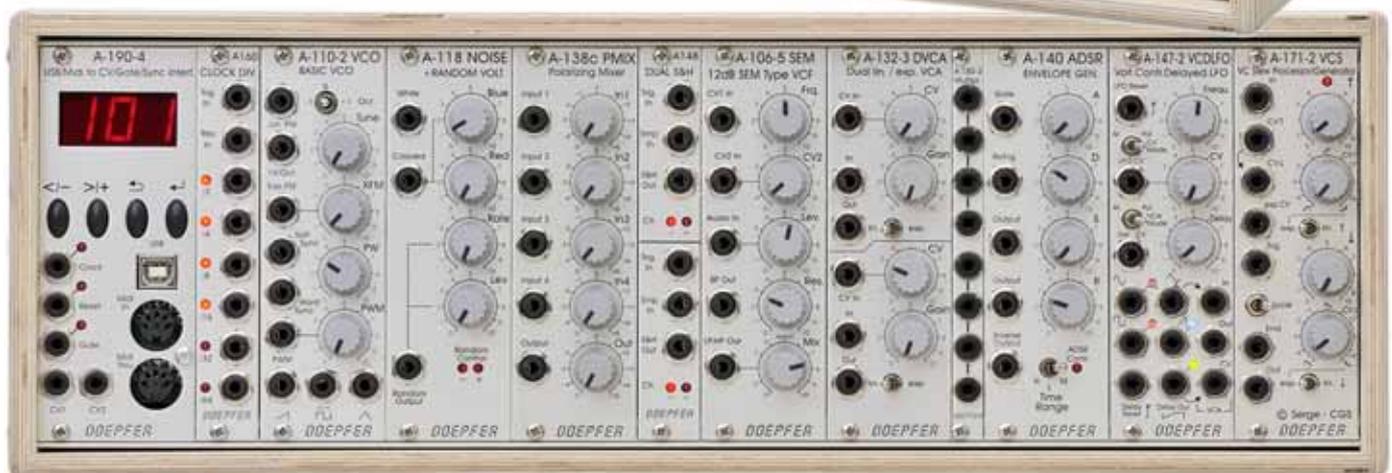
The bus boards have not been changed as they have always had the additional +5V connection. If the +5V is required an additional wire has to be installed between A-100PSU3 and the bus board in question.

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Doepfer Musikelektronik GmbH  
Geigerstr. 13  
D-82166 Graefelfing / Germany  
Phone: +49 89 89809510  
Fax: +49 089 89809511

Website: [www.doepfer.com](http://www.doepfer.com)