
SYNTH-WERK™
THE SPIRIT OF TRUMANSBURG


MASTER GAIN
OUTPUTS
IN 4
WIDTH OF
PULSE WAVEFORM
CONTROL INPUTS
FREQUENCY VERNIER
SAWTOOTH
SINE
PULSE
TRIANGULAR
SYNTH-WERK
902
VOLTAGE CONTROLLED
AMPLIFIER
CONTROL MODE
LIN
EXP
FIXED
CONTROL VOLTAGE
911
ENVELOPE GENERATOR
903-A
RANDOM SIGNAL
CONTROLLED LOW PASS FILTER
FIXED CONTROL VOLTAGE

SYNTH-WERK is the result of a passion for synthesizer, electronic music, and the fascination for Dr. Bob Moog who laid the foundation for music synthesizer technology along with others about fifty years ago. That fascination that a Moog modular system exerted likewise on musicians and audience is still alive today almost 50 years later. For those who search for the new sound, from back then to today, a modular system is the gateway to complex and unique sounds.

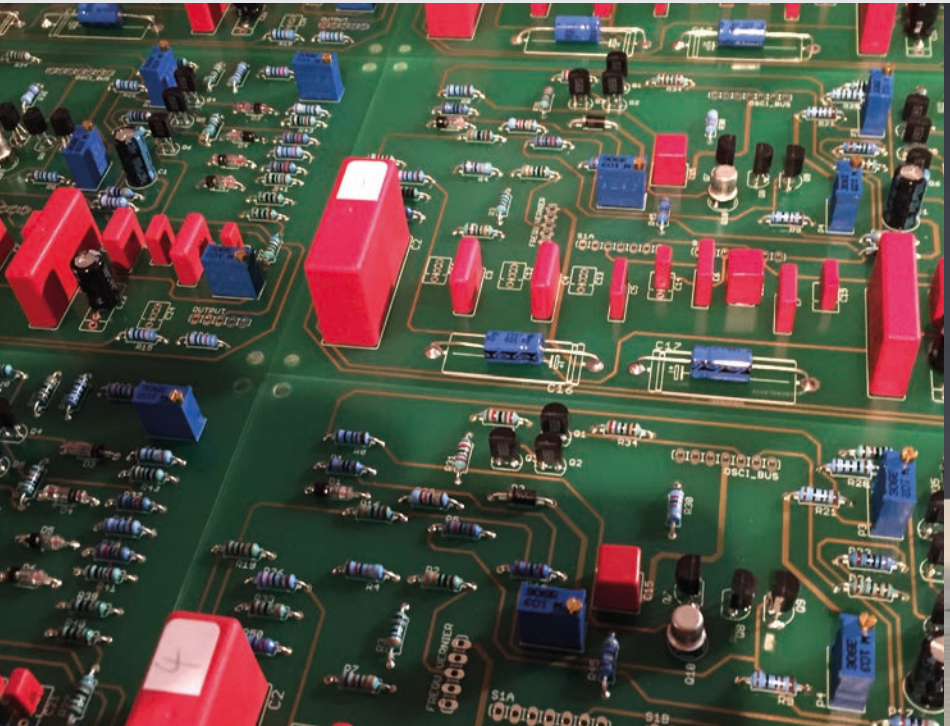
SYNTH-WERK modules are based on original and unchanged designs out of the 60s, utilizing the same hand assembly methods used in the Moog Music factory in Trumansburg, NY in the 60s. The modules are built just as the originals were, by hand-stuffing and hand-soldering components to circuit boards, and using traditional wiring methods. We are using only high precision and selected components combined with vintage NOS components.

The faceplates are etched as the original Moog® modules. All modules follow the moog format (5U industry standard) and come with the standard „.com“ connector for easy integration in existing systems. The modules work with supply voltages of +15/-15 Volt. All modules can be modified to work on the moog standard of +12V and -6V, e.g. to be used in a Moog system and on the internal power supply.

All modules are handcrafted with passion in Munich, Germany.

MODULES

Each module has its own power regulation to +12/-6 Volt, except for the SW901AB oscillator bank.
The power regulation for the SW901AB is done on the 901A which supplies the 901B`s.



SW901 OSCILLATOR

FUNCTION DESCRIPTION

The SW901 Voltage-Controlled Oscillator is a wide-range generator of repetitive waveforms, the frequency of which is controlled by the sum of applied control voltages. The total frequency span of the oscillator is 0,1 to 15.000 Hz in six overlapping ranges. Four waveform outputs are available: sawtooth, triangular, sine and pulse. The width of the pulse waveform is continuously variable, by means of a front panel potentiometer, from complete symmetry to 8.1 asymmetry. One fixed and one variable output are available for each waveform.

TECHNICAL SPECIFICATION

Number of control inputs:	3
Impedance:	100k ohm
Characteristic:	1V/Octave
Waveforms:	Sinewave / Sawtooth / Pulse / Triangular available simultaneously
Impedance of fixed outputs:	600 ohm
Level of outputs:	0,5 V RMS
Impedance of vari. outputs:	1500 ohm
Level of vari. outputs:	0 - 0,5 V RMS
Power Requirements:	+/-15 Volt at + 65 mA / - 55 mA

SW901AB OSCILLATOR BANK

FUNCTION / DESCRIPTION

The SW901A Oscillator Controller and the SW901B Oscillator are, respectively, the controlling and the oscillating / wave-shaping sections of the SW901 Voltage Controlled Oscillator. The separation of the functions of the SW901 into two modular instruments allow the assembly of a bank of oscillators, all of which are controllable from one controller. The SW901A panel contains the control voltage input jacks and potentiometer which vary the frequencies of all the controlled oscillators simultaneously. The SW901B panel contains frequency range controls and fixed level output jacks for each waveform. One controller may control up to 7 Oscillators. A bank of oscillators in which the intervals between the frequencies remain constant as the frequencies themselves are varied obviously has great musical value.

TECHNICAL SPECIFICATION

SW901A

Number of control inputs:	3
Impedance:	100k ohm
Characteristic:	1V/Octave

SW901B

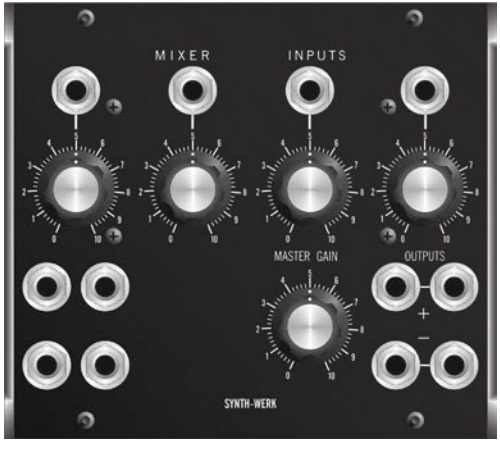
Number of outputs:	4 Sinewave / Sawtooth / Pulse / Triangular
Impedance of outputs:	600 ohm
Level of outputs:	0,5 V RMS
Power Requirements:	".com" connector on SW 901A +/-15 Volt at + 120 mA / - 90 mA All connected SW 901B´s are supplied from SW 901A

SWCP3 MIXER & SWCP3H MIXER

FUNCTION DESCRIPTION

The **SWCP3 module** is a 4 x 1 mixer with positive and negative outputs and a maximum gain of 2. This mixer can combine both AC and/or DC voltages.

The **SWCP3H half size module** has has the same function like the SWCP3 plus a multiple in addition.



MUSICAL APPLICATION

The four channel mixer is useful for combining several signals to form a single output. Audio signals from up to four different sources can be varied in relative volume before processing the mix through filters or amplifiers for a final result. Control voltages can be mixed, attenuated and phase inverted before being introduced into a voltage controlled module. In addition, the CP3 mixer can be used for phase cancellation of complex sounds, e.g. if two or more signals with similar frequency content are combined at opposite phase relationships and for feedback where the output of the mixer is sent directly back to an input of the CP3 mixer.

TECHNICAL SPECIFICATION

Input Impedance:	25k ohm
Output Impedance:	600 ohm
Gain:	x2 maximum
S/N Ratios:	> 60 dB
Outputs:	positive and negative outputs
Power Requirements:	“.com” connector +/-15 Volt at +/- 30 mA

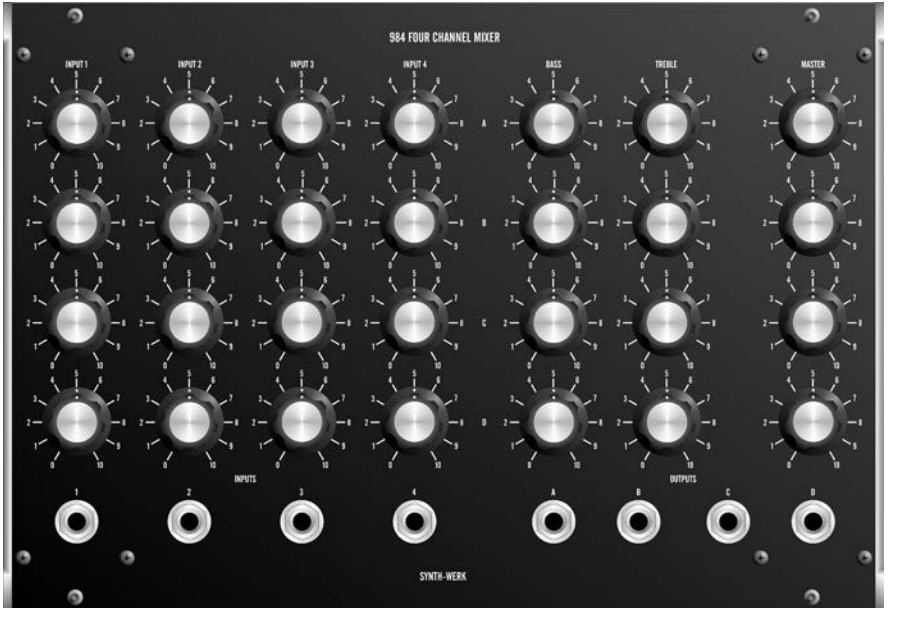
SW984 FOUR CHANNEL MATRIX MIXER

FUNCTION DESCRIPTION

The SW984 Four Channel Matrix Mixer is an AC coupled 4-input, 4-output matrix with bass and treble tone controls for each output channel. Each input has a separate attenuator for each of the four output channels. Thus, a matrix of 16 input attenuators provides maximum channel separation, or variable combinations of volume balance. Tone controls for each of the output channels can attenuate or emphasize bass or treble signals. Flat signal response is achieved with the control settings kept at “5” on the potentiometers. These are 2-pole active tone controls.

MUSICAL APPLICATION

The SW984 Mixer serves as a final audio summing device for up to four different inputs. Outputs can feed any line level monitor or recording system. Optimum impedance match is 10k ohm or less. The multiple inputs and outputs of this module serve as good mixing point for external sound processors which will modify or add echo to the synthesizer signal before entering the recording or monitoring system.



TECHNICAL SPECIFICATION

Input Impedance:	25k ohm
Output Impedance:	5k ohm
Gain:	approx. x 1,25
S/N Ratios:	> 65 dB
Inputs:	Four input potentiometer per channel, AC coupled
Outputs:	4, AC coupled
Power Requirements:	“.com” connector +/-15 Volt at +/- 75 mA

SW904A VOLTAGE CONTROLLED LOW PASS FILTER

FUNCTION DESCRIPTION

SW904A Voltage-Controlled Low Pass Filter attenuates frequencies above the fixed control voltage cutoff point at a rate of 24 dB per octave. The cutoff frequency is voltage controlled through the control input jacks. The sum of the applied control voltages doubles the frequency of the cutoff point for each one Volt increase. The regeneration potentiometer varies the amount of internal feedback, creating a resonant peak at the cutoff frequency. This resonant peak will break into oscillation at clockwise settings of the regeneration potentiometer, creating a voltage controlled sine wave generator. The fixed control voltage potentiometer covers a 12 Volt (octave) range. The overall range of the FCV potentiometer is determined by the Frequency Range switch, which moves the frequency cutoff range in twooctave steps.

MUSICAL APPLICATION

The Voltage Controlled Low Pass Filter is one of the building blocks of analog synthesis. The characteristic upper spectral sweep found in wind instruments articulation is simulated utilizing this filter and the DC voltage supplied by an Envelope Generator with each trigger from a controller. Virtually, every instrumental simulation can use this filter arrangement as part of its overall patch. The lowpass filter is a key module in creating widely varying timbres via subtractive synthesis.

TECHNICAL SPECIFICATION

Cutoff Frequency fc range:	<= 1Hz to <= 80 kHz
Signal Input Impedance:	9.2 k ohm
Signal Input Level:	0 dBm nominal, +10dBm max without clipping
Attenuation slope above Fc:	24 dB per octave
Control Input Frequency Response:	DC to 50 kHz
Control Input Impedance:	100k ohm
Number of control inputs:	3
Output Impedance:	680 ohms (AC coupled)
Power Requirements:	+/-15 Volt at + 75 mA / - 40 mA

SW904B VOLTAGE CONTROLLED HIGH PASS FILTER

FUNCTION DESCRIPTION

The SW904B Voltage Controlled High Pass Filter attenuates input signal frequencies below its nominal cutoff setting. The attenuation below FCV cutoff setting is 24 db/oct. As the fundament is generally the loudest frequency component of a complex tone, deletion of the lowest frequency range can radically alter the timbre. The FCV cutoff point is raised or lowered in octave per volt control inputs. The Frequency Range switch sets the overall range of frequencies covered by the Fixed Control Voltage potentiometer. The Low range encompasses 4 Hz to 20 kHz, while the High range shifts 1,5 octaves up to 10 Hz through 50 kHz.

MUSICAL APPLICATION

The Voltage Controlled High Pass Filter is most useful for altering the timbre of input signals by deleting the predominance of the fundament partial in a complex tone. Voltage control of this module often creates a spectral sweep radically different from those associated with acoustic instruments. A thin or “tinny” sound often results when using this filter. Low frequency control voltages (10 – 20 Hz) can, if their gain is boosted from the nominal fixed level output of the 901 Oscillator, effect in a rattling or “scraping” sound (almost regardless of input signal).
Connected to the Low Pass Filter in parallel, series, the High Pass Filter helps form band pass and band reject filters.

TECHNICAL SPECIFICATION

Cutoff Frequency fc range:	1Hz to 50 kHz
Signal Input Impedance:	33k ohm
Signal Input Level:	0 dBm nominal, +10dBm max without clipping
Signal gain:	0 dB nominal
Cutoff slope:	24 dB per octave
Control Input Frequency Response:	DC to 16 kHz
Control Input Impedance:	100k ohm
Number of control inputs:	3
Output Impedance:	680 ohm (AC coupled)
Power Requirements:	+/-15 Volt at + 75 mA / - 50 mA

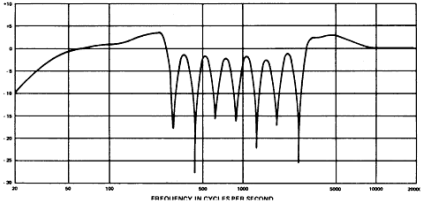
SW907A FIXED FILTER BANK

FUNCTION DESCRIPTION

The SW907A Fixed Filter Bank is a non-voltage controlled modifier, which emphasizes or reduces the gain of the center frequency bands indicated on each of the eight center potentiometers, in addition to the cutoff points set by low pass and high pass filters at either frequency extreme. A total of 10 overlapping LC networks are included.

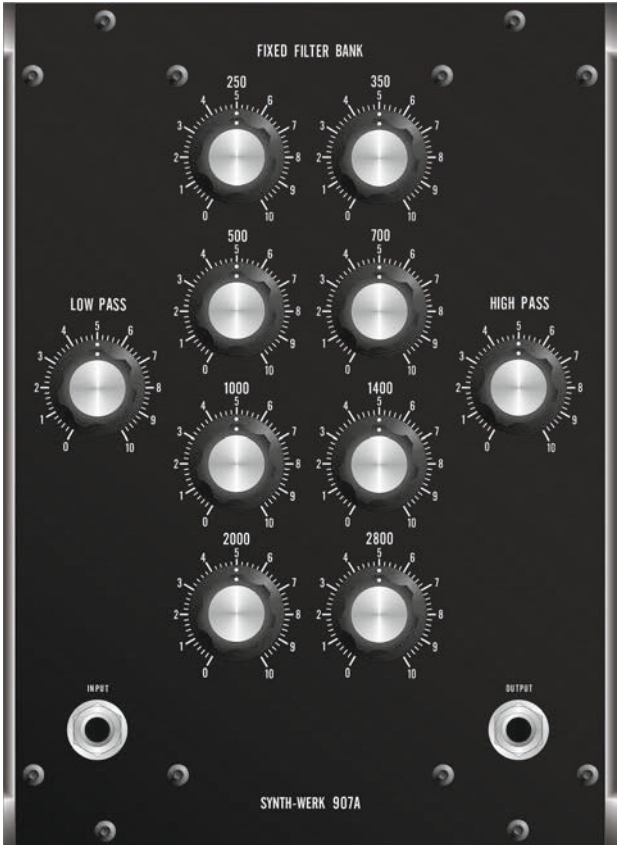
MUSICAL APPLICATION

The Fixed Filter Bank is often referred to as formant filter because it can be set to emphasize or attenuate midrange frequencies, which fall within a particular band, no matter how the frequencies of the signal are moved. Like many acoustic instruments, a characteristic set of formants, are always a part of the resultant output (given a particular complex waveform). Emphasized bands of this sort are particularly evident with double reed instruments. Thus, this filter is part of the patch for these simulations. In addition, completely different timbres can be set up for different ranges of the same tone, if the output of the filter is recombined with unfiltered frequencies at different levels.



TECHNICAL SPECIFICATION

Signal Input impedance:	10k ohm
Signal Output impedance:	680 ohm
Signal Gain:	unity
Output Noise:	< 65 dB
Power Requirements:	+/-15 Volt at + 20 mA / - 10 mA



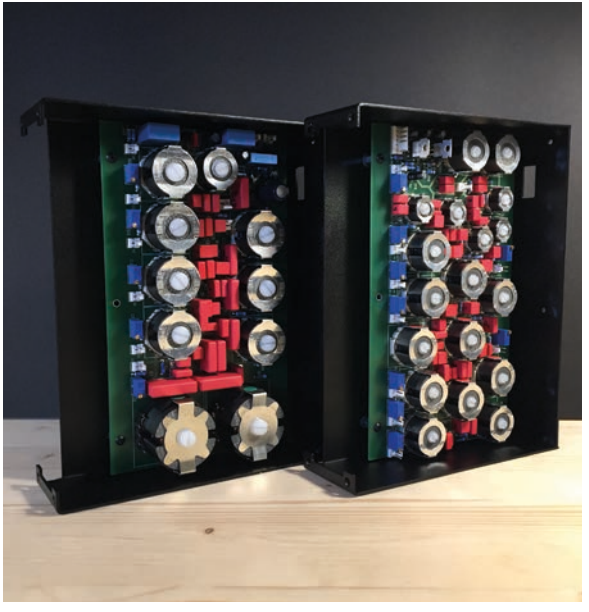
SW914 FIXED FILTER BANK

FUNCTION DESCRIPTION

Similar in function to the Moog 907 Fixed Filter Bank, the SW914 Extended Range Fixed Filter Bank is a non-voltage controlled modifier with 14 separate passband controls: high-pass, low-pass, and 12 center frequency knobs. Each passband range has an attenuation slope of 12 dB per octave above or below the center frequency indicated.

MUSICAL APPLICATION

This Extended Range Filter Bank is highly useful for emphasizing or attenuating frequency bands in the mid-range of hearing. Instrument simulation, especially double reeds, is a major application for this module due to their varied resonances in mid-range frequency bands. Varying frequency response in each of the half/octave ranges, even slightly, will change the timbre of a tone as it is moved from one region to the next. Radically different timbres can be overlapped from one frequency range to another, by utilizing the 914 as a fixed cut-off filter. In one range, a particular timbre may predominate when mixed with another. When the signal is moved into a cut-off range, the non-filtered frequencies of the mix will assume maximum importance.



SW914 FIXED FILTER BANK

The steep passband attenuation of each pot creates the characteristic peaks and troughs of this formant filter.

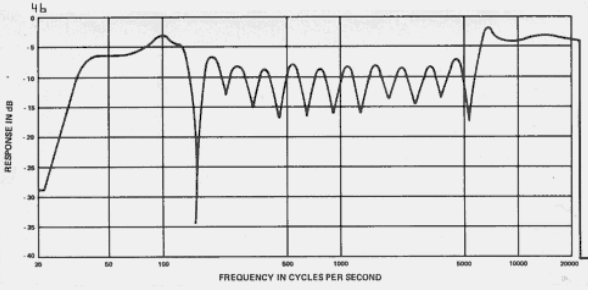
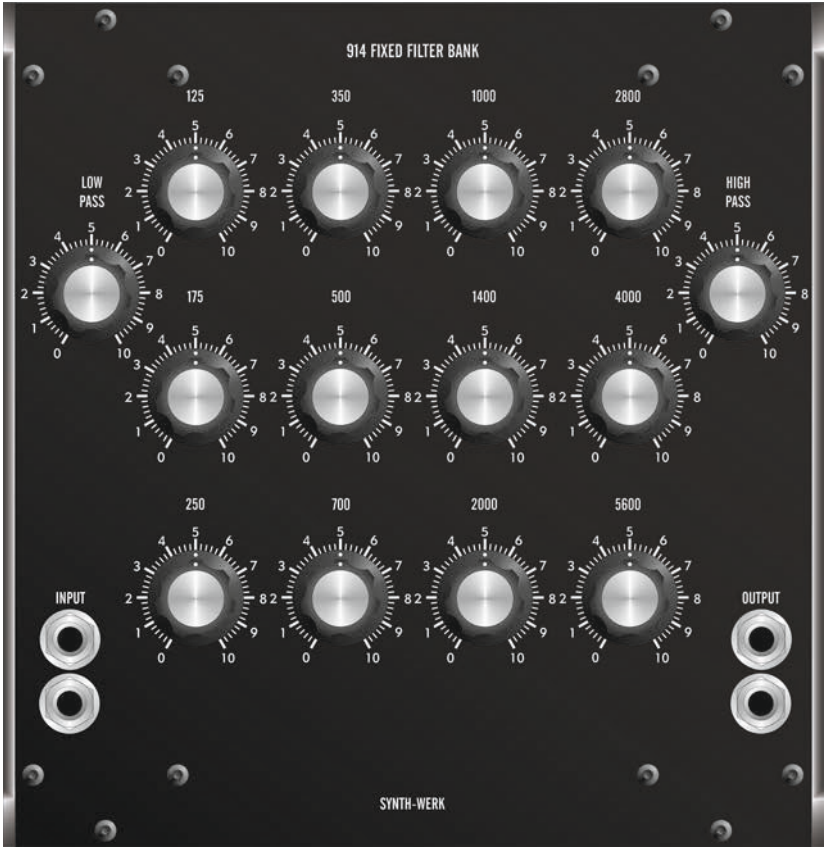


FIGURE 6 - 914 FILTER ALL POTS OPEN



TECHNICAL SPECIFICATION

Signal Input impedance:	50k ohm
Signal Output impedance:	1k ohm
Signal Gain:	unity
Output Noise:	< 65 dB
Power Requirements:	+/-15 Volt at + 20 mA / - 10 mA

SW902 VOLTAGE-CONTROLLED AMPLIFIER

FUNCTION DESCRIPTION

The SW902 Voltage-Controlled Amplifier is a differential input and output circuit which gives an overall voltage gain of 2 (6 dB) when manual control potentiometer is at maximum, or when a control voltage of 6 Volts is applied to the control input. Two modes of gain are available: Linear and exponential.

MUSICAL APPLICATION

The SW902 Voltage-Controlled Amplifier is used in any circumstances where variable gain is desired for gating or modulating AC or DC voltage sources. Articulation of a tone or sound, utilizing oscillators, controllers, envelope generators and the VCA is the basic traditional patch around which most performance oriented synthesizers are based. In addition to DC control voltage, the VCA can be controlled by varying voltages (AC) from sources like the SW 901 Oscillator. Slowly varying control voltages (2-9 Hz) can create tremolo or echo like effects upon an audio signal. Audio control frequencies create sidebands with often clangorous effects, usefull for a variety of audio timbres and percussive sounds. The inverting outputs of the VCA can be useful for spatial modulation, signal inverting of control voltages, controlling two oscillators in contrary motion with a single control signal and various amplitude sampling arrangements.

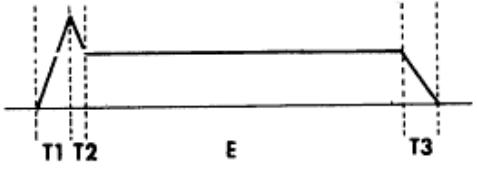
TECHNICAL SPECIFICATION

Signal Input Frequency Response:	DC to 50 kHz
Signal Input Impedance:	10k ohm nominal
Control Input Frequency Response:	DC to 50 kHz
Control Input Impedance:	100k ohm nominal
Number of control inputs:	3
Output Impedance:	680 ohm
Power Requirements:	+/-15 Volt at + 75 mA / - 40 mA

SW911 ENVELOPE GENERATOR

FUNCTION DESCRIPTION

At the introduction of a V-trigger signal from an external source, the SW911 Envelope Generator produces a single voltage contour whose time/voltage variation is determined by potentiometers T1, T2, T3, and a time constant sustaining level potentiometer (Esus). The release of the V-Trigger signal will direct the voltage contour to T3 (final decay) regardless of what stage (T1, T2 or E) was in current operation.



TECHNICAL SPECIFICATION

Trigger Input:	V-Trigger (internally converted to S-Trigger)
Time Range on T1, T2, T3:	2 msec to 10 sec
Peak DC output on Esus:	5,5 Volt
Power Requirements:	+/-15 Volt at + 25 mA / - 20 mA

MUSICAL APPLICATION

The SW911 Envelope Generator completes one of the most important musical functions: That of producing a variable one-shot control voltage contour in time. This output is thus capable of controlling any voltage controlled module – most notably a Voltage Controlled Amplifier – resulting in the articulation of a single sound. Keyboard controllers initiate a trigger on every key, which is depressed in sequence specifically to fire the envelope generator. Ribbon Controllers, Sequencial Controller Complements and Envelope Followers, all output V-trigger which initiate the action of this module as well. Characteristic spectral sweeps associated with the articulation of a note by an acoustic instrument are simulated by utilizing the Envelope Generator to control the frequency cutoff of the SW 904A Low Pass Filter, SW 904B High Pass Filter or other associated modules. With considerable attenuation, the Envelope Generator can create tunable glissandi when controlling a single oscillator. Envelope Generators are used in association with the SW 911A Dual Trigger Delay to create multiple or combined DC voltage contour outputs.

SW911A DUAL TRIGGER DELAY

FUNCTION DESCRIPTION

The SW911A Dual Trigger Delay is designed to be used with 2 or more SW911 Envelope Generators. It provides one or two time delays on an input trigger voltage – bound for the activation of an envelope V-trigger. Delay stops immediately upon termination of input trigger.

Three different modes of operation are available via coupling mode switch:

OFF: Delays are activated independently through individual trigger inputs

PARALLEL: Trigger input on top SW 911A activates timing circuit on both simultaneously.

SERIES: Trigger input on top 911A activates top timing circuit, then triggers second timing circuit upon delay time of first.

TECHNICAL SPECIFICATION

Trigger Input:	V-trigger (internally converted to S-trigger)
Trigger Output:	V-trigger (internally converted from S-trigger)
Delay periodes:	2 msec to 10 sec
Power Requirements:	+/-15 Volt at + 25 mA / - 20 mA

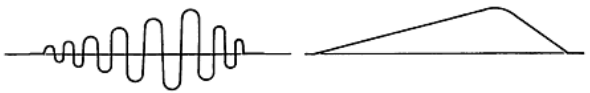
MUSICAL APPLICATION

Standard synthesizer envelopes provide anywhere from two to four DC voltage settings over a triggering period. In practice, acoustically generated sounds have many variations of amplitude or filtration within a given articulation or generation. The use of a SW911A to couple envelopes together creates a much more complex series of voltage variations for the synthesist to use for the articulation of each sound.

SW912 ENVELOPE FOLLOWER

FUNCTION DESCRIPTION

The SW912 Envelope Follower produces two functions, which can be used separately or in conjunction. The follower circuit signal input presents a control voltage output (DC) proportional to the average amplitude of the AC input signal. The second function, a Schmitt trigger, generates a V-trigger above a threshold voltage (comparator), when a slowly varying or DC voltage is introduced at the control input jack. The normalling of the control output of the follower circuit to the control input of the Schmitt trigger circuit allows both control voltage and trigger to be generated from a single variable source.



AC/AUDIO SIGNAL INPUT — D.C. CONTROL VOLTAGE OUTPUT.

TECHNICAL SPECIFICATION

Nominal Input impedance:	100k ohm
Nominal Output impedance:	69k ohm
Control Input impedance:	61k ohm
Control Output:	Connected to control input internally
Power Requirements:	+/-15 Volt at + 40 mA / - 35 mA

MUSICAL APPLICATION

The SW912 Envelope Follower is an extremely useful module for interfacing external sources with the many functions of the synthesizer, which require both control voltages and triggers to function. Filter or amplitude variations can be achieved by routing the audio signal to both the processing modules and the Envelope Follower. The control voltage of the follower circuit can raise or lower the cutoff frequency of a voltage controlled filter. At the same time, the Envelope Generator can be triggered by the V-trigger output of the follower, causing a VCA to gate the original signal above a certain amplitude. This latter operation can be very useful as a noise gate, closing down an audio signal when the level drops below a nominal setting. One further use involves generating random triggers from the Envelope Follower by utilizing white noise or pink noise as a signal input and carefully setting the threshold level to achieve a speed of trigger selection.

SW6401M BODE RINGMODULATOR

FUNCTION DESCRIPTION

A ringmodulator is an analog sound modification system that takes two inputs, one a program-signal and the other a carrier frequency, being and produces a single output. The program signal is normally a waveform produced by the output from a microphone (voice) or any other source of signal, while the carrier signal is normally a sine wave. The function of the ring modulator is to produce the sum and difference frequencies of the program signal and carrier signal. The SW 6401M is based on the original design of Harald Bode from 1967. The design is a circuit involving a ring of diodes and transformers forming a four quadrant multiplier. To accomplish a one unit module, the transformers UTC-A20 have been replaced by smaller vintage UTC SO 15P transformers. The diodes are original NOS 1N485A.

MUSICAL APPLICATION

It was probably electronic music pioneer Karlheinz Stockhausen's use of the ringmodulator that inspired an entire generation of rock musicians. Stockhausen's Mixture (1964), for example, was written for a ring modulated symphony orchestra. Ringmodulation is often used to simulate the sounds of tuned percussion instruments that produce inharmonic frequency spectra, such as bells and chimes. It can also produce timbres that are difficult to achieve by any other method of synthesis. Among all signal processors, the multiplier-type ring modulator takes a unique position since it is capable of converting existing sounds into new sounds with entirely different overtone spectra that do not resemble the original acoustical phenomena.

TECHNICAL SPECIFICATION

Input Impedance program input:	47k ohm
Input Impedance carrier input:	47k ohm
Output Impedance:	680 ohm
Nominal Input Voltage:	1V RMS (higher levels will lead to distortion which can be an additional interesting effect)
Gain:	approx. 0
Frequency range:	0,15 kHz to 20 kHz
Power Requirements:	".com" connector +15 Volt at + 90 mA

HARALD BODE

Harald Bode was born in 1909 in Hamburg, Germany. At the age of 18 he lost his parents and started studying, and graduated from the University of Hamburg in 1934. In 1935, he began his pioneering work in the field of electronic musical instruments, and with funding support provided by Christian Warnke, his earliest work was completed in 1937. Warbo Formant Organ, an archetype of today's polyphonic synthesizer, was a four voice key-assignment keyboard with two formant filters and dynamic envelope controller. Eventually it went into commercial production by a factory in Germany, and it became one of the earliest polyphonic synthesizer products, along with Novachord by Hammond. In 1959-1960, Bode developed modular synthesizer and sound processors, and in 1961, he wrote a paper exploring the advantages of newly emerging transistor technology over older vacuum tube devices; also he served as AES session chairman on music and electronic for the fall conventions in 1962 and 1964; after then, his ideas were adopted by Robert Moog, Donald Buchla and others. After retiring from the chief engineer of Bell Aerospace in 1974, he composed TV-advertising spots and gave live concerts. Also in 1977, Harald was invited as a chief engineer of the Norlin/Moog Music after Robert Moog left. He died in New York, NY, United States 1987.

NEW! FROM THE R. A. MOOG CO. EXCLUSIVE

Signal generating and processing equipment

MODEL 6401

The Bode Ring Modulator, a four quadrant multiplier, features unusually high carrier suppression and notably low unwanted sidebands.

MODEL 6552

The Bode Klangumwandler, a single sideband frequency shifter, is capable of shifting all frequencies of a signal from 40 Hz to 10 kHz, up or down, with effective suppression of the unwanted sideband.

The Bode Ring Modulators and Klangumwandlers (Tone Converters) are widely recognized by electronic music composers and engineers for their superior performance and unique versatility. These instruments can easily process any audio signal, recorded or live, in a precisely controlled and predictable manner. With the Bode instruments now commercially available for the first time, both ring modulation and frequency shifting assume a new practical importance in the special-effects repertory of any audio engineer or musician. Designed by Harald Bode and manufactured by the R. A. Moog Co., these instruments are completely compatible with professional audio equipment.

First to introduce a complete line of modular instruments for audio signal generation and processing, the R. A. Moog Co. now offers three standard, integrated systems. Designed for electronic music studio composition and concert performance, the Synthesizers are capable of a complete range of periodic, transient, and random signal generation, and offer comprehensive filtering, modulation, reverberation, timing, and mixing functions. Their simple, versatile operation and conservatively-rated solid-state circuitry make the Moog Synthesizers uniquely appropriate for use wherever flexible, accurate signal generation and processing is required.

The Moog Synthesizers: integrated standard consoles for electronic music composition and performance

MODEL 10 The Synthesizer I

The new Moog Catalog contains detailed information and specifications for these and other products.

Address your request to Dept. S.

R. A. MOOG COMPANY
Trumansburg, N. Y. 14886

Bode 6401 Ring Modulator 1967 as part of the Moog Music product range.

SW903A RANDOM SIGNAL GENERATOR

FUNCTION DESCRIPTION

The Random Signal Generator produces continuous bursts of random frequencies and waveshape from approximately 25 Hz to 20 kHz. Two types of energy distribution are provided: White noise and pink noise. The former distributes amplitude evenly throughout the indicated audio spectrum. The latter reduces the amplitude of each frequency increment proportionally to produce equal energy per octave. Pink noise, thus, sounds “lower” in pitch to the ear.

TECHNICAL SPECIFICATION

Average level white noise:	-10 dBm (30 Hz – 20 kHz)
Average level pink noise:	-4 dBm (30 Hz – 20 kHz)
Power Requirements:	+/-15 Volt at + 35 mA / - 30 mA

MUSICAL APPLICATION

Almost all acoustically generated sounds one hears, at all times, contain some amount of random noise. Most obvious are wind, surf and thunder. Some amount of unpitched sound is evident in just about every environment. Acoustic instruments produce varying amount of unpitched sound along with specific notes. Drums, Tam-Tam, blocks, gongs and various other percussion instruments are all unpitched instruments. White and pink noise provides the synthesist with a basic source for simulating these instruments, as well as a source for recreating “environments”.
As an audio source, the Random Signal Generator is most often used in connection with filters to create a desired frequency band or correct spectral sweeps. The Random Signal Generator also provides a source of control voltage for filters, oscillators, amplifiers and other voltage controlled modules, producing interesting random modifications.
As a source for the Envelope Follower, random triggers can be produced as well as slowly varying DC voltage contours (with slow response time). Noise is also useful as a control source for sample and hold circuits and random sequencer triggers.

SW994 MULTIPLES / SW995 ATTENUATORS

FUNCTION DESCRIPTION SW994

The dual multiple panel consists of two sets of four jacks. Each set of jacks has been wired together. The multiple is a “device” which permits multiple distribution of one signal to several different places. This process is often called signal splitting. Multiples are used for many purposes; from linking two patch cords together, sending a single signal to several different modules at the same time.

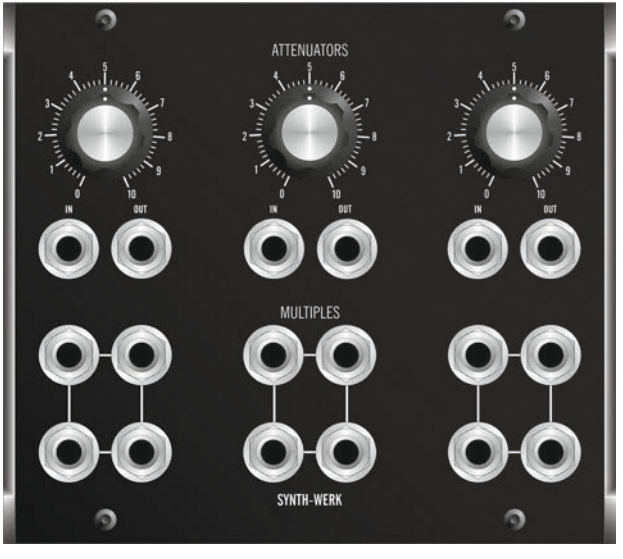
FUNCTION DESCRIPTION SW995

The SW995 Attenuators panel consists of three „passive circuits“, each made of a 25k potentiometer between input and output. The signal input to the top attenuator is chained to the bottom two in series. Introduction of a patch cord into middle or bottom input breaks the normalling system. Attenuators reduce the gain or amplitude of any applied input signal, control or audio. Moving clockwise from zero gain to unity gain with input, these attenuators can be used for reducing the effect of a control upon a voltage controlled module, providing up to three variable outputs from a single source input or reducing the gain of an entire signal complex.

SWCP MULTIPLES & ATTENUATORS

FUNCTION DESCRIPTION / APPLICATION

The multiple part consists of three sets of four jacks. Each set of jacks has been wired together. The multiple is a “device” which permits multiple distribution of one signal to several different places. This process is often called signal splitting. Multiples are used for many purposes; from linking two patch cords together, sending a single signal to several different modules at the same time.
The Attenuator part consists of three „passive circuits“, each made of a 25k potentiometer between input and output. The signal input to the left hand attenuator is chained to the right hand two in series. Introduction of a patch cord into middle or right hand input breaks the normalling system.
Attenuators reduce the gain or amplitude of any applied input signal, control or audio. Moving clockwise from zero gain to unity gain with input, these attenuators can be used for reducing the effect of a control upon a voltage controlled module, providing up to three variable outputs from a single source input or reducing the gain of an entire signal complex.



SW905 REVERBERATION UNIT

FUNCTION DESCRIPTION / APPLICATION

The SW905 Reverberation Unit utilizes a dual spring-type acoustic delay line to produce a succession of decaying echoes of an audio signal. A single panel control determines the ratio between the amounts of reverberated and non-reverberated signals that appear at the output jack.

MUSICAL APPLICATION

When a dynamically varying signal is applied to the input of the SW905, the output will consist of a series of closely spaced echoes, the subjective effect of which is similar to that of reverberation of sound. When a static signal is applied to the input of the SW905, the output will also be static. The SW905 will perform in this application like a formant filter, strongly coloring the timbre of any signal with appreciable harmonic content.

TECHNICAL SPECIFICATION

Power Requirements: +/-15 Volt at + 20 mA / - 20 mA

CUSTOM & STANDARD SYSTEMS

SYNTH-WERK constructs custom systems according to your individual requirements. For that purpose, we utilize modules from Moon Modular and SYNTH-WERK modules. All configurations can of course be changed according to your specific needs. You can also use all Moon Modular modules for your specific system and modify our standard systems.
Handmade cases of walnut wood come naturally. Each device is one of a kind, handmade with highest quality. Ask us for an individual proposal.

TSOTM0.8

The spirit of Trumansburg M0.8
includes one SW901 Oscillator.

1x SW901
1x SW904A
1x SW902
2x SW911

Everything is installed in a 8U portable tolex case.
The TSOPM0.8 is powered from its dedicated
power supply.

SW901 SW904A SW902 SW911 SW911

TSOTM1

The spirit of Trumansburg M1 is a classical analog modular synthesizer setup which includes the following modules:

1x SW901AB
1x SWCP3
1x SW904A
1x SW902
2x SW911

Everything is installed in a hand-made 10U wooden case and powered from its dedicated power supply.

SW901A SW901B SW901B SW901B SWCP3 SW904A SW902 SW911 SW911

TSOTM1 MIDI

The spirit of Trumansburg M1MIDI includes a MIDI/CV Interface from Moon Modular and a SW901AB two Oscillator Bank.

1x Moon Modular 551 MIDI/CV Interface
1x SW901AB (two Oscillators)
1x SWCP3
1x SW904A
1x SW902
2x SW911

Everything is installed in a hand-made 10U wooden case including internal routing of CV and Trigger signals.
The TSOPM1 MIDI is powered from its dedicated power supply.

MM551 | SW901A | SW901B | SW901B | SWCP3 | SW904A | SW902 | SW911 | SW911

TSOTM2 MIDI

The spirit of Trumansburg M2MIDI includes a MIDI/CV Interface from Moon Modular and two SW901AB Oscillator Banks. Everything is installed in a handmade two row 10U wooden case. The TSOTM2 is powered from its dedicated power supply.

1x Moon Modular 551 MIDI/CV Interface
2x SW901AB
2x SWCP3
1x SW904A
2x SW902
1x SW903A
1x SW995
2x SW911
1x SW911A

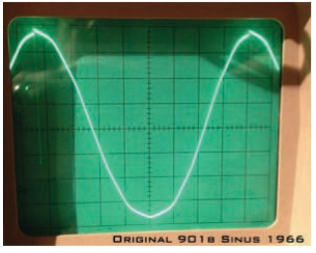
MOON MODULAR SEQUENCER

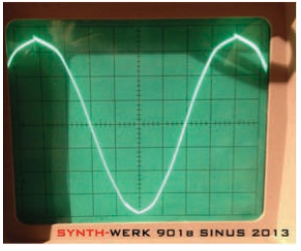
Example of a Moon Modular Sequencer configuration in a M2 case

RESTAURATION OF OLD MOOG SYSTEMS

Original Moog Modules are very rare and expensive these days. Especially the 901A Oscillator controller and 901B oscillator. If you have a single 901A and 901B in your system and you wish to extend it to an oscillator bank... No problem! We can replace the missing modules by SYNTH-WERK modules and either retune the whole oscillator bank to fullfill the original specifications when it has left the Trumansburg factory many years ago, or we can adjust the SYNTH-WERK modules to the aged waveforms of the Moog 901B oscillators (see picture).

All SYNTH-WERK modules can be modified to run on +12V and -6V. SW911 and SW911A can be modified to run on S-Trigger, including Chinch-Jones connector.





CASES

You can choose between either a 8U mobile Tolex case or a 10U wooden case. The wooden case is a handsome blend of birch wood and walnut.
We can also deliver every customer specific size of cases.

„When you connect with an instrument, no matter of what sort, there is an interaction that's outside of what's actually going through your fingers. I hesitate to use the word 'spiritual', but I'm absolutely sure that there is a consciousness that we connect with."

Bob Moog

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