

moogTM Synthesizer 15

- A Complete Studio Synthesizer in a Portable Package
- New, State-of-the-Art 921 Series Oscillators
- Increased Control Capabilities for Greater Versatility
- Two-Voice Generation and Processing Capabilities
- 100% Professional Quality Construction — Reliable and Durable



The MOOG Synthesizer 15 is:

the most compact of all Moog modular systems, yet it provides all the basic synthesizer functions. The Synthesizer 15 is constructed to the same uncompromising standards of all Moog professional systems. Its modular construction provides separate instruments for each sound generating and processing function. Modular flexibility is ideal for teaching electronic sound production. This design's simplicity and reliability is equally valuable to the performer—the controls are conveniently located and accurately calibrated for rapid changes. A complete studio synthesizer, the Synthesizer 15 can be expanded, without obsolescence, as your future needs require.

The Synthesizer 15 contains:

the most modern and versatile signal generating instruments available, featuring the new 921 series voltage controlled oscillators. These instruments are the product of continuing research and development, and establish new standards



—a 921A Oscillator Driver with two 921B Voltage Controlled Oscillators, and a separate 921 Voltage Controlled Oscillator. The Synthesizer 15 features the new 923 Random Noise/Filter module, providing



in frequency range, stability, and precision tracking. The 921 series oscillators incorporate many new and exciting features, such as: Phase-Lock Frequency Synchronization, for "beat-free" intervals within the audio range; Rectangular Waveform Width Modulation for timbral effects not otherwise possible; and Waveform Clamping, which permits the musician to control when and where a control effect starts. The Synthesizer 15 has three such oscillators

—a 921A Oscillator Driver with two 921B Voltage Controlled Oscillators, and a separate 921 Voltage Controlled Oscillator. The Synthesizer 15 features the new 923 Random Noise/Filter module, providing "white" and "pink" noise sources and two wide range filters on a single, compact panel.

Signal processing modules include: a bank of fixed frequency, half octave filters (907A); a wide range, voltage controlled lowpass-resonant filter (904A); two voltage controlled amplifiers (902); and an attenuator panel (995). The fixed filter bank permits flexible and precise tailoring of formants, to simulate traditional instrumental tim-

bres, or to create interesting new sounds. Voltage control of the 904A Lowpass Filter permits many musically interesting dynamic changes in a sound, such as "wah-wah" effects, string harmonic sweeps, etc. The 902 voltage controlled amplifier shapes the loudness of a sound, or the strength of a control signal, in response to any of the system's voltages. The new 995 Attenuator panel provides manual control of any signal's strength, and incorporates an ingenious priority system that permits up to three different output levels simultaneously for a single input.

Control signals can be obtained from two Envelope Generators (911), the dual output Keyboard (952), and any of the other signal generating modules. The Envelope Generator produces a voltage contour for controlling the loudness of a sound (used with a 902), or the timbre of a sound (used with a 904A). Articulations with attack and decay times as short as two milliseconds or as long as ten seconds can be produced—initiated by a trigger from the 952 Keyboard, or a wide variety of accessories. The keyboard can control two pitches independently, the pitch and timbre of a sound, or any two voltage control functions simultaneously. The 921 Oscillator is particularly suitable for control purposes; it provides an extra-low frequency range for producing waveforms as slow as one cycle every 100 seconds.

The cabinet contains a 910 power supply, which has reserve capacity to power additional cabinets of 900 series modules. It also includes a 4-input mixer with "+" and "-" outputs, a reversible attenuator (variable from "+1X" to "-1X"), jack multiples, connections for two manual controllers, and a power switch. Fuse receptacles are found on the rear panel, which also provides convenient interconnections for all standard Moog accessories and other studio equipment.





The Synthesizer 15 can:

perform, with precision and reliability, a vast number of musical tasks for a system of such compact size. It provides five sound sources (three oscillators, a random noise source, and the 904A filter in an oscillatory mode), two amplifiers, two envelope generators, four filters with extremely varied capabilities, and a two-voice keyboard. It can accept a wide variety of standard accessories, such as the 1150 Ribbon Controller, or a Sequencer Complement. The Synthesizer 15 is completely compatible with standard professional audio equipment; it will process acoustic and electronic instruments, voices, and "natural" sounds. As is the case in the professional audio industry, where sound quality is paramount, all functions are interconnected by patchcords — the quietest and most reliable means known. The system is also available without the 907A Fixed Filter Bank (Model 15A), to meet today's budget and allow for expansion in the future. Either system provides an exciting entry into the world of electronic sound — or a versatile addition to your present synthesizer. As with all Moog professional synthesizers, your choice of sounds is completely flexible, to become part of your music today and for the future!



Individual Module Features

A 907A Fixed Filter Bank

- Separate amplitude control of 10 bandwidths in the audio range
- $\frac{1}{2}$ octave bandwidth divisions in the critical 250 to 2800 hz. range

B 995 Attenuators Panel

C 904A Voltage Controlled Lowpass Filter

- Manual and voltage control of cutoff frequency, from 60 to 20,000 hz.
- Variable regeneration from "0" to oscillation
- 3 control input jacks — exponential response

D 902 Voltage Controlled Amplifier

- Extremely wide (80 db) dynamic range
- Switch-selectable linear or exponential control response
- Complementary-paired sets of inputs and outputs
- 3 control input jacks

E 921A Oscillator Driver

- Master controls and control inputs for associated 921Bs
- Fine and coarse tuning control, switch-selectable
- 3 frequency control input jacks — exponential response
- Rectangular waveform width control from 5% to 95%, for associated 921Bs
- 2 rectangular width control input jacks

F 921B Voltage Controlled Oscillator

- Frequency range from 1 to 40,000 hz.
- State-of-the-art stability and tracking
- Sine, Sawtooth, Triangle, Rectangular waveforms available simultaneously
- AC and DC coupled frequency control input jacks — linear response
- Phase-lock synchronization control input, with locking strength switch selectable

G 923 Random Noise/Filter

- White (equal energy per unit bandwidth), and Pink (equal energy per octave) noise outputs
- Lowpass and Highpass filters, each with variable cutoff frequency from 10 to 20,000 hz.

H 921 Voltage Controlled Oscillator

- Frequency range from .01 to 40,000 hz.
- State-of-the-art stability and tracking
- Precise octave switching, fine and coarse tuning control
- Sine, Sawtooth, Triangle, Rectangular waveforms available simultaneously
- 6 switch-selectable auxiliary waveforms, with + and — outputs, level control
- 3 frequency control input jacks — exponential response
- Rectangular waveform width modulation by manual and voltage control
- Waveform clamping at any point in the cycle

I 911 Envelope Generator

- Separate control of four parameters of the output voltage contour: initial rise time, initial decay time, sustain level, and final decay time.
- Activated by switch trigger

J 4-Input Mixer with + and — outputs, Jack Multiples

K Reversible Attenuator, Jack Multiple

L 3 Control Voltage and Trigger Outputs

M 2 Trunklines

N Power Switch

Includes 910 Power Supply and 952 Duophonic Keyboard Controller.

Patchcord Complement:

- 10 one-foot Audio Cords
- 8 two-foot Audio Cords
- 2 one-foot Switch Trigger Cords
- 1 18-inch Switch Trigger Cord
- 1 Switch Trigger Y-Cord

Power Requirements:

- 110-125 volt AC, 50-60 Hz, 130 watts
- A standard 3-wire AC power cable is included

Dimensions & Shipping Weight:

- Modular instruments are housed in a Portable Case measuring 18" wide, 25" high, 9½" deep
- Keyboard dimensions: 34½" wide, 3¼" high, 9½" deep
- Shipping weight: 80 pounds

Optional Equipment:

- Additional 952 or 951 Keyboard
- 1120 Foot Pedal Controller
- 1150 Ribbon Controller
- Portable Sequencer Complement A or B
- Touch Sensitive Percussion Controller
- Additional Portable Case with your choice of modular instruments



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SYNTHESIZERS

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