

# moog liberation



Liberation is a self-contained, mobile musical instrument with an unbelievable number of performance options. It is completely polyphonic, yet features a separate lead synthesizer with two oscillators, unique Moog® sound and total synthesizer variability. Individual mixer controls allow you to choose a final output of either one or both oscillators, ring modulation, noise generator, polyphony or any mix of those functions.

The left-hand controllers and force-sensitive keyboard combine to provide for more nuances, effects and musical subtleties than you have ever imagined. Yet they are there at your fingertips. Comfortably.

Only 14 pounds for complete portability. Outstanding features. Affordable price.

From Moog, of course... we're the people who started it all!

# moog liberation

## FEATURES:

- Temperature regulated ultra stable audio oscillators (Heated chip technology).
- Logical control panel layout with signal progressing from left to right.
- Two voltage controlled audio oscillators, each with separate three position octave rocker switches, waveform selectors, and volume controls. Oscillator two has separate interval control. (Both oscillators one and two are tuned with Master tune control.)
- Switchable oscillator synchronization. Force control of sync sweep.
- Separate low frequency modulation oscillator with triangle and square waveshapes.
- Variable modulation amount wheel controls amount of vibrato, trills, wah-wah and/or tremolo.
- Separate filter and oscillator force or wheel switches.
- Patented Moog voltage controlled 24dB/octave filter with self-oscillation feature.
- Separate contour generators for VCA and VCF.
- Keyboard force sensor.
- Digital Ring Modulator.
- 44 note polyphonic oscillator bank.
- Neck controls for pitch bend, filter emphasis, force sensor, modulation, glide and volume.
- External synthesizer interface—1 volt/octave output (includes pitch bend, keyboard, modulation, force).
  - S-trigger
  - On-Off Switch
- 40' Interconnect cable.
- XLR connectors for durability.
- Interface box can be rack mounted or used free standing.
- Sample & Hold
- LED indicates modulation rate.
- LED indicates trigger.
- Interval tuning pot "dead band" for accurate tuning of monophonic oscillators.

## POWER REQUIREMENTS:

Operating voltage range  
Domestic 100 to 127 volts 60Hz  
Export 200 to 260 volts 50Hz

Power consumption: less than 20 watts

## CONTROLLERS:

Keyboard: 44 note F to C Hi-note priority with monophonic glide variable from less than 2 msec. to 3 sec.

Tune control range: +/-3 semitones

Pitch ribbon range: Greater than +/-fifth

Keyboard Sample & Hold drift: Less than 2mV/10 sec.

Modulation oscillator rate: From .3Hz to 30 Hz.

Modulation oscillator waveshapes: Triangle, square, sample & hold.

Amount of modulation  
(Square wave): Under wheel or force controller

Oscillator: from zero to 1 octave

Filter: from zero to 4.5 octaves

Amount of force bend:

Oscillator: from zero to 1 octave

Filter: from zero to 4.5 octaves

Auto trigger: Triggers contour generator from modulation oscillator

## OSCILLATOR 1:

Reference frequency for low F (octave = 32'): 43.65Hz.

Scale factor accuracy: 0.1% from 44Hz to 1.5KHz.

Range drift due to temperature: 32°F to 100°F less than .02%/°C.

Waveforms: Sawtooth, triangle, rectangular pulse.

Pulse duty cycle: 10%.

Octave switch footages: 32', 16', 8'

Octave switch accuracy: 0.3%.

## OSCILLATOR 2:

Reference frequency for low F (octave = 16'): 87.31 Hz.

Scale factor accuracy: 0.1% from 88Hz to 3KHz

Range drift due to temperature: 32°F to 100°F less than .02%/°C.

Scale factor drift due to temperature: 32°F to 100°F less than .02%/°C.

Waveforms: Sawtooth, triangle, square.

Octave switch footages: 16', 8', 4'

Octave switch accuracy: 0.3%.

Interval control range: Greater than +/- perfect fifth.

## NOISE:

Type: Digital pseudorandom pink noise.

## RING MODULATOR:

Type: Digital exclusive "or."

Inputs: Oscillator 1 and Oscillator 2.

Input waveforms: Square waves.

## OSCILLATOR SYNCHRONIZATION:

In the sync mode, Oscillator 2's sawtooth wave can be reset by itself or by the reset pulse from Oscillator 1. This locks the fundamental frequency of Oscillator 2 to Oscillator 1 generating a complex waveform. When in the sync mode, the force output is routed to Oscillator 2.

## CONTOUR GENERATORS:

Number: Two (one for controlling the filter through an attenuator, the other for controlling the voltage controlled amplifier).

Range of Attack times: From 1 msec. to 10 sec.

Range of Decay/Release times: From 1 msec. to 10 sec. minimum.

Range of Sustain level: From 0 to 100% of contour peak.

## VOLTAGE CONTROLLED LOW PASS FILTER:

Type: 24dB/octave cutoff slope.

Filter-Keyboard tracking: three position.

Rocker switch allows routing of control voltage to filter:

a) 0 filter does not track keyboard.

b) 1/2 2 octaves of keyboard equals one octave on filter.

c) 1 filter tracks keyboard within 1%.

Cutoff frequency (with control set to zero, in self-oscillating mode) 666 +/-50Hz.

Range of filter cutoff control: 8 octaves.

Maximum sweep of cutoff frequency by filter contour generator: 8 octaves.

Range of neck filter cutoff control: 8 octaves.

## VOLTAGE CONTROLLED AMPLIFIER:

Bleed through level: Better than -60dBm.

Contour signal rejection ratio: 50 dB.

## BURN-IN (AGING):

Before final calibration, units are burned in for 72 hrs. at ambient of approximately 72°F.

## POLYPHONIC OSCILLATOR BANK

Reference frequency for Lo F: 87.31Hz

Waveform: Square.

Poly Tune Range: +/-3 semitone.

Keying system: on-off keyboard keying.

Range: 44 note F to C.

## POWER SUPPLY/INTERFACE BOX:

Audio output level: 0dBm into 10k ohms.

Audio output impedance = 1k ohm unbalanced.

External synthesizer control voltage output: 1.00 volt/octave.

External synthesizer trigger: S-trigger to ground.

## DIMENSIONS AND WEIGHTS:

Dimensions instrument: 5 3/8"H x 12 7/8"D x 4 6 3/4"L.

Net weight: 14 pounds.

Power Supply/Interface:

Dimensions: 3 5/8"H x 8"D x 19"L.

Net weight: 7 lbs.

Interface cable length: 40 feet.



2500 Walden Avenue, Buffalo, New York 14225