

## **Minimoog Voyager Rack Mount Edition**

The Minimoog Voyager Rack Mount Edition Synthesizer is a monophonic (one note at a time) analog performance synthesizer housed in a 5U Rack Mount Enclosure. The signal path starts with a bank of three wide-range, high-stability voltage controlled oscillators, one noise source, and one audio preamplifier for externally-applied audio signals. The sound modifiers are a dual mode filter module, containing a dual Moog lowpass mode and a highpass/lowpass mode and one stereo VCA (Voltage Controlled Amplifier). Modulation sources are two ADSR (Attack Decay Sustain Release) envelope generators and one multiwaveform LFO (Low Frequency Oscillator).

The digital functions of the Voyager allow for storage of presets, transmitting and reception of MIDI, and software upgrades via MIDI. The User Interface is a LCD display with variable contrast, +1/-1 and cursor buttons for navigation, an Enter button for executing functions, and 3 Mode functions for determining the operation mode of the Voyager. Master Mode allows access to Global Settings and Utilities; Edit Mode allows access to Items stored as a Preset, and performs the Save function; Panel Mode allows access to the presets and is the mode used for performance, as well as performance related features.

### **Oscillators Module**

Three wide-range, high stability VCOs (Voltage Controlled Oscillators) with continuously variable waveforms.

- Two FREQUENCY controls vary the frequencies of Oscillators #2 and #3 over a +/-7 semitone range with respect to Oscillator #1.
- Three OCTAVE selectors set the frequency ranges of the oscillators in six octave steps.
- Three WAVE controls provide continuous control over the waveforms of the oscillators, from triangular, to sawtooth, to square, to narrow rectangular.
- 1-2 SYNC switch synchronizes the Oscillator #2 waveform to the frequency of Oscillator #1, for dramatic timbral effects.
- 3-1 FM switch provides linear frequency modulation of Oscillator #1 by Oscillator #3.
- 3 KEYBOARD CONTROL switch disconnects Oscillator #3 from control by the keyboard CV, enabling it to function as a drone or a modulation source independent of the keyboard.
- 3 FREQ switch lowers the frequency of Oscillator #3 into the sub-audio range, enabling it to function as a low frequency audio or modulating oscillator.

### **Mixer Module**

Five-input mixer for combining the audio sources prior to filtering.

- Five Input Level controls adjust the relative levels of the oscillator, noise, and external audio input signals.
- Five Input switches enable the player to quickly switch individual audio signals in and out.
- External Level LED enables the player to set the correct external audio signal level.

## Filters Module

Dual mode filter module includes two Moog lowpass-resonant filters in parallel to stereo output or a highpass and lowpass-resonant filters in series, for highpass, bandpass, or lowpass filtering.

- CUTOFF control sweeps the frequencies of both filters throughout the audio range.
- SPACING control sets the spacing between the frequencies of the two lowpass filters or controls the frequency of the highpass filter, over a +/-3 octave range.
- RESONANCE control adjusts the resonance of both filters, from none to filter oscillation.
- KEYBOARD CONTROL AMOUNT control sets how much the filters open and close as the player presses different keys on the keyboard controlling the Voyager Rack Mount.
- DUAL LOWPASS/ HIGHPASS-LOWPASS switch selects between two lowpass filters in parallel or a lowpass and highpass filter in series.

## Envelopes Module

The Envelopes Module generates two wide-range ADSR (Attack Decay Sustain Release) envelopes. The Filter Envelope sweeps the filter and is available for modulation shaping. The Volume Envelope shapes the overall volume.

- Two ATTACK controls determine the attack times of the envelopes.
- Two DECAY controls determine the decay time constants of the envelopes.
- Two SUSTAIN controls determine the sustain levels of the envelopes.
- Two RELEASE controls determine the release time constants of the envelopes.
- AMOUNT TO FILTER control determines how much the filter envelope will open and close the filter, from full negative (inverted envelope) to full positive (non-inverted envelope).
- ENVELOPE GATE switch selects whether the envelopes will be triggered by the keyboard or by programmable envelope gate sources, including Keyboard Gate, S+H Gate (LFO), and MIDI Clock, allowing independent triggering of the two envelopes.

## LFO Module

Low Frequency Oscillator generates triangular, square, Sample & Hold, and smoothed Sample & Hold waveforms for use as modulating signals.

- RATE control sets the LFO rate over the range 0.2 Hz (one cycle every five seconds) to 50 Hz (50 times a second).
- SYNC selector selects LFO synchronization source to be from the keyboard gate, MIDI Clock, external gate, or off (no synchronization).
- RATE LED provides visual indication of the LFO rate.

## Modulation Busses Module

Selects the sources, destinations, and shaping signals for the MOD WHEEL bus and the PEDAL/ON bus.

- Two SOURCE selectors select the modulation source from the LFO waveforms, Oscillator# 3, the MOD2 Voltage, or a software selectable source whose default is noise.

- Two DESTINATION selectors select the modulation destination from the pitch of all the audio oscillators, just Oscillator #2, just Oscillator #3, the filter frequencies, the oscillator waveforms, or a software selectable destination whose default is LFO Rate.
- Two SHAPING selectors select the filter envelope, key pressure signal, key velocity or a software selectable source whose default is on to shape the modulation signal on that bus.
- Two AMOUNT controls set the overall modulation amount for each bus.

### **Output Module**

- MASTER VOLUME control sets the overall level of the instruments audio outputs.
- HEADPHONE VOLUME control sets the overall level of the headphone output.
- HEADPHONES JACK: 1/4" tip-ring-sleeve phone jack for regular stereo headphones.

### **Glide and Fine Tune Module**

- GLIDE varies the speed at which the keyboard voltage changes, from instantaneous to several seconds.
- FINE TUNE adjusts the overall tuning of the instrument.

### **Digital/ MIDI Implementation Capabilities for OS Version 2.6**

- FRONT PANEL STORAGE AND RECALL: Except for the Fine Tuning control, the settings of all front panel controls, selectors, and switches are stored in the nonvolatile digital memory. A total of one hundred twenty eight front panel programs may be stored for instant recall. Presets are saved in EDIT mode.
- CONTROL OF FRONT PANEL PARAMETERS THROUGH MIDI: All front panel parameters except for fine tune and headphone volume are controllable through MIDI Control Change commands.
- TRANSMISSION OF FRONT PANEL SETTING VIA MIDI: Setting of all panel controls, selectors, and switches except for fine tune and headphone volume transmit MIDI Control Change Commands. Potentiometer controls transmit 14 bit CCs
- UPLOADING AND DOWNLOADING OF BANKS OF SETTINGS VIA MIDI: Entire banks or individual presets may be uploaded and downloaded via MIDI.
- UPDATING OF OPERATING SOFTWARE VIA MIDI: The instruments operating software can be updated via standard MIDI (.MID) or Sysex (.SYX) files which will be available on Moog Music's web site: [www.moogmusic.com](http://www.moogmusic.com).

### **PANEL MODE FEATURES:**

- Quick Mode
- Parameter Display
- Master/HP Volume
- LCD Contrast
- T.S. Reduction
- Ext. Audio Pot
- Glide Function
- Release Function

## **EDIT MODE FEATURES:**

- Compare to Preset
- Recall Last Sound
- Real Panel Parameters
- Pitch Bend Amount
- PGM Mod Wheel Source
- PGM Mod Wheel Destination
- PGM Pedal Source
- PGM Pedal Destination
- PGM Shaping Source 1
- PGM Shaping Source 2
- Keyboard Modes
- Trigger Modes
- Filter A Poles
- Filter B Poles
- Filter Envelope Gate Source
- Volume Envelope Gate Source
- T.S. Destinations
- T.S. Memory Mod Buss
- T.S. Memory Global
- Pot Mapping Sources/Destinations
- MIDI Clock Divider
- Initialize Parameters
- Preset Name
- Save Preset

## **MASTER MODE FEATURES**

- MIDI Program Change
- MIDI Channels
- MIDI Out On/Off
- MIDI Merge Function
- Send Panel Sound
- Send Preset(s)
- Receive Presets
- SysEx Device ID
- Key Transpose
- MIDI Key Order
- MIDI Running Status
- Copyright Info
- Software Version
- Send System ROM
- Send Boot System
- Receive Update

## **Rear Panel Connectors**

### **AUDIO OUT RIGHT AND LEFT (MONO)**

These are the main audio outputs. A slide switch allows selection of -2dBm unbalanced floating outputs, or +4 dBm, 600 Ohm balanced outputs.

### **MIXER EXT IN**

Plug any instrument-level or line-level audio signal in this jack to combine with the oscillator and noise signals prior to filtering.

### **MIX OUT/FILTER AUDIO IN**

This is a TRS insert point that can be used to insert an effect between the output of the Mixer and the Input of the Filters using a standard insert cable. The output of the audio mixer appears here, before being fed to the filter. The Mixer output appears at the tip of this jack, the return to the Filters appears at the ring. If you plug something into this jack, that breaks the normal connection.

## **ACCESSORY PORTS**

### **INPUTS**

This is a standard male DB-25 connector that provides the following control voltage and gate inputs:

#### **Control Voltages:**

- VOLUME
- PAN
- FILTER CUTOFF
- OSCILLATOR WAVEFORM
- OSCILLATOR PITCH
- MOD2 (EXTERNAL MOD SOURCE)
- MOD1 (CONTROLS PEDAL/ON MOD BUS AMOUNT)
- SAMPLE AND HOLD IN
- ENVELOPES RATE
- LFO RATE
- T.S. X
- T.S. Y
- T.S. A

**Gates:**

- LFO SYNC
- ENVELOPES GATE
- SAMPLE AND HOLD GATE
- RELEASE
- T.S. GATE

**OUTPUTS**

This is a standard female DB-25 connector that allows access to the control voltage and gate output signals from the Voyager. A VX-351 CV Expander can be connected to this port to output these signals on its 1/4" jacks. Control signals that are routed to this port are:

- KEYBOARD GATE
- KEYBOARD CV
- KEYBOARD PRESSURE CV
- KEYBOARD VELOCITY CV
- X, Y, AND Z CV OUTPUTS FROM THE T.S. INPUTS
- MOD 1 AND MOD2
- MOD AND PITCH WHEELS
- MOD BUS OUTPUTS
- FILTER AND VOLUME ENVELOPES
- LFO TRIANGLE AND SQUARE WAVE
- SAMPLE AND HOLD STEPPED AND SMOOTHED OUTPUT
- NOISE

**MIDI IN, THRU, and OUT connectors****100-240 VOLT POWER CONNECTOR**

Universal power supply enables the Minimoog Voyager to be plugged in anywhere in the world without special switching or adapters.