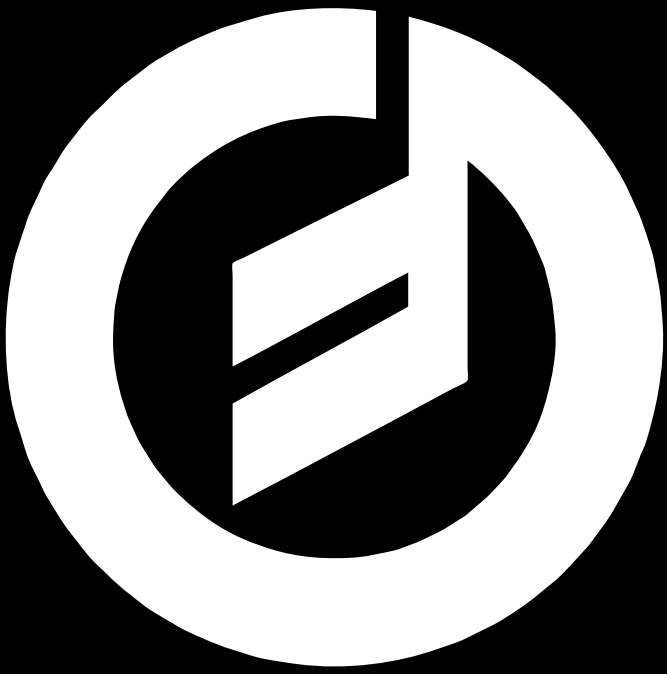

animoog

ANISOTROPIC SYNTH ENGINE

USER'S MANUAL

Animoog is a professional polyphonic synthesizer that carries on Dr. Robert Moog's exploration of touch-surface technologies to create new and expressive musical instruments.

The new Anisotropic Synthesis Engine (ASE) is the heart of Animoog. It is a dynamic waveform animator comprised of an X/Y grid with 8 TIMBRES containing 16 waveforms each. These TIMBRES include sources derived from Moog synthesizers, the MF-103 12-Stage Phaser, and the MF-105 MURF. The waveform morphs and evolves as ASE is modulated throughout the X/Y space, allowing you to see and hear dramatic changes of timbre in real time. This constantly evolving soundscape is then fed into a traditional Moog-style synthesis architecture including classic Moog ladder filters with overdrive.

Note: *Before launching Animoog, please make sure that Multitasking Gestures is turned off in your iPad's settings. Launch your settings application, select General from the icons on the left, and turn Multitasking Gestures off.*

STARTUP PAGE- Startup loads the default preset and displays the X/Y PAD (8x16 grid) which corresponds top to bottom with the 8 dynamically evolving waveforms selected in the TIMBRE array page. Active voices are displayed as colored dots with modulation in the X/Y space shown as comet trails. The resulting output waveform is displayed on the X/Y PAD in real time.

TABS: Touch each of the tabs (X/Y PAD, KB SCALE, ENV/MOD, TIMBRE, and SETUP) to display that page's parameters. To the right are MODULES for the FILTER, PATH, and ORBIT (left slot), and DELAY, THICK, and RECORDER (right slot). Touch the up or down arrows to cycle through each module.

Below the display screen is the PRESET selector. Tap the PRESET bar to open the preset list. Touch and drag the list to scroll, tap a preset to load. To name and save presets, touch and hold the SAVE button in the PRESET bar.

Also below the display screen is BPM (Beats Per Minute). Press the TAP button repeatedly or touch and drag the indicated BPM to change tempo. Turning knobs on SYNC parameters will show in this window as a multiple or division of Whole Notes (Wn) or Quarter Notes (Qn). Range: 60-240 BPM.

Directly above the keys is a green slide bar. Select keyboard range by dragging the bar left or right, and the number of keys displayed by dragging one of the tabbed ends left or right.

Bottom screen are the performance controls. Left side are configurable Modulation and Pitch Bend Strips, center is the Touch Keyboard, and on the right are the knobs for VOLUME, COR (key pitch correction), and GLIDE.

Modulation and Pitch Bend Strips illuminate to show control amounts. Brighter indicates more Modulation or Pitch bend. These strips can be toggled on or off in the setup page.

The Touch Keys are white or black as on a traditional keyboard. An indicator LED shows a unique color for each voice, and the keys illuminate as your finger moves toward the top of the key. Each touch key and corresponding voice trails remain lit until each voice decays fully. Finger position on the Touch Key can be assigned as POLYPRESSURE in the ENV/MOD page.

The VOLUME knob sets overall volume. COR sets pitch correction for the Touch Keys. Clockwise, the pitch for the Touch keys is quantized to concert pitches, and counter-clockwise there is no pitch correction.

GLIDE controls portamento (sliding pitch from note to note) time. Counterclockwise is off, clockwise sets longer times.

X/Y PAD- The X/Y PAD is an 8 x 16 grid of selected TIMBRES that evolve as each voice moves through the 2 dimensional space, leaving a colored trail. The grid is composed of 8 assignable waveforms arranged top to bottom on the TIMBRES page. Touching and moving the large green dot on the grid offsets the voice PATH and ORBIT location of a voice.

KB SCALE- The KB SCALE page sets the root key and scale of the touch keys. It also controls assignment modes for monophonic or polyphonic operation. Scales are selected from a list or can be user assigned. They can be edited from existing scales by tapping keys in the display area. The selected keys illuminate in the display and add corresponding touch keys to the keyboard. To select a commonly used scale, touch and hold the arrow on the SCALE pulldown menu. To set the key's ROOT NOTE, select from the ROOT NOTE menu on the upper right of the display. Customized scales may be stored with PRESETS, but cannot be added to the SCALE menu.

At the bottom of the display screen, there are 3 buttons that control synthesizer voicing: MONO Touching and illuminating MONO turns Animoog into a monophonic (1 voice) synthesizer useful for leads, basses, and solos. With MONO off, the polyphony is 4 voices with 1, 2 or 4 available layers which are set in the THICK module.

With MONO and LEGATO turned on, the voice will re-trigger when playing detached separate notes, but will not re-trigger on overlapping notes. In this mode, GLIDE is only active when an overlapping legato note is detected.

With MONO on and LEGATO off, each new note played triggers the envelopes from start. GLIDE is only active when sliding to an adjacent note. LEGATO only affects MONO voicing.

PHASE RESET forces the ASE oscillators to reset at the same start phase with each new note. With stacked voices selected in the THICK page, PHASE RESET resets the voices for each new note for flanging and comb filtering effects and also gives the voice a harder edged attack. With PHASE RESET off, voices "free run" and vary from note to note naturally.

ENV/MOD- ENVELOPES control the attack, decay, sustain and release of the AMP (amplitude), FILTER, and MOD (assignable modulation via the MOD 1-4 slots). Drag the green dots to adjust the envelope shape. To open up a larger ENVELOPE window, double tap the individual envelope. Double tap to collapse the window.

LFO (low frequency oscillator) is a modulation source. RATE controls the LFO frequency. When SYNC is on, the RATE is a multiple or division of the BPM, ranging from 8 Wn (whole notes) to 1/64 Wn. SHAPE is a continuously variable blend from Sine, to Ramp, to Sawtooth, to Square, to Sample and Hold. All of the waveshapes are bipolar (symmetrical over the zero crossing) except for Square wave, which is

unipolar. KB TRIG re-triggers the start phase of the LFO waveform with each new voice triggered.

MOD 1-4 Select from the 4 tabs to edit the modulation slots, each with programmable SOURCE, CONTROL, and DESTINATION.

SOURCE selects the modulation source. Touch the arrow to open the pull-down menu and select OFF, LFO, MOD, X-POSITION or Y-POSITION as a source. If OFF is selected, then CONTROL becomes the modulation source. AMOUNT is Bipolar and can be used to scale or invert the selected source's modulation amount. Double tapping the AMOUNT knob zeroes out the modulation amount.

CONTROL can be a source or it can scale the SOURCE modulation amount. If OFF is selected, then the controller selected at the menu is scaled by the AMOUNT knob's setting and routed to the DESTINATION parameter.

If there is a selected SOURCE from the source pull-down menu, then SOURCE AMOUNT sets the initial modulation amount, and CONTROL AMOUNT crossfades between the SOURCE AMOUNT and a scaled amount via the selected controller. If SOURCE AMOUNT is 100% and CONTROL AMOUNT is zero (12:00), or OFF is selected, then there is no controller scaling of the modulator. If the CONTROL AMOUNT is set to 100% then the selected controller scales the modulation from the selected SOURCE. Adjusting the SOURCE and CONTROL AMOUNT settings in tandem sets the modulation range. CONTROL sources are OFF, POLY-PRESSURE, CHANNEL-PRESSURE, VELOCITY, KEY PITCH. MOD-WHEEL, and PITCH BEND.

DESTINATION is the parameter to be modulated by the SOURCE and CONTROL settings. Select a DESTINATION from the pull-down menu. DESTINATIONS are OFF, FILTER-FREQUENCY, FILTER RESONANCE, FILTER-AMOUNT, FILTER DRIVE, ORBIT-RATE, ORBIT-X-AMOUNT, ORBIT-Y-AMOUNT, PATH-RATE, PATH ORIGIN, LFO-RATE, LFO-SHAPE, THICK-DETUNE, PITCH-1-SEMITONE and PITCH-5-SEMITONE.

TIMBRE- The TIMBRE array is composed of a selection of 8 static or evolving timbres, which are the heart of the ASE oscillator. These timbres have been meticulously derived from a number of classic sources including the Moog Voyager, Little Phatty, 12 Stage Phaser, MURF and other Modular Synthesizers. On the left side of the screen, the selected timbres correspond exactly to their location in the X/Y PAD. Audition the raw timbre (left) by touching and holding it. Replace a timbre by selecting the desired slot in the array and then select a new timbre from the scrolling list on the right side of the screen. To change the order of the timbres in the array, drag a timbre to its desired location and it will swap locations with the timbre in that slot.

SETUP- Setup displays the available MIDI and network input control sources, and manages global and preset settings. If controlling Animoog from an external keyboard via MIDI or USB, select the desired input source from the scrolling menu on the left side of the display. If you have connected a new device or your controller is not appearing in the list, tap the Refresh MIDI input(s) button.

The middle of the screen contains 8 buttons; PANIC!, Toggle modstrips, Toggle Oscilloscope, Save Configuration, New Preset, Delete Preset, Import Presets, and Export Presets.

-PANIC! sends an all-notes off message to shut off voices in the event of a note hang.
-Toggle mod-strips shows/hides the pitch and modulation strips.
-Toggle oscilloscope turns on and off the waveform display on the X/Y Pad.
-Save configuration saves the toggled setting for the mod-strips, oscilloscope and selected MIDI input device.
-New preset creates a raw default starting point for developing a new preset.
-Delete preset deletes a selected and loaded preset from the list.
-Import and Export allows the user to share presets with other users and import new artist presets from Moog via iTunes.
-Export presets compresses all of the current internal presets into a zip file that can be saved to your iTunes application's iPad data folder.

To import presets, decompress them into a folder within your iPad data folder and add the presets to your device. Within the application, tap the Import presets button to add the new presets to your library.

MODULES- To the right of the display screen area are two MODULE slots that control other synthesis and performance parameters. Touching the up or down arrows at the top and bottom of each module navigates to the next module. The left slot contains the controls for FILTER, ORBIT, and PATH. The right slot contains the controls for THICK, DELAY, and RECORD module.

FILTER MODULE- A resonant filter, which has a selectable LP (Lowpass), BP (Bandpass), or HP (High-pass) response. The filter alters the tone of the ASE by amplifying, passing, or attenuating certain frequencies. Resonance emphasizes the filter's cutoff frequency and self-oscillates at higher settings. Select the desired response by using the rotary knob.

DRIVE- Controls the amount of pre-filter drive level, from zero signal to full saturation, modeled after the classic Moog ladder filter design. Note: Unity gain is at 5. Bipolar modulation of DRIVE inverts the signal phase as it passes below zero.
ENV- Is the bipolar amount of filter envelope modulation.
FREQUENCY- Is the initial cutoff frequency of the filter.
RES- Is the resonance or emphasis at the cutoff frequency. Range is from zero to full oscillation.

ORBIT MODULE- Is a low frequency oscillator that changes TIMBRE by modulating voice location in the X/Y space.

SYNC- Synchronizes the RATE to divisions or multiples of the BPM clock ranging from 8 Wn (Whole notes) to 1/64 Wn.
RATE- Controls the frequency of movement through the X/Y space.
X AMOUNT and Y AMOUNT- Control the range of modulation in each corresponding direction. The effects of ORBIT combine with PATH and the green offset dot.

PATH MODULE- A set of 1 - 14 lines with up to 15 points that change TIMBRE by modulating voice location in the X/Y space.

SYNC- Synchronizes the RATE to divisions or multiples of the BPM clock ranging from 8 Wn (Whole notes) to 1/64 Wn.
RATE- Controls the frequency of movement through X/Y space along the PATH.
MODE- Sets the type of motion along the path. LOOPING repeats the path in one direction, BACK-FORTH moves in both directions and ONCE for movement from start with latching at the end.
EDIT- Activates editing of the PATH. Select X/Y PAD from the top tab, turn EDIT on, and touch locations within the X/Y grid to set points. To move any of the points, touch the point and slide it to the desired location. When editing is complete, turn EDIT off. Leaving the PATH module also turns EDIT off.
CLEAR- Removes all lines and points. The effects of PATH combine with ORBIT and the green offset dot.

THICK MODULE- Controls distortion, layering and stereo detuning effects.

CRUSH- Increases aliasing and digital distortion by bit and sample rate reduction.
DRIVE- Adds analog-style overdrive saturation to the overall output of the combined voices.
DETUNE- Sets the tuning offsets of UNISON voice modes. With UNISON off, DETUNE has no effect on the voice. With 2 or 4 voices selected via the UNISON knob, voices are panned hard left and right and DETUNE sets pitch offset from zero to + one octave. UNISON settings do not affect polyphony.

DELAY MODULE- Adds time based spatial effects such as comb filtering, doubling or echo to the combined voices.

SYNC- Synchronizes the delay TIME to the BPM clock ranging from 1-8 Qn (quarter notes).
TIME- Sets delay time.
FEEDBACK- Sets the amount of delayed signal remixed to the delay input.
MIX- Sets the balance between dry and effected signal.

RECORD MODULE- A virtual sound-on-sound module that controls recording, layering and overdubbing of real-time performances using Animoog.

PLAY/STOP- Plays back the recorded performance.

RECORD- Clears the memory buffer and records a new performance. A white line around the indicator LED shows the current time in the record buffer. At the end of the maximum record time (or when the RECORD button is pressed a second time), recording stops and the record light turns off. PLAY and OVERDUB automatically engage to allow playing of additional parts to be recorded and layered with the first recorded performance.
OVERDUB- Can be toggled on or off at any time while PLAY is engaged. OVERDUB allows recording of additional layers of audio over an existing recorded performance.
BUFFER- Allows saving of a good take or mix so that an overdubbed performance can be replaced if desired. The BUFFER is stored as a file, clipboard.wav, which can be exported via iTunes and imported into a Digital Audio Workstation for further editing.
COPY- Copies the current Record buffer to the clipboard.
PASTE- Places the current contents of the clipboard into the Record buffer Note: COPY and PASTE can also be used to move audio between Animoog and other apps that support the AudioCopy and AudioPaste standards.
CLEAR- deletes the current record buffer.

Note: Specifications subject to change.