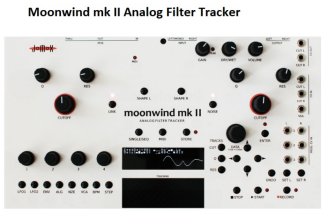


Moonwind mk II Analog Filter Tracker User Manual

Contents

moonwind

Moonwind mk II Analog Filter Tracker

Product Information

Specifications

- **Product Name:** Moonwind mk II
- **Type:** Analog Filter Tracker
- **Input Levels:** From weak guitar signals to very high studio line levels of +20dBu
- **Output Level Range:** Adjustable from – to about max. +20 dBu
- **Cutoff Frequency Range:** 16Hz-ca. 35kHz
- **Resonance Range:** 0 to maximum for self-oscillation capability

Product Usage Instructions

Single Mode

1. After turning it on, the Moonwind MK II is in Single mode and the main menu (quick edit mode).
2. The filter and effects processor functions as a filter bank and can be edited directly using the rotary knobs.
3. Each change made is immediately audible and can be stored right away.

Controls Overview

- **GAIN:** Adjust input gain to prevent Peak LED from lighting up.
- **DRY/WET:** Control the mix between direct signal and effect amount.
- **VOLUME:** Adjust the output level.
- **CUTOFF & Q:** Control cutoff frequency and filter narrowness respectively.
- **RES:** Adjust filter resonance for self-oscillation capability.

MIDI Functionality

- **MIDI In:** Receives MIDI data
- **MIDI Out:** Transmits MIDI data to another MIDI-capable device.
- **MIDI Thru:** Bypasses MIDI data to another MIDI-capable device without change.

Editing the Sequencer

1. Press the SINGLE/SEQ button to switch between single mode and sequencer mode.
2. Use the four endless encoders to adjust different values corresponding to the selected mode.

Frequently Asked Questions (FAQ)

Q: What is the purpose of the Encoder 1-4 on Moonwind mk II?

- **A:** The encoders are used to adjust various parameters corresponding to the selected mode, such as filter settings or FX parameters in quick edit mode.

Q: How do I switch between Single and Sequence mode on Moonwind MK II?

- **A:** Press the SINGLE/SEQ button to toggle between the two modes.

Single Presets

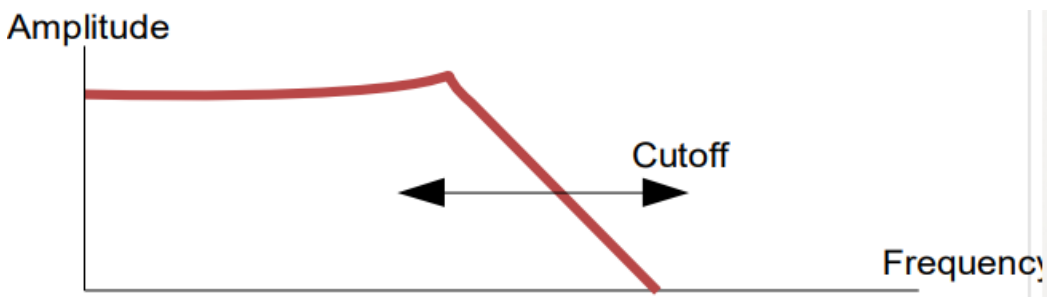
- After turning on, the Moonwind MK II is in
- Single mode and in the main menu i.e.
- quick edit mode.
- The filter and the effects processor now work like a filter bank and can be edited directly by the rotary knobs.
- Each change is immediately audible and can be stored right away.

SINGLE/SEQ

- This button switches between the single mode and sequence mode. In single mode, the Moonwind MK II works as a standalone filter bank.

CUTOFF

- This knob controls the cutoff (corner) frequency of the filter. According to the shape setting of the filter, you change the fundamental properties of the filter and its sound influence.
- The range goes from 16Hz-ca. 35kHz and accordingly covers the whole audio range.



- The Moon Wind MK II owns two identical filters. Therefore only one side is described in more detail here

because the three, in a triangle arranged knobs Cutoff, Q, and Res have the same function on each filter.

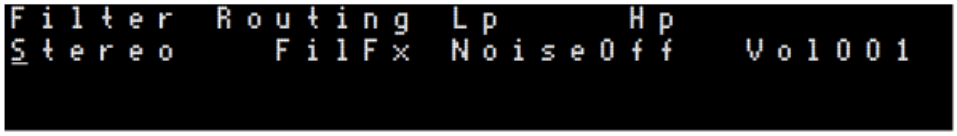
Encoder

Encoder 1-4

- To the left of the OLED display, four endless encoders can adjust different values corresponding to the selected mode.
- Four parameters are to be changed on every menu page. These incremental rotary knobs always work relative to a chosen parameter and increase with clockwise movement and decrease with counterclockwise rotation.
- In quick edit mode, the encoders edit the 4 FX parameters directly.

Noise

- Press the NOISE button and a menu opens:



- You can decide here if white or metallic noise is fed into the moon wind MK II filter or not. For some experimental sound applications, this can be very useful.
- The Moon Wind MK II emerges to be a complete sound producer.
- **Noise** = 001 produces white noise. Above that the metallic noise pattern is a binary scheme derived from the noise value.
- None is the same, and you have a huge variety of metallic noise patterns to explore. Some are a bit tonal, some are hissy and noisy. The higher the number is, the more complex the repetitive noise signal can be.

Noise Volume

- The noise mixed with the main signal flow can be volume controlled here.

Midi

Midi In

- This jack serves to control the Moonwind MK II by another Midi capable device, e.g. a soft- or hardware sequencer, a controller box, a Jomox Alpha Base, or similar.
- The moonwind mk II is processing midi note commands. Both FIL and VCA envelopes are triggered. The notes control the cutoff of both filters. The note number is scaled in such a way that with self-resonating filters roughly musical semitones are met – however, the filter modes are never as precise as the VCO of a synth. The pitch varies with Q and resonance amount and the logarithmic scaling is not perfect too. Who expects here a synthesizer with perfect tuning will be disappointed – this is an analog filter bank and not a synth.

Midi Out

- Serves to transmit Midi data from the moon wind mk II to another Midi capable device, e.g. a soft- or hardware

sequencer, to exchange data.

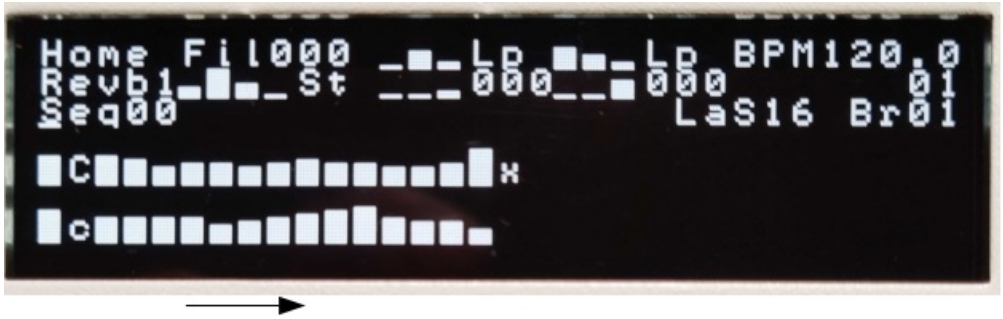
Midi Thru

- Serves to bypass Midi data from the Moonwind MK II to another Midi-capable device. The incoming Midi messages get passed through by hardware to the Midi Thru port without any change.

Editing the Sequencer

- Press the button SINGLE/SEQ. If the Moonwind MK II was in the quick edit screen of single mode before, the display switches to sequencer mode now.

The single preset quick screen remains in the display:



- The bars of various heights represent the values for the cutoff (or another parameter) which are played back at the steps of the sequence.
- Besides cutoff, the sequencer can record and playback Q and resonance as well.

START

- Starts the sequencer. Regardless of the Single/Seq mode the sequencer runs and shows the played steps by the flashing of the Start LED. You can still move the cutoff knobs and add the steady cutoff value to the sequence.

STOP

- Stops the sequencer.

RECORD

- Activates the real-time recording of Cutoff/Q/Res knobs movements while the sequencer is running.
- You can see the recorded changes as a bar graph only if you are in sequencer mode. With UNDO/EXIT you can undo up to 1000 edit steps.
- A record can only be activated if the sequencer is playing. The red LED next to the button lights up.
- Pressing the button again leaves the record mode.

Editing Sequences via Touchpad

- Go to Sequence Step Edit Mode by pressing STEP, and you can move the cursor with the touchpad and change the sequencer bars by moving up/down with your fingertip.
- Double-touching flips between the left and right sequences.

GAIN

- Controls the gain of the input. The Moonwind MK II can process almost any input level, from weak guitar signals to very high studio line levels of +20dBu.
- Please adjust the gain so that the neighbored Peak LED just does not light up yet.

DRY/WET

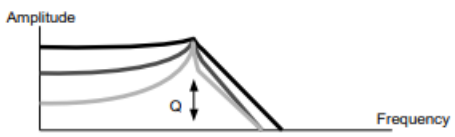
- Controls the mix between the direct signal and the effect amount. Turned whole to the left the output signal equals the input signal without effects (bypass), turned fully clockwise you get the pure effects signal.

VOLUME

- Controls the output level. The output is unbalanced and adjustable from -∞ to about max. +20 dBu.

Q

- The Q (Q = quality) adjusts the narrowness of the filter. A high value leads to a nosy filter adjustment, a small one to broadband sounding filter.
- At Resonance = 0, the filter will not self-oscillate but instead becomes extremely narrowbanded if Q is at maximum.



RES

- Adjusts the resonance of the filter. Opposing to most other synth filters the moonwind mk II has different settings for Q and Resonance.

- With resonance, the filter becomes able to self-oscillate and can produce a stable sine oscillation at the cutoff frequency. To make this happen, Q must be set higher than zero as well.

Touch Mode

- Whilst you are in Single Mode, double touch on the touchpad, and shortly „Touch Mode On“ will be prompted in the display.

- The screen empties and a dot follows your fingertip on the display. In the right half of the screen, you control the right-hand cutoff by right-left movement and the Q/Resonance by up/down movements.
- The left half applies to the left filter in the opposite direction regarding the cutoff.
- That makes the filters tweet and whistle at your fingertip, and you can expressively play the filter.

Recording Sequences via Touchpad

- If you want to record, just start the sequencer, and as soon as you touch the touchpad, the recording starts automatically. All movements get recorded into the sequencer. Fun!

LFO

- Press LFO1 or LFO2.

- With the LFO (Low Frequency Oscillator) you can create interesting modulations of the cutoff. Slowly uprising and fading filter sweeps up to tonal vibratos are possible.
- A large number of 64 waveforms is of your choice.
- If the filters are in self-resonance, you can create modulated sine waves with theLFOs which remember large modular systems.
- Turning the rate above 127 turns on Midi clock sync to the LFOs.

LFO sync modes

Abbreviation	One LFO Wave	Abbreviation	One LFO Wave
S32	1/32th note	S3t	1/32th -triplets
S16	1/16th note	S6t	1/16th -triplets
S8h	1/8th note	S8t	1/8th -triplets
S4h	1/4th note	S4t	1/4th -triplets
S2h	½ note	S2t	½ -triplets
S1B	1 bar	S1t	1 bar-triplets
S2B	2 bars		
S4B	4 bars		
S8B	8 bars		

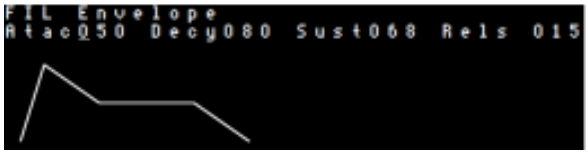
FIL Envelope / VCA Envelope

- Press ENV.
- The moonwind mkII has got a filter and a VCA envelope that can be triggered by a midi note event. The first note opens the envelopes and the last released note releases the envelope on played chords.
- So you can use the Moonwind mkII as a noise synthesizer or synth enhancement and add an analog filter to your synth if you audio route it through the MoonWind mkII and apply the same midi notes.
- Pressing ENV again toggles between the FIL and VCA envelope.

- You can adjust the typical ADSR parameters Attack, Decay, Sustain, and Release with the 4 encoders. The simple graphics follow the values.
- Please note that only the display is linear but not the physical signal that modulates the CV. It’s classic exponential.
- For the sake of simplicity it’s drawn with straight lines.

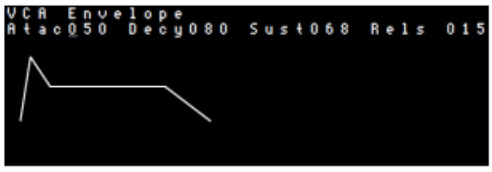
Filter Envelope

- The filter envelope works on both filters, but the modulation amount can be different for each filter.



VCA Envelope

- The VCA envelope controls the loudness curve of the final VCA (Voltage Controlled Amplifier). Please note that this strongly interacts with the parameter VCAm (VCA Amount).
- If VCAm is zero, only the envelope can open the VCA and the moonwind mkII is silent if no midi notes apply.
- If VCAm is opened to 127, the VCA envelope has no effect. The values between let the signal get through and add a little VCA loudness curve.
- Default-wise this value is fully opened because the moonwind mkII works as a standalone filter in the first place.

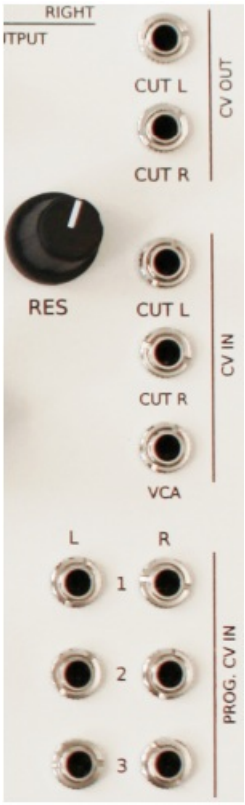


SHAPE L/ SHAPER

- This button changes the Shape (form) setting of the left or right filter. By pressing it again four different shapes step through. They are displayed in the OLED. There are four settings:

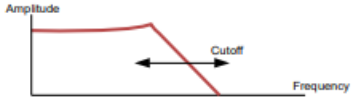
Lp (Low Pass)

- Only low frequencies up to the cutoff (corner) frequency get passed. The trebles are being cut off.
- This button changes the Shape (form) setting of the left or right filter. By pressing it again four different shapes step through. They are displayed in the OLED. There are four settings:



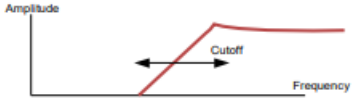
Lp (Low Pass)

- Only low frequencies up to the cutoff (corner) frequency get passed. The trebles are being cut off.



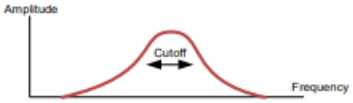
Hp (High Pass)

- Only the high frequencies down to the cutoff frequency get passed. The low frequencies are being cut off.



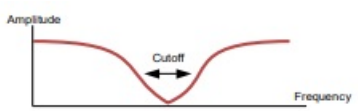
Bp (Band Pass)

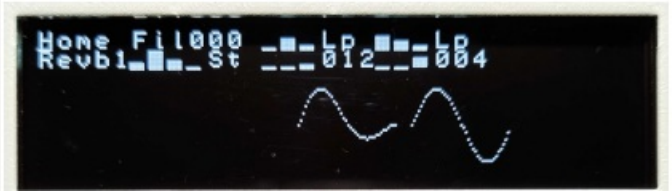
- Only frequencies within the pass band around the cutoff frequency get passed. The high and the low frequencies are being cut off.



Nt (Notch)

- All frequencies except the stopband around the cutoff frequency get passed. The band around the cutoff frequency is cut out.





Preset Selection

- By turning the DATA encoder you can recall a maximum of 256 preprogrammed sounds – a small number of them are factory presets.
- The number and the name are shown at scrolling.
- By clicking on the DATA knob the chosen preset gets loaded.
- A second way to choose presets is by stepping up or down with the Up/Down buttons.
- Now you don’t have to explicitly load the preset, it loads automatically.

Effects Program

- Press ALG.
- The effects processor of SPIN semiconductor offers 7 unchangeable ROM programs and 8 algorithms updateable via OS, which makes a total of 15 effects programs plus a test program without function.
- They can be chosen one after the other.

- On this page, you can select the effect program with the DATA encoder or the Up/Down buttons.
- Because the three available Fx parameters have a different meaning for each Fx program, their value description changes individually for every algorithm.

Firm algorithms of SPIN Semiconductor:

Algorithm	Parameter 1	Parameter 2	Parameter 2
Chorus+Reverb	Revb *(Reverb Level)*	Rate *(Chorus Rate)*	CMix *(Chorus Mix)*
Flanger+Reverb	Revb *(Reverb Level)*	Rate *(Flanger Rate)*	FMix *(Flanger Mix)*
Tremolo+Reverb	Revb *(Reverb Level)*	Rate *(Tremolo Rate)*	TMix *(Tremolo Mix)*
Pitch Shift	Ptch *(Pitch Shift)*	-- *(no function)*	-- *(no function)*
Pitch Echo	Ptch *(Pitch Shift)*	Dely *(Delay Time)*	Echo *(Repetition)*
Test no FX	-- *(no function)*	-- *(no function)*	-- *(no function)*
Reverb 1 (Open Reverb)	Time *(Reverb Time)*	HFil *(Reverb Highpass)*	LFil *(Reverb Lowpass)*
Reverb 2 (Dense Reverb)	Time *(Reverb Time)*	HFil *(Reverb Highpass)*	LFil *(Reverb Lowpass)*

Algorithms 8-16 of Jomox:

Algorithmus	Parameter 1	Parameter 2	Parameter 2
Stereo Delay *(Dual delay with cross feedback)*	TimL *(Delay time left)*	TimR *(Delay time Right)*	PPng *(Ping pong L/R)*
Delay + Chorus *(Mono delay with chorus)*	Time *(Delay time)*	Dmix *(Delay mix)*	Cmix *(Chorus mix)*
Wave Guide 1 *(Single pipe with filter)*	Pipe *(Pipe pitch)*	Rflx *(Reflexion coefficient)*	Filt *(Lowpass filter)*
Wave Guide 2 *(Dual pipe)*	PipA *(Pipe A pitch)*	PipB *(Pipe B pitch)*	Rflx *(Reflexion coefficient)*
Bit Crusher *(Bit cut, quantize and chorus)*	Bits *(Bit depth min:24 max:5)*	Quan *(Quantization bits mix)*	Chor *(Crushed+ chorus mix)*
Warp Tracker *(Scratch effect VCO tracking)*	Trac *(Tracking VCO)*	VCO *(VCO mix)*	Chor *(VCO+chorus mix)*
Warp 2 *(Four pipes, two filters with modulation)*	Pipe *(Pipes pitch)*	LFRt *(LFO rate)*	Warp *(Warp modulation)*
Formant Voxer *(Vocal formants with modulation and reverb)*	F1pt *(Formant 1 pitch 300-1000Hz)*	F2pt *(Formant 2 Pitch, relative to F1 Δ400Hz-3kHz)*	Revb *(Reverb mix)*

FX Feedback

- With this value, you change the FX feedback. If delay programs are activated, you can create beautiful tape delays and ping-pong echoes, as the filter output is fed back analogously and the signal is filtered a bit more with every run-through.
- You have to experiment with each FX program to get the desired result since every algorithm interacts differently with analog feedback.
- **Attention:** if FX Feedback is cranked up it may suddenly result in strong feedback when certain FX programs are chosen which might sound pretty awful!

CV Outputs

- CV OUT left and right of the internal cutoff CV. If you want to use the internal cutoff sequence to control an external device (for instance a VCO or another filter), connect it here.
- The CV follows all the internal filter modulations including the sequencer, FIL Envelope, and LFOs. Output 0-5 Volts.

CUT L CV IN

- CUT L = Left cutoff
- Adds the CV to the internal cutoff of the left filter. So you can modulate the modulations if you will.
- This external CV does not affect the internal CV processing and works only on the hardware filter output.
- The CUT L can be operated with negative CVs too, ranging from -5V to +5V.

CUT R CV IN

- CUT R = Right cutoff
- Adds the CV to the internal cutoff of the right filter. Works the same as CUT L above.

VCA CV IN

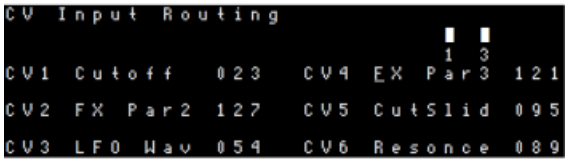
- VCA = final VCA (Voltage Controlled Amplifier)
- **This jack has a switching function:** unplugged the VCA is fully open and under the control of the Moonwind mkII OS, and as soon the plug is inserted the VCA only follows the applied CV.
- 0 Volt CV = VCA closed and no signal comes out. 5 Volt CV = VCA fully open and signal passes through.

Programmable CV IN

- Six CV input jacks are arranged in 2 columns.
- The L (left) column modulates the left filter parameters and vice-versa for the R (right) column. Besides the filter-related parameters, more parameters can be routed from both sides.

CV Input Routing Parameters

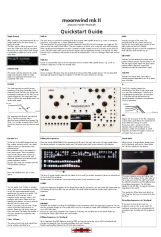
- You have to press SET L or SET R to program the assignments.



- For each CV input, you have a parameter that it routes to and an amount that goes from 0..127. If the amount is > 0 and a CV is applied to that jack, a bar appears, and the number of the CV jack.
- The height of the bar symbolizes the CV voltage multiplied by the amount, i.e. the resulting modulation depth of the destination parameter.

CV Parameter	Abbreviation	CV amount result	Applies
Cutoff	Cutoff	0..511	L/R
Q	Q	0..511	L/R
Resonance	Resonce	0..511	L/R
Filter Mode	Fil Mde	0..3	L/R
LFO Rate	LFO Rat	0..127	L/R
LFO Intensity	LFO Int	0..127	L/R
LFO Waveform	LFO Wav	0..63	L/R
FX Parameter 1	FX Par1	0..127	Global
FX Parameter 2	FX Par2	0..127	Global
FX Parameter 3	FX Par3	0..127	Global
FX Feedback	FXFeedb	0..127	Global
FX Algorithm	FX ALG	0..15	Global
Noise Volume	NoisVol	0..127	Global
Metallic Noise	MetalNz	0..127	Global
Cutoff Slide	CutSlid	0..31	Global
VCA	VCA	0..511	Global

Documents / Resources

	Moonwind mk II Analog Filter Tracker [pdf] User Manual mk II Analog Filter Tracker, mk II, Analog Filter Tracker, Filter Tracker, Tracker

References

- User Manual