# Doefper — A-148

- Manual PDF

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Manual PDF

# Doepfer A-148 Dual S&H — melodic uses

The attached manual is for the **Doepfer A-148 Dual Sample & Hold**. This module contains **two independent S&H circuits**, and on newer versions each half can be configured as **Sample & Hold** or **Track & Hold** via internal jumpers.

## What the module does musically

A sample & hold turns a changing control voltage into a series of stepped voltages. In melodic patching, that means it can create:

- **random notes**
- **stepped sequences**
- **clocked arpeggio-like patterns**
- **glissando broken into discrete notes**
- **per-note variation** in pitch or timbre

The A-148 is especially useful because it has **two sections**, so you can generate: - pitch + timbre together - melody + transposition - main sequence + countermelody - note CV + modulation CV from the same clock ecosystem

# Key behavior from the manual

## Inputs and outputs per section

Each half has:

- **Trig In** — decides when sampling happens
- **Smp In** — the voltage source to be sampled
- **S&H Out** — the held voltage output

## Trigger behavior

Sampling occurs on the **leading edge** of the trigger. So for melody generation, the trigger source is effectively your **rhythmic note change clock**.

## Voltage range

- Older version: proper sampling range is **-8V to +8V**
- Newer version: processes full **-12V to +12V**

## S&H vs T&H

On newer units: - **S&H**: samples at the trigger event, then holds - **T&H**: follows input while trigger is high, holds when trigger goes low

This matters melodically: - **S&H** gives clean stepped note changes - **T&H** can create more performance-like phrasing depending on gate length and source movement

The factory setting noted in the manual is: - upper section: **S&H** - lower section: **T&H**

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# How to use the A-148 for melody

## 1. Random melody generator

This is the classic patch described in the manual.

### Patch

- **Noise/random source → Smp In**
- **Clock/LFO/square wave → Trig In**
- **S&H Out → VCO 1V/oct** or other pitch CV input

### Result

Each trigger grabs a new random voltage, producing a different note each step.

### To make it musical

The raw result may be too wide in range. To make it more melodic:

- attenuate the sampled voltage before it reaches the oscillator pitch input
- offset it so notes sit in a desired register
- send it to a **quantizer** if available
- use a slower clock for sparse melodic movement
- use a faster clock for arpeggio-like lines

### Best use

- generative melodies
- ambient note streams
- pseudo-arpeggios
- aleatoric lines

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## 2. Clocked staircase from an LFO

The manual mentions that sampling an **LFO** produces rising or falling staircase patterns.

### Patch

- **Triangle or saw LFO → Smp In**
- **Clock pulse → Trig In**
- **S&H Out → VCO pitch**

### Result

Instead of random notes, you get a **predictable stepped contour**: - rising if sampling an upward ramp - falling if sampling a downward ramp - repeating patterns if the LFO and trigger have steady timing

### Musical value

This is one of the easiest ways to create: - repeating melodic cells - sequencer-like patterns without a sequencer - minimalist step motion - transposition curves

### Tip

Try changing the ratio between: - **LFO speed** - **trigger speed**

If they are related, you get repeating melodic loops. If not, you get longer evolving melodies.

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## 3. Quantized pseudo-sequencer

The A-148 becomes especially melodic when followed by a quantizer.

### Patch

- **LFO / random / mixed CV → Smp In**
- **Clock → Trig In**
- **S&H Out → Quantizer input**
- **Quantizer output → VCO 1V/oct**

### Result

The A-148 creates stepped voltages; the quantizer turns them into notes in a scale.

### Why it works well

Sample & hold gives the rhythmic structure of note changes, while the quantizer gives harmonic coherence.

### Great source voltages

- white noise for random scale notes
- slow triangle LFO for ascending/descending scalar motion
- slewed CV for broken glissandi
- mixed modulation sources for more complex phrases

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## 4. Glissando turned into notes

The manual shows a nice patch using a **slew limiter** and the A-148.

### Concept

A keyboard or sequencer pitch CV is slewed so it glides between notes. The A-148 then samples that glide at rhythmic intervals, turning one smooth slide into a **series of stepped intermediate notes**.

### Patch

- **Keyboard/sequencer pitch CV → slew limiter**
- **Slew output → A-148 Smp In**
- **LFO or clock → A-148 Trig In**
- **A-148 S&H Out → VCO pitch**

### Result

When moving between pitches, you hear discrete staircase notes instead of a continuous glide.

### Musical uses

- ornamental runs
- quantized-sounding portamento
- stepped lead transitions
- cascading fills between notes

### Performance tip

As the manual notes, the interaction between: - slew time - LFO/clock speed

determines the number and speed of the intermediate notes.

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## 5. Per-note pitch variation from keyboard gate

The manual gives an example of using a keyboard gate to trigger a new random filter setting per note. The same logic can be used melodically.

### Patch

- **Random CV → Smp In**
- **Keyboard gate → Trig In**

- **S&H Out** → pitch-related destination

### Result

Each played note triggers a new sampled voltage.

### Melodic uses

You can patch the output to: - oscillator FM amount - precision adder transpose input - second oscillator detune - wavefolder symmetry - filter cutoff tracking amount

This creates **note-by-note melodic variation**, even if your main sequence stays fixed.

### Especially useful for

- expressive basslines
- unstable lead lines
- evolving repeated motifs

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## 6. Two-channel melodic patching with both halves

Because the A-148 has two sections, you can create richer melodic systems.

## A. Pitch + timbre pairing

Use one half for pitch, the other for filter or wave shape.

### Patch

- Section 1:
- random/LFO CV → Smp In
- master clock → Trig In

- Out → quantizer → VCO pitch
- Section 2:
- different random source or same source
- same clock or divided/multiplied clock
- Out → filter cutoff / wavefolder / VCA CV

### Result

Every melodic step also gets a corresponding tone color shift.

This is extremely effective for making simple melodies feel composed.

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## B. Melody + transposition

Use one S&H for the base melody and the second as a slower transposition layer.

### Patch

- Section 1:
- faster clock
- source CV for note motion
- output → quantizer → VCO pitch
- Section 2:
- slower trigger
- random or slow LFO source
- output → adder / transpose input

### Result

The first section creates the active note stream; the second shifts the whole phrase up or down occasionally.

### Musical effect

- phrase-level harmonic movement
- longer-form structure

- evolving melodic repetition

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## C. Canon / counterline

Use both sections to drive two oscillators.

### Patch

- Both sections sample related but different sources
- Use shared or offset clocks
- Quantize both outputs
- Send to two VCOs or voices

### Result

You get: - a lead and response line - parallel melodies - harmonized lines - canonic patterns if one trigger is delayed or divided

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# S&H vs T&H for melodic purposes

If your version has jumper-selectable modes, this is worth exploiting.

## Sample & Hold

Best for: - crisp note changes - sequencer-like stepping - random melody generation - exact rhythmic note events

This is the standard melodic mode.

## Track & Hold

Best for: - gate-shaped phrasing - variations tied to gate length - sampled gestures rather than strict steps

In T&H mode, while the trigger/gate is high, the output follows the source. When it goes low, it freezes the last value. That can create:

- pitch gestures that move during the gate and freeze after
- expressive per-note curves
- unusual legato or held note behavior

For melodic work, T&H is especially interesting if the sampled source is: - a slow LFO - joystick/manual CV - envelope - slewed sequence

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# Patch ideas for actual musical results

## 1. Generative ambient melody

- white noise → A-148 Smp In
- slow clock → Trig In
- A-148 Out → quantizer → oscillator pitch
- second A-148 section → filter cutoff
- long envelope and reverb

Result: drifting, semi-random melodic lines.

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## 2. Berlin-school style stepped motion

- triangle LFO → Smp In
- regular clock → Trig In
- A-148 Out → quantizer → VCO pitch
- clock-synced filter envelope

Result: repeating stepped figures that feel sequenced.

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## 3. Melodic fills between played notes

- keyboard CV → slew limiter → A-148 Smp In
- medium LFO → Trig In
- Out → VCO pitch

Result: every note transition becomes a little staircase run.

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## 4. Controlled random bassline

- random source → Smp In
- clock divider output → Trig In
- Out → attenuator/offset → quantizer → bass VCO
- second section clocked slower → transpose bassline occasionally

Result: usable random bass movement with phrase variation.

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## 5. Per-step ornamentation

- sequencer row → main oscillator pitch
- A-148 random output → second oscillator fine pitch or FM index
- same gate/clock triggers the A-148

Result: the sequence stays recognizable, but each note gets a slightly different melodic color.

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# Practical advice

## Keep pitch under control

Raw S&H voltages can be too wide for musical pitch. To make the A-148 more useful melodically, pair it with:

- attenuators
- offsets
- quantizers
- precision adders
- slew limiters

## Choose trigger sources intentionally

Your trigger defines when notes change. Good sources include:

- LFO square waves
- clock outputs
- sequencer gates
- keyboard gate
- clock dividers
- trigger patterns

## Use correlated sources for more coherent melodies

If you sample: - a triangle LFO, you get smooth contour-based melodies - noise, you get fully random notes - a slewed sequence, you get structured variations - another sequencer CV row, you get derived melodies

### Repetition comes from timing relationships

To make phrases feel musical rather than chaotic, tune the relationship between: - source CV speed - trigger speed - quantizer scale - transposition rate

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# Best “used together” melodic roles inside a system

Since this manual covers one dual module, the best internal “used together” approach is to treat the two halves as a small melodic engine:

1. **Upper A-148**: create main stepped pitch CV
2. **Lower A-148**: create slower transposition or timbre modulation
3. Use a common clock or related divided clocks
4. Quantize the pitch path
5. Send the second path to filter, wave shape, or pitch offset

That gives you a compact patch capable of: - melody - variation - phrase development - note-by-note timbral articulation

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# Summary

The **Doepfer A-148 Dual S&H** is very strong for melodic patching when used as a voltage step generator. It can create:

- random melodies from noise
- staircase sequences from LFOs
- stepped glissandi from slewed pitch CV
- per-note modulation changes from gates
- two-layer melodic systems using both sections

Its two channels make it especially good for pairing **pitch and expression**: one side handling note selection, the other handling transposition or

timbral movement. Add a quantizer and clock source, and it becomes a powerful generative melody tool.

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