

WMD – Skorpion

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WMD Skorpion – Using It to Create Melodic Components

Skorpion is not just a wavfolder. It's really a **waveform-generation and transformation system** with built-in comparator logic, target sequencing, modulation, and stereo processing. That means it can contribute to melody in several different ways:

- as a **timbre shaper** for pitched oscillators
- as a **pitched voice** enhancer with good tracking via **1V/OCT**
- as a **sequenced control-voltage source**
- as a **rhythmic/melodic modulation generator**
- as a **stereo melodic texture builder**

Since only one module/manual is attached here, I'll focus on how the **internal sections of Skorpion work together** to produce melodic material.

1. Big picture: why Skorpion is useful for melody

At its core:

- **IN** receives a waveform
- the signal is compared against up to **8 thresholds**
- each threshold crossing changes the behavior of the **vector core**
- the vector core moves toward a **target voltage**

- the movement speed is set by **SLOPE**
- **SHAPE** bends that movement with feedback/modulation sources
- **TRGTs** can act like an **8-step destination sequencer**
- **1V/OCT** lets slope track pitch relationships more consistently

So instead of just “distorting” a note, Skorpion can turn a simple oscillator into a **structured melodic voice** whose partials, contour, and even segment-by-segment behavior respond to pitch and threshold crossings.

2. Most direct melodic use: process a VCO into a playable voice

Basic patch

- Patch a **VCO sine or triangle** into **IN**
- Send your keyboard/sequencer pitch CV to:
 - the VCO's **1V/OCT**
 - Skorpion's **1V/OCT**
- Take **OUT L** or **OUT R** to your mixer/VCA/filter

Why this works

The manual notes that **1V/OCT controls slope and is necessary for equal timbre across different notes**. That is a big clue: if you want a melodic line where the character stays relatively consistent as pitch changes, you should track both the oscillator and Skorpion together.

Good starter settings

- **FOLD**: low to medium
- **SLOPE**: medium
- **SHIFT**: noon
- **TARGET**: between **CLIP** and **5V**
- **SHAPE**: noon initially
- **EQUALIZE THLDS**: ON for more classic, harmonically stable folding

- **SYNC**: SOFT or HARD if you want tighter periodic behavior

Result

You get a more playable, controlled melodic voice than wild random folding.

This is the best place to start if your goal is **leads, basses, or arpeggios**.

3. Use the thresholds and targets together as a melodic articulation system

A key melodic feature of Skorpion is that the **sliders can define thresholds or targets**, and the **targets form an 8-step voltage-controlled sequencer**.

What this means musically

Each time the input crosses thresholds, the vector core can be redirected toward a different voltage. That can make one incoming oscillator produce **different segment shapes within each cycle**, which changes perceived pitch color, attack profile, and overtone emphasis.

Patch concept: “sequenced timbre melody”

- Send a steady pitched waveform to **IN**
- Set **TARGET** toward **SLIDERS**
- Hold spring toggle left and program **TRGTs**
- Set **TARGET ORDER**:
- **SEQ** for ordered progression by active-threshold count
- **TIED** for behavior tied to the most recently crossed threshold

Musical result

Instead of a static folded tone, each waveform cycle can move through a **mini-sequence of destination voltages**. This often sounds like: - animated vowel-ish leads - stepped harmonic changes within a note - pseudo-wave-table melodic movement

This is especially powerful for **melodies with long sustained notes**, because the note itself contains internal motion.

4. Use Skorpion as a melodic CV sequencer

The manual explicitly states that the **TRGTs output jack** gives direct connection to the target sequencer and can be used as: - an **8-step wavetable oscillator** - a modulation source for other parameters

That means Skorpion can generate control voltages related to threshold activity.

Patch concept: derive melody from audio

- Patch an oscillator or complex modulation source into **IN**
- Program the **TRGT sliders** with 8 voltages
- Patch **TRGTs OUT** to:
 - another oscillator's **1V/OCT** for stepped melody
 - a quantizer, then to **1V/OCT**
 - filter cutoff for melodic contour-like motion

Best supporting settings

- Use **TARGET ORDER = SEQ** for more predictable progression
- Use **EQUALIZE THLDs ON** if you want more regular threshold spacing
- Use a simple periodic waveform at **IN** for stable repeated patterns
- Use **SYNC** for more repeatability

Musical result

Skorpion becomes a kind of **audio-driven step sequencer**.

The pitch sequence is not clocked traditionally; it is generated by the way the input crosses thresholds.

This is excellent for: - self-playing generative melodies - deriving related melodic lines from one root oscillator - turning audio rate motion into quantizable step patterns

5. Use the auxiliary outputs as melodic sources

Several outputs can be used to build melody or melody-adjacent modulation.

TRGTs OUT

Best direct melodic source.

Use it for: - pitch CV into a quantizer - FM index changes per threshold segment - transposition patterns

COUNT output

A staircase from **0–4V**, each active threshold adding **0.5V**.

Use it for: - quantized melodic steps - transposition levels - driving a sequential switch or quantizer

Because COUNT is evenly stepped, it is often easier than TRGTs when you want **structured interval motion**.

DAC output

A weighted version of count, like a binary-weighted aggregate of threshold states.

Use it for: - more nuanced pseudo-melodic CV - irregular melodic intervals - probabilistic-feeling pitch movement after quantization

DIFF output

Difference between target voltage and current vector core state. It slopes toward 0V and is harmonically rich.

Use it for: - audio-rate FM of another oscillator - highly animated pitch-adjacent modulation - per-note transient pitch effects

Not ideal as a clean pitch source, but excellent for **expressive melodic instability**.

G(IN>0) and ±G(DIR)

These are gate/bipolar gate outputs.

Use them for: - triggering envelopes in sync with waveform polarity - clocking sequencers/dividers - switching melodic destinations - transposition logic

A melodic patch becomes far more interesting if pitch changes are coordinated with these gate-derived events.

6. Best melodic patch types

A. Stable lead voice

Goal: playable lead with harmonic animation

- VCO saw/triangle → **IN**
- pitch CV → VCO **1V/OCT** and Skorpion **1V/OCT**
- **OUT L/R** → VCA → mixer
- **EQUALIZE THLDs ON**
- **TARGET = 5V** or slightly toward **SLIDERS**
- **SYNC = SOFT**
- moderate **FOLD**
- low/moderate **SHAPE**

Why:

Equal thresholds and 1V/OCT tracking keep timbre more consistent note-to-note.

B. Melodic bass with pulse-like articulation

Goal: bassline with internal square-ish segments

- Triangle VCO → **IN**
- **HALT IF TARG=0 ON**
- Set some **TRGT sliders** to bottom (0)
- **TARGET** toward **SLIDERS**
- **TARGET ORDER = TIED**
- **SHIFT** near noon
- **OUT** → lowpass filter/VCA

Why:

When a target is 0, that segment can halt, creating square-ish plateaus. On bass notes this gives strong, punchy, melodic articulation.

C. Audio-driven sequencer for melody

Goal: turn one oscillator into pitch sequence data

- Clocked or tuned VCO/LFO → **IN**
- Program **TRGT sliders** as a pitch pattern
- **TRGTs OUT** → quantizer → another VCO **1V/OCT**
- Optional: **G(IN>0)** or **±G(DIR)** to trigger envelopes

Why:

Threshold crossings select targets, yielding a repeating but timbrally linked melodic pattern.

D. Counter-melody from COUNT

Goal: related second voice

- Main melody oscillator → **IN**
- **COUNT OUT** → quantizer → second oscillator **1V/OCT**
- Main processed signal from **OUT**
- Second oscillator mixed alongside

Why:

The second oscillator follows threshold-activity complexity of the first voice, producing a companion melodic line.

E. Stereo melodic texture / pad

Goal: wide evolving harmonic line

- Slow melodic oscillator or sequence → **IN**
- **OUTPUT** past noon toward **WIDE**
- **OUTPUT SWITCH = FILTERS**
- Add slow modulation to **SHIFT** or **SHAPE**
- Use **DELAY OUT** as extra modulation or audio layer

Why:

Skorpion's stereoizing network and delay turn a simple melody into a spatial melodic texture, especially useful for ambient or cinematic patches.

7. How the controls affect melody specifically

FOLD

This changes how strongly the input is pushed into the comparator/threshold system.

For melody: - lower values preserve pitch clarity - higher values produce brighter, more aggressive harmonic intervals - extreme modulation can obscure pitch, but also create vocal leads

Use moderate amounts if note identity matters.

SLOPE

Very important for melodic behavior.

For melody: - lower slope = smoother, darker, more filtered behavior - higher slope = brighter, more harmonically dense - with **1V/OCT**, slope can track pitch for more consistent timbre

This is one of the most important controls for keeping the module “musical” across a melodic range.

SHIFT

Adds asymmetry by offsetting the input against thresholds.

For melody: - subtle shift = richer odd/even harmonic variation - slow modulation = frequency-shift-like movement - too much can destabilize symmetry and pitch feel

Excellent for expressive melodic phrasing.

TARGET

Changes where the vector core is trying to go.

For melody: - **5V** gives more square, defined waveforms - **CLIP** overlays behavior with the input waveform - **SLIDERS** opens up sequenced internal motion

For melodic purposes, this is one of the strongest “personality” controls.

SHAPE

Feedback-based slope modulation.

For melody: - **OUT** source can create log/exp contour shaping - **IN** source tracks the incoming waveform - **DIFF** gives harsh, transient-rich sounds - **TRGTs** makes segment-by-segment shaping possible

If the patch is too wild, return SHAPE toward noon.

8. Use the macro system to animate melodies over time

Skorpion's **Macro Setup** can internally modulate: - thresholds - fold - slope - shift - shape

The macro envelope is an attack/sustain/release envelope controlling LFO amplitude system-wide.

Why it matters for melody

You can make each note or phrase evolve in a repeatable way without external modulation sources.

Useful ideas

Per-note timbre bloom

- Enable macro envelope
- Assign an **ENV** or **LFO** to **FOLD**
- Trigger macro via **MACRO ENV jack**

Result: notes open up harmonically over time.

Phrase evolution

- Slow **THLD LFOs**
- moderate **THLD LFO amount**

- macro envelope with long attack/release

Result: threshold positions drift gradually, causing recurring melodies to subtly change contour over bars.

Dynamic articulation

- Assign **ENV** to **SLOPE**
- Assign **LFO** to **SHIFT**

Result: each note starts one way and evolves into another, like acoustic phrasing.

For melodic patches, the macro system is especially useful because it creates **repeatable motion** rather than random chaos.

9. Sync, dry-if-no-thresholds, and equalized thresholds: important “musicality” switches

EQUALIZE THLDS

For melody, this is often the secret weapon.

- Makes thresholds evenly spaced
- Sounds more like a classic wavefolder
- gives more regular, predictable overtone behavior

Use this when you want: - tonal consistency - easier tuning of timbral character - less surprise across melodic intervals

DRY IF NO THLDS

If no thresholds are active, output becomes the dry signal and the vector core follows input.

Use this when: - heavily modulating FOLD - you want to guarantee audible signal on every note - you want safer live-performance melodic behavior

This helps avoid patches where some notes disappear.

SYNC

Resets the vector core at zero crossings.

- **SOFT**: smoother, more natural
- **HARD**: more precise, more aggressive
- **X**: freer, less controlled

For melodic clarity, **SOFT** or **HARD** usually helps, especially on bass or leads.

10. Melodic self-patching ideas

Skorpion is particularly strong when self-patched.

TRGTs OUT → SHAPE CV

This creates segment-dependent contour changes.
Good for animated leads.

COUNT OUT → SHIFT CV

As more thresholds are active, asymmetry changes.
Good for dynamic melodic phrasing.

DAC OUT → TARGET CV

Makes destination voltage respond to threshold-state complexity.
Good for pseudo-chaotic melodic motion.

±G(DIR) → external switch or logic

Use direction to alternate between two melodic destinations.

ABS(IN) OUT → FOLD CV or another oscillator FM

Creates full-wave-related modulation tied to input pitch.

These kinds of self-patches can produce **internally coherent melodies**, because the modulation derives from the same waveform that generates the sound.

11. Best external module pairings for melody

Skorpion works especially well with:

- **stable analog or digital VCOs**
for a predictable input waveform
 - **quantizers**
because TRGTs, COUNT, and DAC outputs become very musical once snapped to scale
 - **sequencers**
to drive the source oscillator while Skorpion adds internal sub-structure
 - **VCAs and envelopes**
to shape the rich outputs into articulated notes
 - **filters**
to tame brighter settings for bass and lead work
 - **logic/clock utilities**
to use $G(IN>0)$ and $\pm G(DIR)$ for melodic event generation
 - **second oscillator**
for counterpoint driven by TRGTs/COUNT/DAC
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12. Practical melodic recipes

Recipe 1: Singing lead

- Sine VCO into IN
- pitch CV muted to VCO + Skorpion 1V/OCT
- Equalize THLDs ON
- Sync SOFT
- Target near CLIP
- Small SHAPE from OUT
- Slight SHIFT modulation

This gives a vocal, expressive lead with strong pitch focus.

Recipe 2: Metallic arpeggio

- Triangle or saw into IN
- Target to SLIDERS
- Program alternating high/low TRGTs
- Target order = SEQ
- COUNT out to quantizer for second oscillator
- Output wide with FILTERS

This yields one bright animated arp plus a derived second melodic line.

Recipe 3: Bass with internal steps

- Triangle in
- Sync HARD
- Slope medium-high
- Halt if targ=0 ON
- Some TRGT sliders at 0, others high
- Filter after output

This creates stepped, assertive bass tones.

Recipe 4: Generative melody machine

- Cycling LFO or oscillator in
- THLD LFO amount up
- Slow THLD LFO rate
- TRGTs out to quantizer
- G(IN>0) to envelope trigger
- Processed output mixed quietly under the quantized voice

This makes Skorpion both the sound source modifier and the melodic CV engine.

13. Overall assessment

For melodic music, Skorpion is best understood as a hybrid of:

- wavefolder
- comparator-based control system
- vector oscillator core
- 8-step target sequencer
- modulation generator
- stereo texturizer

Its strongest melodic roles are:

1. **tracking timbre processor for an oscillator voice**
2. **internal sequenced waveform shaper**
3. **source of pitch-capable stepped CV via TRGTs/COUNT/DAC**
4. **generator of related counter-melodies and phrase modulation**

If you want traditional clean subtractive melody, Skorpion is not the shortest path.

If you want **melodies with internal movement, harmonic articulation, and derived companion CV**, it is extremely powerful.

Best first melodic patch to try

If you only try one:

- Oscillator → **IN**
- pitch CV → oscillator + **Skorpion 1V/OCT**
- **EQUALIZE THLDs ON**
- **SYNC SOFT**
- **TARGET** midway between **CLIP** and **SLIDERS**
- program a simple rising/falling **TRGT** pattern
- take **OUT L** as your main voice
- send **COUNT OUT** to a quantizer and then to a second oscillator

That gives you: - a main melodic voice - sequenced internal timbre motion - a derived counter-melody

That's where Skorpion really shines musically.

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