Schlappi Engineering — Three Body

- Manual PDF

Three Body Manual (Schlappi Engineering)

Using the Schlappi Three Body for melodic music

The **Three Body** is a 3-oscillator digital modulation complex oscillator focused on **phase modulation, linear FM, ratio relationships, and stereo motion**. For melodic use, its big strength is that the three oscillators can behave either as:

- **independent VCOs/LFOs**
- **ratio-locked harmonic oscillators**
- **cross-modulating carriers/modulators**
- **a stereo melodic voice with internal normalization**

That makes it especially good for:

- harmonic lead voices
- metallic but tunable FM tones
- animated basses
- chord / pseudo-paraphonic interval structures
- arpeggiated ratio melodies
- tempo-locked melodic modulation

What the module fundamentally is

Three Body contains:

- **1 center oscillator**
- **2 outer oscillators**

Each oscillator can run in:

- **FREE mode**
  Like a normal oscillator/LFO with pitch controlled by coarse/fine and V/oct.

- **RATIO mode**
  The oscillator tracks another oscillator or external sync input at a **multiplied or divided ratio**.

Each oscillator also supports modulation:

- **phase modulation**
- **frequency modulation**
- **sync / tracking**

The center oscillator is special because it has:

- **sine + cosine**
- **saw + cosaw**
- dual phase inputs from the two outer oscillators
- especially strong stereo applications

Why this module is musically useful for melody

For melodic work, the key manual points are:

1. **Outer oscillators can track the center oscillator in ratio mode** with no cable inserted into their sync jacks.

2. This creates stable **musical intervals and harmonic series relationships**.
3. The center oscillator can remain your pitch reference while the outer oscillators become:
4. harmonics
5. subharmonics
6. changing interval voices
7. FM operators
8. The module supports **1V/oct on the transpose and individual V/Oct/Ratio inputs**, so it can still play from sequencers and keyboards.
9. You can modulate the ratio CV inputs for **melodic interval animation**, not just timbre.

In practice, it can behave like:

- a **3-oscillator harmonic voice**
- a **DX-style operator cluster with analog patchability**
- a **subharmonic chord machine**
- a **stereo melodic oscillator**

Most important melodic patching ideas from the manual

1. Harmonic interval voice

This is the most immediately musical use.

Patch

- Set **center oscillator** to:
- **FREE**
- **HIGH**
- Patch your sequencer pitch CV to **TRANSPOSE**
- Set one or both **outer oscillators** to:

- **RATIO**
- Listen to:
- center sine/triangle
- one or both outer sine outputs

Result

The center oscillator plays the melody.
The outer oscillators become interval voices related by integer multiply/divide settings.

Musical use

You get:

- octaves
- fifths
- fourths
- more complex overtone relationships
- moving chord-like stacks from a single pitch line

Good settings

With divide at 1 and multiplication changing: - 1:1 unison - 2:1 octave - 3:2 fifth-ish relationships depending on settings - harmonic series climbing

This is ideal for:

- bass + upper harmonic
- drone melodies
- simple two-note harmonization
- pseudo chords from one sequencer lane

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2. Subharmonic melody generator

The manual makes clear that in ratio mode the oscillators can also **divide**.

Patch

- Center oscillator = **FREE, HIGH**
- Outer oscillator(s) = **RATIO, DIV**
- Sequence the center from **TRANSPOSE**
- Take audio from outer oscillators

Result

Instead of upper harmonics, you get **subdivided pitch relationships**. This can feel like:

- suboctaves
- undertone series
- organ-like interval structures
- Subharmonicon-style harmonic motion

Musical use

Great for:

- dark bass lines
- medieval/drone harmony
- thick mono leads
- pseudo counterpoint from one CV source

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3. Ratio-CV arpeggiation

One of the most interesting melodic functions in the manual: feed CV into the **V/OCT RATIO** input of an outer oscillator.

Patch

- Center oscillator = melodic source in FREE mode
- Outer oscillator = RATIO mode
- Send a slow stepped CV, envelope, or sequencer row into **outer V/OCT RATIO**

- Attenuate carefully

Result

The outer oscillator changes multiplier or divider values, creating **discrete interval jumps** relative to the center pitch.

Musical effect

This creates:

- arpeggiation
- harmonic melody doubling
- interval sequencing
- pseudo chord inversions

If modulation is subtle, it can hop between a few ratio values and feel like a musically locked harmony line.

This is one of the strongest ways to get **melodic movement without repitching the root**.

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4. Three-note harmonic stacks from one sequence

Because all oscillators can be heard independently, Three Body can produce three related musical lines.

Patch

- Sequencer CV to **TRANSPOSE**
- Center oscillator = **FREE**
- Left oscillator = **RATIO**
- Right oscillator = **RATIO**
- Use different mult/div settings on left and right
- Take all three sine outputs into a mixer

Result

A single melodic line becomes a 3-voice interval stack.

Musical use

This gives: - instant triad-ish structures - open fifth drones - stacked harmonics - organ/register sounds

It won’t always map to equal-tempered harmony in a traditional way, because ratio relationships are just intonation/harmonic-based rather than fixed semitone transposition. But that’s often exactly why it sounds rich.

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5. Stereo melodic voice

The center oscillator has special outputs:

- **SINE**
- **COSINE**
- **SAW**
- **COSAW**

The manual explains that these are phase-related outputs designed for wide stereo use, especially under phase modulation.

Patch

- Use center **SINE** to left channel
- Use center **COSINE** to right channel
- Or use **SAW / COSAW**
- Bring up **PHASE INDEX 1** and **PHASE INDEX 2**
- Let outer oscillators modulate the center

Result

A single melodic line becomes a **wide stereo voice** with internal timbral animation.

Musical use

Excellent for:

- leads
- pads
- drones
- melodic ambient voices
- stereo bass textures

This is especially nice because you can keep the melody simple while the timbre blooms around it.

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6. Tuned FM voice

The manual strongly supports **linear FM in ratio mode** for harmonic sounds.

Patch

- Center oscillator = base pitch source
- Outer oscillators = **RATIO + LIN FM**
- Outer oscillators tuned above center with mult settings
- Listen to outer sine outputs
- Bring up their **FM INDEX**
- Optionally modulate FM index with envelopes

Result

You get classic **tuned FM sidebands** with better harmonic stability when simple ratios are used.

Musical use

This is ideal for:

- bells
- electric piano-ish tones

- glassy leads
- metallic basses
- plucked digital tones

The manual notes an important rule:

- for harmonic audio-rate modulation, use **simple ratios**

So melodic patches are strongest when carrier/modulator relationships are kept simple.

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7. Animated timbre while pitch stays stable

A major musical advantage of **phase modulation** over FM, according to the manual, is that PM avoids some pitch drift and DC-offset pitch problems.

Patch

- Center oscillator is your audible melodic output
- Outer oscillators modulate center via **PHASE 1** and **PHASE 2** normalization
- Sequence only the center with **TRANSPOSE**
- Use the outer oscillators either:
- ratio-locked for harmonic PM
- or free-running for more unstable colors

Result

The melody remains more stable while timbre shifts dramatically.

Musical use

This is ideal when you want:

- recognizably pitched melody
- evolving harmonics
- strong articulation without filter reliance

It’s a very effective way to create expressive melodic phrases that sound “complex oscillator” but remain playable.

Internal normalizations that matter for melodic patching

The manual describes several normalizations that make melodic patching easy without many cables.

Modulation normalization

- **Center oscillator PHASE inputs** are normalized from the two outer sine outputs
- **Outer oscillator FM inputs** are normalized from the center oscillator:
- left gets center sine
- right gets center cosine
- **Outer oscillator PHASE inputs** are normalized from the opposite outer sine

Ratio normalization

- Outer oscillators in **RATIO mode** track the center oscillator if no cable is inserted in their sync inputs

Why this matters

This means you can quickly get:

- a harmonic 3-oscillator voice
- stereo FM pair
- center-carried melody with outer interval tones
- cross-modulated harmonic stack

without much patching.

Best melodic roles for each oscillator

Center oscillator

Best as: - root pitch - main melodic oscillator - stereo voice source - PM target - master for harmonic tracking

Use outputs: - **sine/cosine** for cleaner stereo melody - **saw/cosaw** for richer harmonic material - **triangle** for a middle-ground tone

Outer oscillators

Best as: - harmony oscillators - FM carriers - PM modulators - ratio-derived intervals - subharmonic voices

Use outputs: - **sine** for cleaner FM/melodic tones - **saw/triangle/square** for more aggressive layered voicing

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Practical melodic patch recipes

Patch 1: Simple harmonic lead

- Center: FREE / HIGH
- Left: RATIO / MULT
- Right: RATIO / MULT
- Sequencer to TRANSPOSE
- Mix center sine + left sine + right sine
- Set outer ratios to octave/fifth-ish relationships

Sound: harmonically rich mono/stereo lead from one sequence.

Patch 2: Subharmonic bass melody

- Center: FREE / HIGH
- One outer oscillator: RATIO / DIV
- Sequence center pitch from TRANSPOSE
- Listen mainly to the divided outer oscillator plus some center sine

Sound: deep, organ-like bass with strong tonal center.

Patch 3: Melodic stereo PM lead

- Center: FREE / HIGH
- Outer oscillators: RATIO
- Listen to center **SINE + COSINE**
- Raise **PHASE INDEX 1/2**
- Sequence center with TRANSPOSE

Sound: wide stereo melodic voice with animated timbral motion.

Patch 4: FM pluck / bell

- Center: lowish pitch
- Outer oscillators: RATIO + LIN
- Divide fully down, multiply above noon
- Listen to outer sine outputs
- Envelope into **FM INDEX**
- Sequence pitch with TRANSPOSE

Sound: tuned digital percussion, mallets, bells, sharp plucks.

Patch 5: Arpeggiated interval companion

- Center sequenced melodically
- Right oscillator in RATIO
- Stepped CV into right **V/OCT RATIO**
- Heavily attenuate
- Mix center + right outputs

Sound: one melody plus automatically shifting interval accompaniment.

Patch 6: Pseudo chord machine

- Center sequenced
- Left in ratio-div
- Right in ratio-mult
- Tune by ear to consonant relationships
- Mix all three outputs

Sound: evolving 3-note harmonic structures from one CV line.

Melodic strategy: when to use FREE vs RATIO

Use FREE mode when you want:

- traditional VCO behavior
- exact sequencer tracking
- independent pitch lines
- LFO duties
- looser, less locked harmonic behavior

Use RATIO mode when you want:

- consonant interval relationships
- harmonic series control
- subharmonic structures
- stable audio-rate modulation
- one oscillator to derive melody-related voices from another

For melodic composition, **RATIO mode is the secret weapon**.

How to keep it musical

The manual gives several strong hints.

1. Use simple ratios

For harmonic results: - 1:1 - 2:1 - 3:2 - 4:3 - 5:4 - 6:5

These make FM/PM spectra feel pitched rather than chaotic.

2. Keep cross modulation moderate

Too much cross phase modulation can become: - noisy - shrieking - unstable

A little adds life; too much destroys note identity.

3. Linear FM is strong

The manual says linear FM is amplified strongly internally. Small knob movements can have a big effect.

For melodic use: - start low - increase slowly - use envelopes on index rather than constant high depth

4. Phase modulation is better for stable pitch color

If you want the note center to remain more obvious while adding harmonics, use PM rather than deep FM.

5. Use sine outputs first

For tuning and harmonic listening: - start with sine outputs - move to saw/cosaw later if you want more bite

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External tracking for melodic systems

The manual also notes that in **RATIO mode**, inserting an external signal into **SYNC** lets an oscillator track that external source.

Musical uses

You can use this to: - harmonize another oscillator in your system - derive intervals from an external VCO - create tempo-locked LFO divisions/multiplications - build harmonic layers around another module's voice

Important caveat

Tracking is best with: - simple waveforms - monophonic sources - steady signals

For audio harmonization, period tracking is preferred over PLL.

Good compositional uses in a eurorack patch

As a lead voice

Use center sine/cosine stereo pair, outer oscillators as ratio PM sources.

As a bass voice

Use center as root, outer in divide mode for subharmonics, maybe add a little PM for growl.

As a chord source

Use all three oscillators mixed together with different ratios.

As an FM melody generator

Use outer oscillators as linear FM carriers and center as common modulator.

As an accompaniment generator

Use one sequencer lane into transpose, then animate outer ratio CV inputs for shifting harmonies.

As a drone/melodic hybrid

Sequence the center slowly, let outers track at ratios, cross-modulate lightly.

Limitations to be aware of

Based on the manual:

- It is **not** a conventional equal-tempered chord oscillator.
- Ratio relationships are often **just-intonation / harmonic** rather than semitone-quantized.
- Deep FM or cross modulation can easily become:
- noisy
- unstable
- inharmonic
- Audio-rate FM wants the modulator lower than the carrier for expected behavior.
- Heavy PM can become wavefold-like and noisy.

These are not flaws—they are the character of the module.

Best overall melodic workflows

Workflow 1: One-sequence harmonic voice

1. Sequence TRANSPOSE
2. Center in FREE
3. Outer oscillators in RATIO
4. Mix three outputs
5. Adjust mult/div for harmonic intervals

This is the most straightforward melodic use.

Workflow 2: Stereo melodic timbre voice

1. Sequence center oscillator
2. Listen to center sine/cosine
3. Outer oscillators modulate center phase
4. Keep ratios simple

5. Use envelopes on indexes

This gives an animated modern melodic sound.

Workflow 3: FM operator cluster

1. Center as modulator
2. Outer oscillators as ratio-locked carriers
3. Listen to outer sines
4. Envelope FM index
5. Tune ratios musically

This is the most “digital synth” style use.

Bottom line

The **Schlappi Three Body** is extremely strong for melodic composition if you think of it as a **harmonic relationship generator**, not just a weird modulation oscillator.

Its most musical strengths are:

- **ratio-locked harmony**
- **subharmonic and overtone interval creation**
- **stereo phase-modulated melodic voices**
- **tunable FM tones**
- **one-sequence-to-many-related-pitches patching**

If you want, I can also turn this into:

1. a **“best melodic patches” cheat sheet**,
2. a **signal-flow diagram**, or
3. a **genre-oriented guide** like *techno / ambient / electro / soundtrack* uses for Three Body.

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