Intellijel — Unity

- Manual PDF

Unity Mixer Manual (PDF)

Intellijel Unity Mixer — melodic use in a Eurorack system

The **Intellijel Unity Mixer** is a very simple but very useful utility for building melodic patches. It is a **dual 3:1 unity-gain mixer**, or a **single 6:1 mixer** if the top output is left unpatched.

Because it works with **CV or audio**, it can help with melody creation in two main ways:

1. **Combining pitch-related CV sources**
2. **Combining audio signals that form layered melodic voices**

What the module does

Basic structure

- **Top section:** inputs **1, 2, 3** summed to output **4**
- **Bottom section:** inputs **5, 6, 7** summed to output **8**
- If **output 4 is unpatched**, the top mix is internally sent to the bottom mixer, turning it into a **6:1 mixer** with final output at **8**

Important behavior

- It is **unity gain**: signals are **summed but not attenuated or amplified**
- Outputs are **phase correct** (non-inverting)
- Works for **audio or CV**
- **Maximum output voltage: 10.5 V**
- Above that, it can **clip**
- Rear jumpers can set either mixer to **-6 dB attenuation** for more headroom

---

How it helps create melodic components

1. Build pitch CV from multiple sources

This is one of the most musically useful roles for a unity mixer.

In Eurorack, melodic pitch often comes from several CV layers added together: - a **main pitch sequence** - a **keyboard or transpose offset** - **octave offsets** - a **vibrato or slow pitch modulation** - a **slewed variation** - a **quantized random source**

The Unity Mixer lets you **add these together into one pitch stream**.

Example patch: transposable melody

Patch: - **IN 1:** sequencer pitch CV - **IN 2:** keyboard/manual voltage offset or precision adder-style transpose source - **IN 3:** slow LFO through attenuation for subtle vibrato - **OUT 4:** to oscillator 1V/oct input

Result: - Your melody plays from the sequencer - The second CV transposes it - The third adds expressive movement

Musical note

Because this is a **plain summing mixer**, it does not quantize or scale pitch. So for precise melodic work: - use already-scaled pitch CV - attenuate modulation before mixing if needed - ideally place a **quantizer after the mixer** if the sources aren't pitch-accurate

---

2. Create interval stacks and harmonized lines

You can use the module to sum several fixed voltages or tuned offsets into a melodic line.

Example patch: harmony shaping

Patch: - **IN 1:** main pitch sequence - **IN 2:** offset voltage representing a fixed interval - **IN 3:** manual offset for octave switching - **OUT 4:** to a quantizer, then oscillator

Result: - The mixed voltage can generate melodic lines with harmonic movement - Sending the sum into a quantizer helps "lock" the combined voltages to a scale

This works especially well for: - transposed basslines - modal melody shifts - octave jumps - adding phrase variation

---

3. Mix modulation sources that shape melodic phrasing

Melody is not only pitch. It also includes **expression**, **phrasing**, and **motion**.

The Unity Mixer can combine CV sources controlling: - filter cutoff - wavefolder amount - FM depth - VCA amplitude - LPG response

Example patch: expressive melody contour

Patch: - **IN 5:** envelope - **IN 6:** slow LFO - **IN 7:** stepped random CV - **OUT 8:** to filter cutoff of your melodic voice

Result: - The envelope gives note articulation - The LFO adds movement across the phrase - The random CV creates evolving timbre per note

This makes a simple melody feel much more alive.

---

4. Layer oscillators into a richer melodic voice

Since the Unity Mixer also handles audio, it is useful for building a **multi-oscillator melodic sound source**.

Example patch: layered lead

Patch: - **IN 1:** VCO saw wave - **IN 2:** VCO pulse wave - **IN 3:** sub-oscillator or sine one octave below - **OUT 4:** to filter or VCA

Result: - A thicker, harmonically rich lead or bass tone - Great for mono melodic lines

Example patch: two-voice blend

Use top and bottom sections separately: - Top mixer for one melodic voice's oscillator blend - Bottom mixer for another melodic layer or a parallel modulation sum

---

5. Use 6:1 mode for complex melodic control

If **output 4** is left empty, the top three inputs feed the bottom mixer, giving you a **6-input sum** at **output 8**.

This is very useful when you want many small melodic influences combined into one destination.

Example patch: complex pitch ecosystem

- **IN 1:** main sequencer pitch
- **IN 2:** transpose CV
- **IN 3:** octave offset
- **IN 5:** subtle vibrato
- **IN 6:** random stepped CV
- **IN 7:** manual performance offset
- **OUT 8:** to quantizer or oscillator pitch input

Result: - One highly composite melodic CV stream - Excellent for generative or semi-generative melody systems

---

Best melodic patch strategies

Strategy 1: Put a quantizer after the Unity Mixer

This is probably the strongest melodic use.

Why: - multiple CV sources summed together often drift off exact semitone values - a quantizer after the mix turns those combined voltages into scale-aware notes

Patch flow

```
Sequencer + transpose + random + vibrato -> Unity Mixer -> Quantizer -> VCO 1V/oct
```

This gives: - controlled pitch additions - musically stable results - evolving but tonal melodies

---

Strategy 2: Use it before a precision-sensitive destination only with care

Because the Unity Mixer is not specifically described as a **precision adder**, I would not rely on it as a perfect replacement for one in highly exact pitch applications over wide ranges.

It is still very useful musically for: - short-range melodic transposition - adding expressive CV - summing already modest pitch offsets

Best practice: - keep pitch modulation subtle unless quantized afterward - test tuning if using it directly into 1V/oct

---

Strategy 3: Use the attenuation jumpers for hot audio sources

If you are mixing several oscillators for a melodic voice, the summed level can exceed the module's **10.5 V max output** and clip.

The manual notes: - each half has its own **-6 dB attenuation jumper** - useful for **high amplitude sources such as raw VCO outputs**

That means if you are building: - supersaw-style leads - stacked bass oscillators - thick drones with melodic articulation

then enabling attenuation can preserve headroom and keep the tone cleaner.

Patching ideas for melodic music

1. Transposing sequence mixer

Use the top mixer for pitch: - sequencer - offset row from another sequencer - keyboard transpose

Send to: - quantizer - oscillator

Good for: - basslines - arpeggios - lead motifs

---

2. Melody + ornament CV mixer

Use the top mixer to combine: - main pitch - short envelope into pitch for attack “pluck” - tiny random CV

Send to oscillator pitch.

Good for: - acid-style lines - animated plucks - pseudo-acoustic articulation

---

3. Audio voice stacker

Use the top mixer for: - oscillator A - oscillator B detuned - sub oscillator

Then send to: - filter - VCA

Use bottom mixer for: - second voice - noise + tone blend - parallel melody layer

Good for: - lead voices - basses - unison melodic sounds

---

4. CV phrase shaper

Use the bottom mixer for: - envelope - LFO - manual offset

Send to: - wavefolder - filter FM - VCA CV input

Good for: - adding expression to repeating melodies

---

5. Generative melodic bus in 6:1 mode

Combine: - sequence - random source - clocked offset - slow drift - manual transpose - octave offset

Then quantize the result.

Good for: - ambient - Berlin-school style evolving lines - generative techno melodies

---

Pairing with Intellijel Triatt or Quadratt

The manual specifically mentions that Unity Mixer pairs well with **Triatt** and **Quadratt**.

This is especially important for melodic patching because those modules provide the control that Unity Mixer lacks: - attenuation - offset - manual level control

Strong combo

- Use **Triatt/Quadratt** to scale pitch modulation or audio levels
- Send their outputs into **Unity Mixer**
- Use Unity Mixer to create the final combined melodic CV or audio voice

Example

As the manual suggests: - patch 3 Quadratt outputs into Unity Mixer’s top inputs - patch Unity Mixer output back into the 4th Quadratt channel

This gives: - a **3:1 mix** - plus a **master level control**

For melodic work, that means: - 3 oscillators into Unity Mixer - summed output back to Quadratt - Quadratt channel 4 becomes your lead voice volume/tone control path

Very practical for performance.

Practical limitations to keep in mind

No knobs, no mute switches, no level controls

This is not a performance mixer. It is a **set-and-forget utility mixer**.

So for melodic patching, it works best when: - sources are already at the right level - you want compact routing - you don’t need live balancing on the module itself

Output clipping at 10.5 V

Important for: - stacked audio oscillators - summed positive CV

If your melodic patch behaves oddly or sounds harsh, clipping may be the reason.

Not a dedicated precision adder

For exact pitch summing across many octaves, a dedicated precision adder is usually safer. But for many musical uses—especially with quantizers or moderate offsets—this module is still very handy.

Best overall melodic roles for the Unity Mixer

The most useful melodic applications are:

- **Combining pitch CV sources**
- **Creating transposition buses**
- **Mixing multiple modulation sources for phrasing**
- **Layering oscillators into richer melodic voices**

- **Building complex generative melody control signals**
- **Submixing audio or CV in very little rack space**

In a melodic Eurorack system, this is less of a “feature module” and more of a **glue module**. It helps separate melodic ideas become one playable signal.

Technical summary

- **Width:** 2 hp
- **Depth:** 39 mm
- **Current draw:** 11 mA @ +12V, 14 mA @ -12V
- **Modes:** dual 3:1 or single 6:1
- **Signal type:** audio or CV
- **Max output:** 10.5 V
- **Optional attenuation:** -6 dB per section via rear jumpers

---