Arcus Audio — Unity Mixer

- Manual PDF

Manual PDF

Arcus Audio Unity Mixer — melodic use analysis

The PDF/page provided is for the **Arcus Audio Unity Mixer**, a **2HP dual 3:1 unity gain summing mixer** that can also function as a **single 6:1 mixer**. It is **DC-coupled**, so it can mix both **audio and CV**, which is what makes it especially useful for melodic patching in Eurorack.

Module identified from the manual

Unity Mixer

- **Type:** Dual 3:1 unity gain mixer / 6:1 mixer
- **Width:** 2HP
- **DC-coupled:** yes
- **Use with:** audio or CV
- **Input impedance:** 10kΩ
- **Indicators:** bi-color LEDs on outputs 1 and 2 for level/polarity
- **Power:** 15mA on +12V, 15mA on -12V

What this module does musically

A unity mixer does not amplify or attenuate by itself; it **adds signals together at fixed gain**. In melodic systems, that is extremely valuable because melodies often come from **combining pitch-related voltages**:

- sequencer pitch CV
- keyboard CV
- quantizer output
- transposition voltage
- octave offsets
- envelopes used as temporary pitch bends
- LFO or vibrato
- random voltage
- chord intervals

Because the Unity Mixer is **DC-coupled**, it can combine all of those control voltages directly.

Best melodic uses

1. Transposing a sequence

Patch: - **Input 1:** pitch sequence CV - **Input 2:** offset voltage from a precision adder, keyboard, fader, or fixed voltage source - **Output:** oscillator 1V/oct

Result: - Your melody plays normally, but the second voltage shifts it up or down. - This is one of the simplest and most useful melodic applications.

Example: - Sequence sends the melody - A slow manual offset or another sequencer row transposes the entire line every bar

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2. Adding vibrato or pitch animation

Patch: - **Input 1:** main pitch CV - **Input 2:** attenuated LFO - **Output:** oscillator pitch input

Result: - The oscillator follows the melody, while the LFO adds vibrato.

Important note: - Since this mixer is unity gain and has **no attenuators**, the modulation source should already be reduced elsewhere. - If your LFO is too strong, vibrato may become wide pitch wobble.

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3. Creating pitch slides and bends

Patch: - **Input 1:** sequencer pitch CV - **Input 2:** envelope or function generator - **Output:** oscillator 1V/oct

Result: - The envelope adds a temporary pitch rise or fall at each note. - Great for acid-style attacks, plucks, or expressive bends.

This works especially well if the envelope is short and subtle.

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4. Layering interval voltages for harmony

Patch: - **Mixer A output:** root melody CV + interval offset - **Mixer B output:** root melody CV + different interval offset

Send: - Output A -> oscillator 1 pitch - Output B -> oscillator 2 pitch

Result: - You get harmonized melodic lines from one source melody.

Example uses: - root + fifth - root + octave - root + third

If you have fixed voltage sources or a sequencer channel producing stable interval voltages, this mixer lets you build simple harmonic structures.

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5. Mixing several melodic CV sources before quantization

Patch: - **Input 1:** slow random CV - **Input 2:** stepped sequencer row - **Input 3:** manual offset - **Output:** quantizer input

Result: - The mixed voltage becomes the raw melodic material. - The quantizer then forces the combined result into a musical scale.

This is one of the most powerful uses for a unity mixer in melodic composition: - random provides variation - sequence provides structure - offset provides phrase movement

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6. Mixing after quantization for controlled transposition

Patch: - **Input 1:** quantized melody CV - **Input 2:** octave offset or transposition CV - **Output:** oscillator 1V/oct

Result: - Keeps the melody stable while allowing phrase-level movement. - Very useful when you want musical transposition without changing the contour of the melody.

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7. Building a 6-input melodic control bus

Since the two 3:1 mixers can act as a **single 6:1 mixer**, you can combine many melodic influences into one pitch stream.

Possible combined sources: - sequencer - keyboard CV - offset voltage - vibrato LFO - envelope bend - random modulation

Result: - One “composite melody CV” controlling an oscillator or quantizer.

This is excellent for experimental melodic systems where pitch is generated by several interacting sources.

How to use it with common melodic module types

Even though the provided PDF only directly documents the Unity Mixer, here is how it fits into a typical melodic Eurorack voice.

With a sequencer

Use the Unity Mixer to: - transpose the sequence - add accents as pitch offsets - combine two rows into one more complex pitch line

With a quantizer

Use the Unity Mixer: - **before quantizer** for generative note creation - **after quantizer** for octave transposition and controlled shifts

With oscillators

Send mixed pitch CV to: - one oscillator for a single animated melody - two oscillators from separate summed outputs for harmonized lines

With envelopes and LFOs

Add: - envelopes for bends - LFOs for vibrato - stepped modulation for melodic ornamentation

With precision voltage sources

Although this is not specifically described as a precision adder in the manual, it can still be used for **practical pitch summing** in many patches. For highly exact long-range 1V/oct transposition, a dedicated precision adder may be better, but for many real-world musical patches this mixer is still very useful.

Patch ideas for melodic music

Patch 1: Simple transposed bassline

- Sequencer pitch out -> Unity Mixer input 1
- Manual offset/fixed voltage -> input 2
- Mixer output -> VCO 1V/oct
- Sequencer gate -> envelope -> VCA

Use: - offset voltage to move the bassline between sections

Sound: - classic structured melodic bass part

Patch 2: Lead with vibrato and pitch envelope

- Sequencer pitch -> input 1
- attenuated LFO -> input 2
- short envelope -> input 3
- mixer output -> lead oscillator pitch

Sound: - stable melody with animated vibrato and slight attack bend

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Patch 3: Generative melody source

- stepped random -> input 1
- slow triangle LFO -> input 2
- manual offset -> input 3
- mixer output -> quantizer -> oscillator

Sound: - evolving but scale-locked melodic line

Patch 4: Two-voice harmony from one sequence

Mixer 1 - root melody -> input 1 - +third offset -> input 2 - output 1 -> oscillator A

Mixer 2 - root melody -> input 1 - +fifth or +octave offset -> input 2 - output 2 -> oscillator B

Sound: - instant harmonized melodic texture

Patch 5: Phrase modulation bus

Use all 6 inputs: - main sequence - bar-by-bar transpose CV - vibrato - occasional random step voltage - envelope bend - fixed offset

Then: - output -> quantizer -> oscillator

Sound: - a melody with internal motion and larger-form phrasing

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Strengths of this module for melodic work

- **Tiny 2HP footprint**
- **DC-coupled**, so it handles pitch and modulation CV
- Can support **two separate melodic voices**
- Can be combined into a **single complex melody CV mixer**
- LEDs help visualize polarity and signal activity
- Great for adding small melodic utilities without sacrificing rack space

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Limitations to keep in mind

No attenuators

This is the main limitation in melodic patching. If you are mixing pitch CV with LFOs, envelopes, or random voltages, you will often want: - attenuators - offset generators - utility VCAs

Without attenuation, modulation depth may be too large.

Not explicitly presented as a precision adder

For very exact pitch transposition across many octaves, a dedicated precision adder is usually safer. But for many melodic and experimental applications, this mixer is still very useful.

Summing can push voltage ranges high

If you combine several CV sources, the total voltage may exceed the musically useful range for the destination. A quantizer or attenuator downstream may help.

Overall musical verdict

The **Arcus Audio Unity Mixer** is not a melody generator by itself, but it is an extremely useful **melodic utility**. In a Eurorack system, melodic content often comes from **summing multiple control voltages**, and this module is built exactly for that.

It is especially good for: - sequence transposition - harmonic interval stacking - adding vibrato or pitch envelopes - combining generative CV sources before a quantizer - making two related melodic voices in minimal space

If your rack already has: - a sequencer - quantizer - oscillator - envelopes/ LFOs - a few offset or attenuator tools

then the Unity Mixer becomes a very effective **melodic glue module**.
