Buchla and Tiptop Audio — 248t

- Manual PDF

248t MARF Manual PDF

Using the Tiptop/Buchla 248t MARF to Create Melodic Components

The **248t MARF (Multiple Arbitrary Function Module)** is essentially a highly programmable **16-stage melodic and timing sequencer/function generator**. From the manual, the most important musical idea is this:

- each **stage** stores:
- a **voltage**
- a **time**
- optional **gate/pulse assignments**
- optional **pitch behavior** like **quantize**, **slew/sloped**, and **range limits**
- optional **performance logic** like **stop**, **sustain**, **enable**, **first**, and **last**

Used together with oscillators such as the **259t** and supporting modules like envelopes/LPGs, it can generate melodies, glides, phrases, transpositions, rhythmic variation, and semi-generative note structures.

Relevant modules mentioned in the manual

The manual explicitly describes using the **248t** with:

- **259t oscillator**
- especially via **ART output** for precise pitch control
- firmware update recommended for correct ART high-speed pitch slide behavior
- **292t LPG**
- via the **Reference Output** for a natural decaying control shape
- external CV sources patched into inputs **A–D**
- for modulating stage voltage or stage time

So the core “melodic system” here is:

- **248t** = pitch/timing/programming brain
- **259t** = sound source
- **292t or envelope/VCA/LPG** = articulation
- optional other CV/gate utilities = variation and control

What the 248t contributes melodically

1. Per-stage pitch sequencing

The **Output Voltage Level** sliders define the pitch value for each of the 16 stages.

That means you can create:

- traditional step melodies
- repeating riffs
- evolving phrases
- non-repeating melodic contours

When **Quantize** is enabled on a stage, the voltage becomes musically constrained to a scale. The manual says quantized output is **1V/Oct** in Eurorack.

This makes the 248t much more than a free-running CV sequencer: it can act as a **scale-aware melodic sequencer**.

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2. Scale and key control

The preset/scale section lets you choose:

- **Key**: C through B
- **Scale**:
- **Major**
- **Minor**
- **Chromatic**

This is very useful for melody writing because you can:

- sketch a melodic contour with the sliders
- enable **Quantize** on chosen stages
- then shift the whole phrase into a different key quickly
- swap between major/minor flavors without reprogramming the sliders

Practical musical use

- Build a 16-step contour by ear
- Quantize all stages
- Choose **C minor**
- Save as preset 1
- Change to **Eb major** and save as preset 2
- Now you have two harmonically related versions of the same phrase

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3. Glides and portamento between notes

The **Sloped/Stepped** stage modifier is one of the most musically valuable features.

- **Stepped** = classic sequencer note jumps
- **Sloped** = pitch glides between stages

The manual notes that slew time is based on the **interval time** of the stage, and the 259t ART firmware update enables **accurate pitch slides and glide effects** from the MARF.

This enables:

- acid-like slides
- Buchla-style fluid melodic motion
- expressive phrase transitions
- hybrid sequences where some notes are discrete and others melt into the next

A strong trick is to make only a few stages **sloped**, so the melody is mostly stepped but includes intentional legato slides.

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4. Variable note lengths per stage

The **Interval Time** sliders determine how long each stage lasts.

This means melody is not locked to equal note values. You can program:

- long-held tones
- short passing notes
- uneven phrase structures
- rubato-like movement
- repeating patterns with internal rhythmic asymmetry

This is a major reason the MARF feels musical rather than just mechanical.

Example

In a 16-stage phrase you might set:

- stage 1 = long tonic
- stages 2–4 = shorter ornament notes
- stage 5 = medium duration
- stage 6 = very short pickup
- stage 7 = long destination note

Now the pitch sequence also becomes a phrase with articulation and direction.

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5. Independent gate programming for note articulation

Each stage can independently output:

- **Pulse 1**
- **Pulse 2**

These are separate programmable gate streams.

This lets you separate **pitch movement** from **articulation**.

Musical possibilities

- every stage changes pitch, but only some stages fire an envelope
- one pulse stream triggers a main voice
- the other pulse stream triggers an accent, second envelope, second oscillator, or percussion
- legato phrases can be created by sliding pitch across stages without retriggering every note

This is extremely useful melodically because not every pitch change must become a newly articulated note.

Best ways to combine the 248t with the 259t for melody

A. ART pitch sequencing into the 259t

The manual recommends using the **black ART output** of the MARF into the **259t ART input** and setting the oscillator to **ART mode**.

Why this matters:

- pitch is digitally communicated for precision
- slides/glides are handled accurately
- better integration than ordinary CV in this specific ecosystem

The switch above the ART outputs selects the gate source:

- **Pulse 1**
- **Pulse 2**
- **ALL**

So the MARF can send pitch and gate behavior in a tightly integrated way.

Musical result

This makes the 248t + 259t pair behave like a highly expressive melodic voice generator: - stage-based pitches - programmable note lengths - selective retriggers - scale quantization - glide - structured looping

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B. Voltage output for standard 1V/oct melodic sequencing

The **blue Voltage Output** jack can be used as standard pitch CV.

Use this when: - controlling a non-ART oscillator - multing pitch to multiple oscillators - layering voices - sending pitch elsewhere, such as quantizer-adjacent or modulation destinations

If a stage is quantized, the output behaves musically in **1V/oct** terms.

So even without the 259t, the 248t is a serious melodic sequencer for any Eurorack oscillator.

C. Reference output into a 292t LPG

The manual notes the **Reference Output** produces a **downward ramp spanning the interval time of the stage**, and is useful for directly driving a **292t LPG** without a separate envelope.

This is a very Buchla-style melodic patch.

Patch concept

- 248t pitch out/ART out -> 259t pitch
- 259t audio -> 292t audio in
- 248t reference out -> 292t CV in

Result: - each note gets a shaped decay related to the programmed stage length - long stages create longer decays - short stages create tighter plucks - melody and articulation remain linked in a very organic way

This is one of the most elegant “melodic voice” uses described in the manual.

Advanced melodic techniques from the manual’s feature set

1. Create phrase loops with First/Last stage markers

The **First** and **Last** operating mode modifiers define the cycle boundaries.

This means your 16 stages do not need to behave as one fixed 16-step loop. You can create:

- 3-note motifs
- 5-step loops
- 7-step polymetric phrases
- 9-stage melodies inside a larger programmed grid

Why this matters musically

Odd-length melodic loops create evolving relationships against regular drum patterns.

For example: - set a 5-stage melodic phrase - run it against a 4/4 rhythm - the phrase shifts against the bar line over time

This is one of the easiest ways to get “alive” melodies.

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2. Use Stop, Sustain, and Enable as melodic phrase logic

These are not just utility functions—they are compositional tools.

Stop

A stage marked **Stop** halts advance until a start pulse is received.

Use it to: - create phrase endings - make melodic fragments that wait for external trigger - build call-and-response structures

Sustain

A stage with **Sustain** holds while a high gate is present at the start input.

Use it to: - extend important melody notes - create performable held tones - let an external keyboard gate or sequencer decide note duration

Enable

A stage with **Enable** waits until voltage above 5V is received at the start input.

Use it to: - probabilistically unlock notes - tie melodic advancement to another sequencer or logic source - make generative melodies that only proceed when certain conditions occur

Together, these let melody behave like a reactive musical system, not just a fixed pattern.

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3. External CV inputs A–D for transposition and melodic variation

The 248t has four external CV inputs that can be used either for **timing** or for **voltage source processing**.

For voltage programming, if a stage's source is set to **External**, the slider selects **A, B, C, or D** instead of directly setting pitch.

This is powerful.

Melodic uses

- one stage uses internal programmed note
- another stage pulls pitch from external CV A
- another from CV B
- some stages are fixed, some are externally driven

So a melody can mix: - fixed composition - transposition input - random CV - another sequencer's CV - keyboard CV

Example use

- Input A = slow transposition CV
- Input B = random stepped voltage
- Input C = keyboard pitch

- Input D = second sequencer row

Then assign different stages to different sources. The melody becomes a hybrid between composed and live/generated material.

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4. Time output as a second melodic/ modulation source

The manual states the **Time Output** emits a CV based on the interval time slider. If time source is set to **External**, this can be used as a second CV source without affecting timing.

This is very useful for coordinated melodic patches.

Example uses

Use time CV to modulate: - oscillator timbre - wavefold amount - LPG response - filter cutoff - FM amount

Now note duration and timbre can be related: - long notes are darker or brighter - short notes are more percussive - specific phrase shapes become timbral as well as melodic

This creates “melodic components” that feel more expressive and less flat.

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5. All Pulses output as a master clock or articulation layer

The **All Pulses Output** sends a pulse each time a new stage is addressed.

Use it to: - trigger a second envelope on every stage - clock another sequencer or divider - synchronize melodic accompaniment - add a regular articulation layer while Pulse 1/Pulse 2 remain selective

For melody, this allows multiple layers of articulation: - selective note trigger from Pulse 1 - accent trigger from Pulse 2 - every-step utility clock from All Pulses

Practical patch ideas for melodic music

Patch 1: Classic 16-step tonal melody

Goal: stable musical sequence with quantized notes

Patch: - 248t Voltage Out or ART Out -> oscillator pitch in - Pulse 1 Out -> envelope gate in - envelope -> VCA/LPG CV - oscillator audio -> VCA/LPG -> mixer

Program: - set 16 pitch sliders by ear - enable **Quantize** on all stages - choose **Key** and **Major/Minor** - set mostly equal interval times - assign Pulse 1 to notes you want articulated

Result: - conventional but very expressive sequenced melody

Patch 2: Sliding lead line

Goal: expressive melody with selected portamento

Patch: - 248t ART Out -> 259t ART In - Pulse 1 -> envelope - 259t -> LPG/VCA

Program: - quantize stages - set some stages to **Sloped** - vary interval time per stage - use half-range for easier pitch programming - set pulse only on certain notes for legato feel

Result: - some notes retrigger, others glide into the next, very playable and lyrical

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Patch 3: Buchla-style plucked melodic voice

Goal: melody and dynamics linked without separate envelope complexity

Patch: - 248t ART/Voltage Out -> 259t pitch - 259t audio -> 292t input - 248t Reference Out -> 292t CV in - optional Pulse 1 -> extra strike or transient source

Program: - mix short and long interval times - use quantize on desired stages - add slope to some notes

Result: - each note gets a natural decay contour tied to its stage duration

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Patch 4: Generative melody with controlled randomness

Goal: semi-predictable melodic movement

Patch: - random stepped CV -> External Input A - slow transposition CV -> External Input B - 248t Voltage Out -> oscillator pitch - Pulse 1 -> envelope - All Pulses -> clock for another modulation source

Program: - some stages set to **Internal** voltage - some stages set to **External** voltage - sliders select A or B on those external stages - use First/Last to make an odd-length loop - use Enable on a few stages, controlled by external gates

Result: - recurring motif with occasional external-note injection and evolving phrase structure

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Patch 5: Two melodic articulations from one phrase

Goal: one pitch line, two rhythmic interpretations

Patch: - one 248t pitch output -> oscillator 1 and oscillator 2 - Pulse 1 -> envelope/VCA for voice 1 - Pulse 2 -> envelope/VCA for voice 2

Program: - same pitch sequence feeds both voices - Pulse 1 triggers main notes - Pulse 2 triggers syncopated notes or accents

Result: - one melodic contour produces two interlocking musical layers

Why the 248t is especially strong for melody

Compared with many step sequencers, the manual shows the 248t is unusual because it combines:

- **pitch programming**
- **per-stage time programming**
- **per-stage articulation**
- **per-stage quantization**
- **per-stage glide**
- **external CV substitution**
- **loop boundary logic**
- **conditional advancement behavior**

That means it does not just produce “notes in order.” It produces:

- **phrases**
- **contours**
- **timed gestures**
- **responsive melodic structures**

In practice, this makes it excellent for:

- lead lines
- bass sequences
- generative motifs
- evolving tonal patterns
- plucked Buchla-style sequences
- gliding electronic melodies

Important setup notes from the manual

259t preparation

Before using the 248t with the 259t via ART:

- update the **259t ART firmware**
- confirm status on power-up:
- all range LEDs off = update needed
- high LED on = update done

If ART hasn't been used before, **initial tuning** may be required.

Recommended pitch range

The manual recommends using the 248t in:

- **Half range (5 octave)** or
- **Limited range**

when pairing with the 259t, to avoid notes outside the oscillator's range.

This is also musically useful because smaller voltage ranges make it easier to dial in intentional melodies.

Presets for composition

You can save **12 presets**, including slider values and stage settings.

This is very useful for melodic composition: - verse phrase - chorus phrase - transposed variation - alternate mode - denser articulation version

Because the 248t is deep, preset recall makes it practical in real music rather than just experimentation.

Best overall melodic workflow

A very effective workflow from the manual's feature set is:

1. **Set a loop length** with First/Last
2. **Dial pitch contour** with output voltage sliders
3. **Set stage durations** with interval time sliders
4. **Enable quantize** where needed
5. **Choose key/scale**
6. **Add slope** to selected transitions
7. **Program Pulse 1/2** for articulation
8. **Use Reference or envelopes** for dynamics
9. **Save presets** for alternate phrases
10. **Introduce external CV** on selected stages for variation

This turns the 248t into a full melodic composition engine.

Summary

From the manual, the **248t MARF** is best understood as a **deeply programmable melodic sequencer/function generator** that works especially well with the **259t oscillator** and **292t LPG**.

Together they can create melodic components such as:

- quantized tonal sequences
- gliding leads
- variable-length note phrases
- articulated basslines
- Buchla-style plucked melodies
- generative melodic systems
- transposable motifs
- multi-layer rhythmic/pitch interactions

The strongest pairings described are:

- **248t ART Out -> 259t ART In** for precise melodic pitch and slides

- **248t Pulse outputs -> envelopes/LPG triggers** for note articulation
- **248t Reference Out -> 292t CV In** for dynamic, duration-linked shaping

If you want, I can also turn this into: 1. a **beginner patch cookbook**, 2. a **“melodic patch recipes” table**, or 3. a **signal-flow diagram** in markdown.

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