

Buchla and Tiptop Audio – 266t Source of Uncertainty

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Buchla & Tiptop Audio 266t – creating melodic material

The **266t Source of Uncertainty** is not a voice module by itself, but it is extremely useful for generating **pitches, pitch movement, rhythmically changing melodies, and evolving note selection**. Think of it as a **melody idea generator and pitch processor**.

What this module gives you for melody

From the manual, the 266t provides:

- **Noise Source**
 - Blue, pink, and white noise outputs
- **Fluctuating Random Voltages**
 - Smooth/random CV moving from very slow to fast
- **Sample and Hold**
 - Captures input voltage on incoming pulses
 - Includes alternating pulse and alternating CV outputs
- **Integrator**
 - Slews/smooths stepped voltages into glides
- **Quantized Random Voltages**
 - Random stepped voltages with selectable step behavior
 - Two output modes: **n+1** and **2^n**

- **Stored Random Voltages**
- Random voltages with different distribution behaviors
- One uniform output and one skewable/curve-shaped output

To make this melodic in a Eurorack patch, you typically combine the 266t with:

- an **oscillator** with 1V/oct input
- an **envelope + VCA**
- a **clock or trigger source**
- optionally a **quantizer** if you want strict scales/keys
- optionally a **sequencer** or precision adder for more control

Best melodic uses of the 266t

1. Quantized Random Voltages as a melody generator

This is the most direct melodic section.

How it works

- A **pulse input** generates a new stepped random voltage.
- The **quantization knob/CV** changes the number of possible voltage steps.
- The two outputs behave differently:
- **n+1**: more local/clustered over a 5V range
- **2^n**: more evenly distributed over a 10V range

Musical result

- Send one of these outputs to an oscillator's **1V/oct** input.
- Send a clock to the **pulse input**.
- Each clock pulse creates a new note.

Why it's useful

- **n+1 output** tends to feel more melodic and motif-like because notes stay more locally related.
- **2^n output** gives bigger pitch spreads and more dramatic interval jumps.

Patch idea

- Clock → Quantized Random Voltage pulse in
- Quantized Random Voltage out → quantizer → oscillator 1V/oct
- Same clock → envelope trigger
- Oscillator → VCA → mixer

This gives you a random melody that can be constrained to a musical scale with the quantizer.

2. Use Stored Random Voltages to shape melodic range and note preference

Stored Random Voltage is great when you want random notes, but with **bias**.

How it works

- Pulse input generates a new random stepped voltage.
- Left output = **evenly distributed random**
- Right output = **distribution-shaped random**, controlled by knob + CV
- Fully CCW favors lower voltages
- Center gives a bell curve
- CW favors higher voltages

Musical result

This is excellent for controlling: - pitch - transposition - octave choice - melody contour

Patch idea: biased melody register

- Clock → Stored Random pulse in
- Right stored random output → quantizer → oscillator 1V/oct

Then use the distribution knob: - CCW: mostly low notes - Center: notes cluster around middle register - CW: mostly high notes

This is much more musical than pure equal random because you can choose whether the melody tends to live low, middle, or high.

Strong use case

Patch the **left output** to one oscillator and the **right output** to another oscillator.

You get: - one line with fully even note choices - one line with biased note choices

That creates natural contrast between two melodic voices.

3. Sample and Hold from noise for classic random melodies

This is the classic “random note generator” patch.

How it works

- Feed a CV source into Sample and Hold CV input.
- Each pulse samples that voltage and holds it until the next pulse.

Best source choices from the module

Use the internal noise outputs: - **White noise**: brightest, more jumpy/random feel - **Pink noise**: more balanced feeling - **Blue noise**: low-frequency biased according to the manual description, so try it for somewhat different contour behavior

Patch idea

- White/pink/blue noise out → Sample & Hold CV in
- Clock → Sample & Hold pulse in
- Sample & Hold CV out → quantizer → oscillator 1V/oct

Now each trigger creates a new random pitch.

Why this is good

This method feels more open-ended than the Quantized Random section. It works especially well if: - you want a quantizer to define the scale - you want to sample other voltages besides noise - you want to alternate notes using the **alt** outputs

4. Use the Sample & Hold “alt” outputs for ping-pong melodies

The manual notes: - pulse **alt** divides incoming pulse into alternating pulse outputs - CV output **alt** divides voltages into alternating outputs

This is extremely musical.

Patch idea: two-note-lane melody

- Noise or fluctuating random voltage → Sample & Hold CV in
- Clock → Sample & Hold pulse in
- S&H main CV out → quantizer A → oscillator A pitch
- S&H alt CV out → quantizer B or second oscillator pitch

Or: - pulse alt outputs trigger two separate envelopes/voices on alternating beats

Musical result

You get: - alternating notes between two voices - call-and-response lines - stereo melodic ping-pong - interleaved melodies from one random source

This is one of the most interesting compositional features on the module.

5. Fluctuating Random Voltages for slow melodic drift

This section outputs continuously moving random CV rather than stepped values.

How it works

- Knob + CV control the probable rate of random change from very slow to very fast.
- Output is a smooth, evolving random voltage.

Melodic use

By itself, this is usually **not** ideal as direct pitch CV for tonal music, unless you want gliding/experimental lines. But it becomes very useful when combined with: - a **sample and hold** - a **quantizer** - an **integrator** - a **precision adder/transposer**

Patch idea: evolving melody source

- Fluctuating Random Voltage out → Sample & Hold CV in
- Clock → Sample & Hold pulse in
- S&H out → quantizer → oscillator 1V/oct

Now the underlying voltage is always moving, but notes are only captured on the clock.

This creates a melody that feels **organic and connected**, unlike pure white-noise randomness.

Another use

- Fluctuating Random Voltage → transpose input of a quantizer/sequencer

- Main sequence continues normally
- Random section slowly changes key center or interval offset

This is a very musical way to create evolving melodies without losing structure.

6. Integrator for portamento and legato-style melodic movement

The integrator smooths stepped voltages.

How it works

- Feed it discrete or stepped voltages
- Turn the knob to smooth from almost none to very heavy glide
- CV can control the smoothing amount

Melodic use

This is perfect after any stepped random source: - Quantized Random Voltages - Stored Random Voltages - Sample & Hold output

Patch idea

- Quantized Random Voltage out → Integrator in → oscillator 1V/oct

Now instead of instant note jumps, you get: - portamento - glissandi - sliding between notes

Advanced use

Modulate the integrator CV input so that some phrases glide more than others: - slow envelope to integrator CV - random CV to integrator CV - manual performance control

This makes the melody feel much more expressive.

Combining sections inside the 266t for melodic composition

Patch 1: Controlled random melody

A very usable patch for actual songs.

Connections - Master clock → Quantized Random pulse in - Quantized Random **n+1** out → integrator in - Integrator out → scale quantizer → oscillator 1V/oct - Master clock → envelope trigger - Oscillator → filter → VCA

Result - random stepped notes - locally grouped pitch movement - optional glide from the integrator - much more “musical phrase” feel than chaotic jumps

Patch 2: Two-voice alternating melody

Connections - Fluctuating Random Voltage out → Sample & Hold CV in - Clock → Sample & Hold pulse in - S&H main out → quantizer → oscillator A - S&H alt out → quantizer → oscillator B - Pulse alt outputs → envelopes for voice A and B

Result - alternating notes split across two voices - excellent for stereo patches or dialogue melodies - one source creates a surprisingly composed result

Patch 3: Bias-controlled lead line

Connections - Clock → Stored Random pulse in - Right Stored Random output → quantizer → oscillator 1V/oct - Use the probability/distribution

knob to bias the register - Slow LFO or another random source → Stored Random CV in

Result - melody tends to favor low, center, or high notes - feels like intentional contour rather than flat randomness - great for generative lead parts

Patch 4: Random transposition over a stable sequence

If you already have a sequencer:

Connections - Sequencer pitch CV → precision adder input 1 - Stored Random or Fluctuating Random → quantizer/transposer → precision adder input 2 - Precision adder out → oscillator 1V/oct

Result - your base melody stays recognizable - the 266t adds octave jumps, phrase transpositions, or tonal shifts - ideal for generative variation that still sounds composed

Patch 5: Noise-derived melody with glide

Connections - Pink noise → Sample & Hold CV in - Clock → Sample & Hold pulse in - S&H out → quantizer → integrator → oscillator

Result - classic random notes - scale-constrained - glide softens harsh jumps - excellent for ambient, Berlin-school, and experimental melodies

Which outputs are best for melody?

Most directly melodic

1. **Quantized Random Voltages**
2. **Stored Random Voltages**
3. **Sample and Hold**
4. **Fluctuating Random Voltages** sampled by S&H
5. **Integrator** as a pitch-smoother

Best for tonal music

If you want melodies that fit a song: - use **any stepped CV output** - then send it into a **quantizer** - optionally through the **integrator**

That gives the strongest results.

Practical musical strategies

Keep randomness within a useful register

Random voltage often spans a wide range. To keep melodies usable: - use an attenuator - use a precision adder with fixed offset - use the Stored Random distribution control - use the **n+1** output for tighter intervals

Use clocks to impose phrasing

The pulse inputs are where the melody becomes musical. Try: - quarter notes for sparse lines - eighth notes for active melodies - irregular clocks for more human phrasing

Use one random source for pitch and another for articulation

For example: - Quantized Random → pitch - Stored Random → filter cutoff or decay - Pulse alt → alternating envelopes

That makes a melody feel intentional and alive.

Create repetition with limited step counts

The Quantized Random section becomes more phrase-like when the number of steps is reduced. Fewer steps often means: - more repeated notes - stronger motifs - less “aimless” randomness

Use distribution instead of pure randomness

The Stored Random right output is especially good for musical results because you can shape the probability of low/mid/high voltages. This is one of the best features on the module for melody writing.

Best musical roles for the 266t

The 266t is especially strong for:

- **generative melodies**
- **random but bounded pitch lines**
- **transposition sources**
- **alternating two-voice melodic structures**
- **gliding random lead lines**
- **ambient and experimental tonal movement**
- **controlled unpredictability in otherwise sequenced music**

It is less about writing a fixed melody and more about creating a system that produces **musically convincing melodic variation**.

Summary

The **266t Source of Uncertainty** can be a powerful melodic tool when paired with a voice and, ideally, a quantizer.

Most effective melodic workflows:

- **Quantized Random Voltages** for direct note generation
- **Stored Random Voltages** for shaped/bias-controlled note selection
- **Sample & Hold + noise or fluctuating CV** for classic random melodies
- **Integrator** for glide and expressive smoothing
- **Alt outputs** for alternating melodic voices and call-and-response patterns

If you want, I can also turn this into: 1. a **set of concrete patch recipes** for techno/ambient/Buchla-style music, or

2. a **signal-flow diagram** showing exactly how to patch the 266t into a complete melodic voice.

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