

Fancyyyyyy – Rung Divisions V2 Clock Divider + Shift Register

• [Manual PDF](#)

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Fancyyyyyy Rung Divisions – creative patch ideas and module pairings

Rung Divisions is a pretty unusual hybrid:

- **clock divider / pulse processor** - **dual OR bus rhythm mixer** - **universal shift register** - **1-bit / 3-bit / 8-bit CV source** - **noise source** - **direction / length / chance voltage-addressable pattern logic** - and it all works from **sub-audio up to audio rate**

That means it can sit at the center of a system as: 1. a **polyrhythmic trigger brain**,

2. a **looping / chaotic stepped CV sequencer**,

3. a **feedback instrument**, or

4. an **audio-rate digital chaos oscillator / subharmonic source**.

Below are the most musically useful and weird combinations I'd try.

Quick character summary

A few important things from the manual shape how to patch it:

• **Bus1 clocks the shift register.**

- The divider outputs $/2$ to $/8$ can be routed to **Bus1 or Bus2** with switches.
- **Bus outputs are OR combinations** of selected divisions.
- **Chance** determines whether the register tends to:
 - take in new data,
 - mix in noisy interference,
 - or fully **loop** existing data.
- **Direction** can be manually toggled or triggered with a gate.
- **Length** changes loop point and can be voltage controlled.
- **3-bit and 8-bit outputs are reverse encoded**, so they often create complementary/contrapuntal motion.
- At audio rate, the module becomes a **complex digital/noise oscillator**.

So the golden rule is:

Use **Bus1** as your internal rhythmic engine, and use **Bus2 / 1-bit / 3-bit / 8-bit** as related but differently-behaving outputs to animate the rest of the patch.

1. Use it as a polyrhythmic drum brain

Patch concept

Send a master clock into **Clock**.

Route several divisions to **Bus1** and **Bus2** in different combinations.

Example: - **Bus1**: $/3 + /5$ - **Bus2**: $/2 + /7$ - **1-bit**: use as a third rhythm line - **Reset**: occasional manual trigger or bar reset from a master sequencer

What happens

- Bus1 creates a composite rhythm that also clocks the shift register.
- Bus2 becomes a second correlated but offset gate stream.
- The shift register then generates stepped voltages tied to the rhythm complexity of Bus1.

Pair with

- **Drum modules:** WMD Crucible, Noise Engineering Basimilus, Jomox ModBase, Tiptop drum voices
- **Envelope + VCA chains** for pinging LPGs
- **Sequential switch** to distribute Bus outputs across voices
- **Accent VCAs / logic modules** to create fills

Nice trick

Use: - **Bus1** for kick/low percussion clocking - **Bus2** for hats/claps - **/8 or /7** directly into reset or fill logic - **3-bit output** to modulate drum pitch or decay

Great companion module types

- Trigger sequencers
- Clock utilities
- Logic modules
- Drum voices
- Envelope generators

Specific module ideas

- **Shakmat Time Wizard** or **4ms Rotating Clock Divider** for expanded clock interplay
- **Noise Engineering Integra Solum** or **Vice Virga** to route rhythms dynamically

- **Doepfer A-166 logic** to derive accents and odd resets
 - **Steppy / Varigate / Pam's** as master clock and reset source
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2. Make an evolving melodic sequencer with controlled instability

Rung Divisions is basically begging to be patched as a semi-random melody source.

Patch concept

- Feed a steady clock into **Clock**
- Put a few divisions into **Bus1**
- Set **Chance** around the middle
- Set **Length** somewhere between 3 and 7
- Take **8-bit output** into a **quantizer**
- Send quantizer output to oscillator pitch
- Use **Bus2** or **1-bit** to trigger envelopes

What happens

The shift register produces repeating-but-mutating pitch patterns.

Changing: - **Length** changes phrase length - **Direction** changes melodic contour - **Chance** changes how much it loops vs refreshes

The reverse encoding means: - **8-bit** often gives broad, stepped contours - **3-bit** gives a smaller, chunkier melodic motion

Pair with

- **Quantizer**
- **Oscillator**

- **Envelope + VCA**
- **Precision adder / transposer**
- **Slew limiter** if you want it less stepped

Specific module ideas

- **Intellijel Scales, ADDAC207, Toppobrillo Quantimator, uO_C in Quantermain**
- **Precision adder** like **Doepfer A-185-2**
- **Sequential switch** to switch scales or destinations
- **Slew / lag** like **Make Noise Function, Joranalogue Contour 1, Doepfer A-171-2**

Nice variation

Quantize both: - **3-bit output** to oscillator A - **8-bit output** to oscillator B

Because of the complementary encoding, they often feel like two lines “answering” each other.

3. Build a self-playing duet or canon

One of the best uses of the reverse-encoded outputs is contrapuntal voice-leading.

Patch concept

- **3-bit output** → quantizer channel 1 → VCO 1
- **8-bit output** → quantizer channel 2 → VCO 2
- **Bus1** triggers voice 1 envelopes
- **Bus2** triggers voice 2 envelopes
- **Direction input** receives sparse triggers from another divider or gate sequencer

- **Length CV** is modulated slowly

Why it works

The 3-bit and 8-bit outputs move differently enough to create: - call/response - mirrored contour - inside/outside harmonic drift

Pair with

- dual quantizer
- dual oscillator
- dual LPGs or VCAs
- stereo mixer / panner

Specific module ideas

- **XAOC Zadar** for two independently shaped envelopes
- **QPAS / Ikarie / Dual Dagger** for stereo movement
- **Mutable Veils / Intellijel Quad VCA** to animate dynamics
- **Happy Nerding PanMix** or any stereo panner

Fun extension

Send one voice through a **wavefolder** and the other through a **low-pass filter**.

Now the same hidden data structure produces two very different personalities.

4. Patch it as a “probability without a probability module” system

The Chance control is not just a randomizer; it crossfades pattern behavior between fresh data, noise interaction, and looping memory.

Patch concept

- Clock from a stable source
- Data input from:
 - **noise**
 - or another gate sequence
 - or one of its own divisions
- Modulate **Chance CV** slowly with an LFO, envelope, or another sequencer row
- Use **Bus outputs** for percussion triggers
- Use **8-bit** for modulation or pitch

What happens

You get changing density and pattern memory: - low chance = more new data / instability - middle = noisy interference - high = looping / locked pattern

This is fantastic for making phrases that gradually “remember themselves,” then dissolve again.

Pair with

- Slow random CV
- Function generators
- Attenuverters
- Manual offset modules

Specific module ideas

- **Batumi, Ochd, Delta-V, Maths, Sapèl, Marbles, Sloths**
- **Happy Nerding 3xMIA, Frap 321, Quadratt** for dialing in Chance CV range

Patch tip

A very small modulation depth on **Chance CV** can make a huge musical difference.

Use attenuation.

5. Clock extractor / rhythm miner for messy signals

The manual notes that the clock input turns any signal crossing 1V into a pulse for driving the counters. That means Rung Divisions can derive usable timing from weird sources.

Patch concept

Feed into **Clock**: - a raw oscillator - a complex LFO - a burst generator - a comparator output - audio loops from an external source after gain/comparison

Then use divided outputs and buses as structured rhythmic extractions from that source.

Great source modules

- **Comparator / window comparator**
- **Envelope follower**
- **External input preamp**
- **Chaos oscillator**

- **Burst generator**

Specific module ideas

- **Joranalogue Compare 2**
- **Doepfer A-119**
- **Frap Falistri** as a cycling source
- **NLC / chaotic function generators**
- **SSF Ultra Random Analog**

Musical use

Take a complex source and derive: - regular-ish percussion clocks - unstable resets - changing melodic clocks - subharmonic structures at audio rate

This is especially strong if you want a patch to feel “played by physics” instead of step-sequenced.

6. Audio-rate subharmonic / organ / digital drone voice

The manual explicitly mentions audio-rate use and PWM-derived subharmonics. This is one of the coolest underused aspects.

Patch concept

- Feed an audio-rate square or pulse wave into **Clock**
- Route several divisions to **Bus1** and **Bus2**
- Listen directly to:
 - /2 to /8
 - **Bus1**
 - **Bus2**
 - **1-bit**

- **3-bit**
- **8-bit**
- Mix them and filter

What happens

You get: - subharmonic pulse trains - organ-like mixtures - digital edge textures - prime-division interference effects

The manual specifically points out how prime divisions like $/5$ and $/7$ create interference-like movement against $/2$.

Pair with

- Mixer
- Filter
- Wavefolder
- LPG
- Resonator
- Stereo effects

Specific module ideas

- **CP3-style mixer** or overdriving mixer
- **Three Sisters, QPAS, Belgrad, Ikarie**
- **Wavefolder** like **Fold 6, Bifold, Serge-style**
- **Mimeophon / FX Aid / Magneto** for spatialized drones

Patch recipe

- Clock input: pulse VCO
- Bus1: $/2 + /5 + /7$
- Bus2: $/3 + /4 + /8$
- Mix Bus1 + Bus2 + 1-bit
- Filter with resonance tracking the original oscillator pitch

This gives a very rich subharmonic stack.

7. Make a chaos feedback instrument

The manual directly suggests this: patch **3-bit** or **8-bit** back into a CV input of the clock source.

Patch concept

- Use a VCO or function generator as the **Clock** source
- Patch **8-bit** or **3-bit** into that clock source's:
 - FM input
 - 1V/oct-ish input for quantized weirdness
 - symmetry/PWM
 - wavefold amount
- Optionally patch **Bus1**, **1-bit**, or **noise** elsewhere in the voice

What happens

This is where Rung Divisions gets very alive: - the clock determines the register evolution - the register output modulates the clock rate - the system finds temporary attractors, bursts, stalls, and lurches

The manual says: - **3-bit** is more burst-like - **8-bit** is more random but still attractor-prone

Best pairings

- Through-zero FM oscillators
- Oscillators with strong linear/exponential FM response
- Function generators that can cycle into audio
- PLLs or tracking filters

Specific module ideas

- **Generate 3, Rubicon 2, Dixie 2+, ZPO**
- **Joranologue Filter 8** self-oscillating and FM'd
- **Falstri / Maths / Rampage** cycling as clock sources
- **Doepfer PLL A-196** for even more unstable lock behavior

Patch tip

Use an attenuator or VCA in the feedback path.
Then you can “play” the onset of chaos.

8. Use it with a sample & hold / track & hold for meta-sequencing

The manual mentions using the 1-bit output to clock a sample and hold that updates the length parameter at the start of each loop. That's a brilliant patch.

Patch concept

- Set up a looping pattern in the shift register
- Take **1-bit** output to clock a **sample & hold**
- Feed random or stepped CV into that S&H
- Send S&H output to **Length CV**

Result

Each time the loop reaches a certain point, the pattern length changes. This creates phrases that reorganize themselves structurally rather than only melodically.

Pair with

- Sample & hold
- Noise/random source
- Quantized random
- Attenuverter

Specific module ideas

- **Mutable Kinks S&H, Doepfer A-148, SSF Ultra Random, Sapèl**
- **Turing Machine / Voltages / Marbles**
- **O_C** for stepped random or quantized CV

Nice extension

Do the same with: - **Direction CV** - **Chance CV** - or switch among different modulation sources via a sequential switch

This gives “form changes” in a patch.

9. Drive a matrix mixer or VC switch network

Because Rung Divisions makes several related gates and CVs at once, it's excellent for routing systems.

Patch concept

Use: - **Bus1** - **Bus2** - **1-bit** - /7 or /8

to control: - VC switches - sequential switches - mute logic - matrix mixers
- preset manager address inputs

Why this is strong

Instead of only triggering notes, Rung Divisions can trigger **signal path changes**.

So the patch can: - switch oscillators - reroute modulation - change effects sends - alternate filters - move voices in stereo

Specific module ideas

- Doepfer A-151 / A-152
- Vice Virga
- Joranalogue Switch 4
- WMD Sequential Switch Matrix
- Livestock Maze
- **matrix mixer** like **AI Synthesis, Doepfer, Bear Modules**

Example

- Bus1 advances a sequential switch for oscillator selection
- Bus2 switches filter routing
- 8-bit controls pitch
- 3-bit controls timbre
- direction gates reverse phrase behavior

That's basically a whole composition engine.

10. Turn it into a bassline machine with reset discipline

Because the divider section can be reset and all outputs syncopate interestingly, you can force large structures on top of smaller chaotic loops.

Patch concept

- Clock from master transport
- Send a slower reset pulse every 1, 2, or 4 bars into **Reset**
- Build a looping sequence with **Chance** mostly high
- Use **8-bit** → **quantizer** → **bass oscillator**
- Use **Bus2** for note gates
- Use **/8** or another slow division to flip **Direction**

Musical effect

You get: - stable phrase centers from reset - evolving note order from direction changes - controlled mutation from chance and length changes

This is much more performance-friendly than fully free chaos.

Pair with

- Master clock
- Reset-capable sequencer environment
- Quantizer
- Bass voice
- Filter envelope

Specific module ideas

- **Pamela's Pro Workout**
 - **Metropolix** as a reset/transport manager
 - **Tempi**
 - **Scales** with stored scales
 - Any solid analog bass VCO/filter combo
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11. Use the noise and XOR behavior as a “data corruption” path

The manual says incoming front-panel data passes through an **XOR gate**, and that this makes the shift register inherently unstable when data is present.

That instability is musically useful.

Patch concept

Patch into **Data**: - noise - a slow square LFO - an envelope comparator - a gate pattern - audio-rate square

Then adjust **Chance** so the data input is partially competing with the loop point.

What happens

The loop gets “corrupted” in intelligible ways: - repeated pattern with bit flips - syncopated glitches - pseudo-random melody mutation - unstable but recurring motifs

Great pairings

- Noise source / random gate source
- Comparator
- Bernoulli gate
- Rectifier / waveshaper / pulse shaper

Specific module ideas

- **Mutable Kinks**

- Joranalogue Compare 2
- Branches / Integra Solum / other probability gate modules
- Schmitt trigger / pulse conditioner

Advanced move

Patch one of Rung Divisions' own outputs back to **Data**: - /5 to Data - or Bus2 to Data - or 1-bit to Data

This creates internally related corruption instead of external randomness.

12. Pair it with LPGs for “West Coast rungler percussion”

Because it can generate stepped CV and strange pulse structures, it's ideal for plucked low-pass gate patches.

Patch concept

- **Bus1 / Bus2 / 1-bit** → LPG trigger inputs
- **3-bit / 8-bit** → oscillator pitch and/or LPG CV
- use a bright oscillator or noise source into the LPG audio input
- modulate **Length** and **Direction**

Result

You get: - pseudo-wooden melodic percussion - unstable pluck lines - repeating but shifting marimba/bongo behaviors

Specific module ideas

- Optomix
- LxD
- Meng Qi DPLPG

- **Natural Gate**
- **Buchla-ish voices or simple sine/triangle oscillators**

This pairing is especially nice because Rung Divisions can be both the **striker** and the **pitch brain**.

13. Use it as a control source for wavetable / macro oscillators

The stepped outputs are ideal for animating digital oscillators without needing a conventional sequencer.

Patch concept

- **8-bit** → pitch or coarse tune via quantizer
- **3-bit** → wavetable position / morph / timbre
- **Bus2** → trigger envelope
- **1-bit** → sync or accent

Great oscillator pairings

- **Plaits**
- **Shapeshifter**
- **Piston Honda**
- **E352**
- **Ensemble Oscillator**
- **Any macro digital VCO**

Why it works

Rung Divisions naturally produces: - correlated pitch and timbre motion - looped or pseudo-random phrasing - directionally altered contours

That creates coherent, “composed” movement instead of disconnected random modulation.

14. Pair with a quantizer that supports scale changes

One especially deep patch is using Rung Divisions not just for notes, but for harmonic structure.

Patch concept

- **8-bit** → quantizer pitch in
- **3-bit** → quantizer scale select / root / transpose CV
- **Bus1** → note trigger
- **Bus2** → transposition or sample-hold trigger
- **/7 or /8** → reset or scale-change pulse

Result

The melody and the harmonic frame both evolve from the same register but at different abstraction levels.

Good pairings

- Quantizers with CV-addressable scales or roots
- Precision adders
- Sequential switches for chord sets

Specific module ideas

- **O_C** custom quantizer apps
- **Sinfonion** if you want to go huge
- **Scales** with external transpose support
- **Bard Quartet**

This is one of the best ways to make the module feel “musical” in tonal systems.

15. Create pseudo-granular trigger clouds with burst modules

Rung Divisions excels when the input clock itself is unusual.

Patch concept

- Feed a **burst generator** or irregular trigger source into **Clock**
- Use divisions and buses to derive smeared rhythm families
- Feed **Bus1** to clock the register
- Use **8-bit** to modulate sample playback position, decay, or filter

Pair with

- Burst generator
- Granular/sample modules
- Envelopes
- VCAs
- percussion voices

Specific module ideas

- **SSF Ultra-Kick / percussive voices**
- **Pam’s burst functions**
- **NE Numeric Repetitor** style trigger patterns
- **Sample players** like **Bitbox**, **Squid Salmple**, **Assimil8or**

This makes excellent broken IDM / electro-acoustic rhythm structures.

16. Exploit direction changes as phrase inversion

Direction is more than a gimmick here because the register is universal and the loop logic flips with direction.

Patch concept

- Set a stable looping pattern with high chance
- Use sparse gates to the **Direction input**
- Derive those gates from:
 - a manual button
 - a slow divider
 - a random gate source
 - a performative pressure controller

Musical use

Direction flips can act like: - retrograde phrase inversion - rhythmic mirror - melodic reversal - "tape turning around" effect

Great pairings

- Manual gate controller
- Pressure controller
- Footswitch gate
- Slow random gate

Specific module ideas

- **Pressure Points / 0-CTRL gate rows**
- **Planar 2 gates**
- **Tetrapad / controller modules**
- **Any button/gate interface**

This makes Rung Divisions highly playable in performance.

17. Cross-patch with other shift-register / Turing-style modules

Rung Divisions gets especially fun when paired with another memory/random sequencer.

Patch concept

Use another shift-register style module as: - clock source - data source - quantizer source - reset source

Or send Rung Divisions outputs into the other module's: - write/lock/probability - address - clock - length

Specific module pairings

- **Music Thing Turing Machine**
- **Benjolin / Benjolin V2**
- **Marbles**
- **Shift-register DIY modules**
- **NLC cellular/chaotic logic modules**

Why this works

You get two different memory systems influencing each other: - one may handle note continuity - the other rhythm continuity - or one controls phrase shape while the other controls density

This is where emergent behavior gets really good.

18. Use it as an animated modulation source, not just a sequencer

A lot of people will patch the 8-bit output to pitch and stop there. But the outputs are equally strong for modulation.

Great destinations for 3-bit / 8-bit

- filter cutoff
- resonance amount
- wavefolder depth
- LPG decay
- delay time
- reverb size
- panning
- sample start
- grains density
- comparator threshold
- another sequencer's transpose input

Patch concept

- 8-bit → filter cutoff
- 3-bit → reverb/delay send
- Bus2 → envelope trigger
- 1-bit → sidechain ducking trigger
- Chance CV slowly modulated

This creates structural modulation that feels phrase-linked.

19. Best module types to combine with Rung Divisions

If you want to build around it, these module types give the most value:

Essential pairings

- Quantizer
- Attenuverter / offset
- VCA for modulation depth
- Master clock / reset source
- Logic module
- Sample & hold
- Sequential switch

Very strong pairings

- Oscillator with good FM
- LPG
- Comparator
- Random voltage source
- Burst generator
- Stereo mixer / panner
- Filter that tracks pitch

Especially synergistic “flavor” modules

- Shift-register / Turing-like sequencers
 - Benjolin-style chaotic modules
 - PLLs
 - Resonators
 - Fixed filter banks
 - Addressed switches
 - Matrix mixers
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20. Three full example systems

A. Self-generating techno brain

- Master clock → Rung Divisions Clock
- Bus1 → kick + bass envelope trigger
- Bus2 → hats/clap trigger
- 8-bit → quantizer → bass VCO pitch
- 3-bit → filter cutoff
- /7 → Direction
- slow random → Chance CV
- S&H → Length CV
- reset every 16 bars

Result: evolving but danceable system with phrase memory.

B. Audio-rate subharmonic drone

- Pulse VCO → Clock
- Bus1 $/2 + /5 + /7$
- Bus2 $/3 + /4 + /8$
- Mix Bus1 + Bus2 + 1-bit
- 8-bit → FM amount on source VCO
- 3-bit → filter cutoff
- noise through LPG using Bus2 triggers
- stereo delay/reverb at the end

Result: organ-meets-digital-chaos drone texture.

C. Two-voice contrapuntal patch

- Clock from Pam's or another sequencer
- Bus1 → voice A envelopes
- Bus2 → voice B envelopes

- 3-bit → quantizer A → VCO A
- 8-bit → quantizer B → VCO B
- slow square LFO → Direction
- random stepped CV → Length CV
- attenuated random → Chance CV
- reset every 8 or 16 bars

Result: mirrored, evolving duet with recurring motifs.

Final performance tips

1. Treat Chance like a memory control

- CW = memory/looping
- CCW = mutation / incoming data
- Mid = unstable life

2. Length is structural

Tiny movements in Length can completely reorganize the phrase.

3. Direction is performative

Patch a manual gate source to it. It's one of the most musical controls on the module.

4. Bus1 is the heart

What you send to Bus1 doesn't just make rhythm—it defines the timing structure of the whole internal register behavior.

5. Use attenuation everywhere

This module gets wild quickly, especially with feedback and CV over chance/length.

Best specific pairing shortlist

If I were assembling a small “Rung Divisions companion rack,” I’d pick:

- **Pamela’s Pro Workout** or other master clock/reset utility
- **Intellijel Scales** or **uO_C** for quantization
- **Joranalogue Compare 2** for extracting and reshaping data/clock signals
- **Doepfer A-151** or **A-152** for routing/sequential switching
- **Maths / Falistri / Contour 1** for modulation and clock source duties
- **Quad VCA / 3xMIA / Quadratt** for modulation control
- **Optomix** or another **LPG**
- **A strong FM-capable oscillator**
- **A stereo filter or effect**
- **A sample & hold/random source**

That combination would let Rung Divisions function as: - sequencer - rhythmic brain - modulation source - chaos voice - performance instrument

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