2hp — Div

- Manual PDF

2hp Div Manual (PDF)

Creating Full-Length Songs with 2hp Div in Eurorack

One of the biggest hurdles in modular synthesis is transforming captivating modular jams into structured, evolving full-length songs. The **2hp Div** is a compact but powerful clock divider/multiplier that, when combined with other modules, is ideal not only for complex rhythms but also for bringing compositional structure and variation to your patches.

What 2hp Div Does (Key Capabilities)

- Two independent clock division/multiplication channels (per channel: divide or multiply by 1, 2, 3, 4, 5, 6, 7, 8, or 16).
- CV control over clock rate allows for external modulation/ sequencing of divisions/multiplications.
- Allows you to extract or generate multiple rhythmic layers from a single clock for different parts of your patch.

Strategies to Structure a Full Song

1. Multi-Part Song Sections with Clock Manipulation

Use Div to create different rhythmic clocks that you can switch or morph between over time to simulate "arrangements" or "sections" in a song. - **Patch Example:**
- Master clock → Div IN.
- OUT 1 (e.g. divided by 4) → Trigger drums.
- OUT 2 (e.g. multiplied by 3) → Trigger envelope for arpeggios or melodic sequencer. - **How to Transition:**
- Modulate RATE knob or send CV from a sequencer or voltage recorder (like Befaco VC ADSR, Voltage Block, or Planar Joystick) to smoothly morph between divisions/multiplications over the course of the track.
- Use precision adders or sequenced voltage sources to automate when Div switches clock divisions (e.g., more open "chorus," tighter "verse," breakdowns at /16 or *16).

2. Polyrhythms and Evolving Grooves

Polyrhythmic shifting is a classic trick to create tension and release, move into breakdowns, or make pattern changes. - **Patch Example:**
- OUT 1 provides a straight clock for hi-hats or percussion.
- OUT 2 set to an odd division (e.g., /5, /7 or *3) clocks another percussion voice or a sequencer, creating evolving rhythmic interplay that can change under voltage control. - Automation:*
- Send stepped or smooth CV to RATE CV to automate these polyrhythmic progressions, aligning with song structure cues.

3. Controlling Song Progression with Logic or Switching

Use Div outputs together with logic modules and sequencers to gate different voices or events at specific times. - **Patch Example:**
- OUT 1 and OUT 2 feed different sequential switches, logic gates (AND/OR/XOR), or clock randomizers. - Select which voices are enabled/triggered in sections ("verse" vs "chorus") by routing those gates to VCAs, muting, or clocking envelope/trigger sequencers.

4. Dynamic Fill Sections and Transitions

Automate sudden tempo shifts or clock muting for fills, breakdowns, or build-ups. - **Patch Example:**
- Use a trigger, manual gate, or sequencer to send sudden CV jumps to the RATE CV, quickly shifting OUT 1 or 2 for tempo-doubling, triplets, or massive slowdowns. - Perfect for automated drum fills or re-triggering melodic patterns for dramatic effect.

5. Phrase Sequencing & Macrostructure

If you have a phrase sequencer or voltage memory/recorder (like Ornament & Crime, 1010 Toolbox, or similar): - Sequence phrases or song sections with stored voltages that recall different Div clock settings for various channels, syncing all sections to a master timebase. - Use with samplers or melodic parts for classic "song" structure (intro, verse, chorus, bridge, outro).

Typical Companion Modules for Song Structuring

- **Sequencers:** Malekko Voltage Block, Make Noise Rene, Tiptop Z8000, or Erica Black Sequencer.
- **Switches/Logic:** Doepfer A-151, WMD Sequential Switch, 4ms Rotating Clock Divider, Intellijel Plog.
- **Envelope Generators:** Intellijel Quadrax, Maths.
- **Random/Chaos Generators:** Mutable Marbles, Wogglebug.
- **Utilities:** Precision Adder, Attenuators, Sample & Hold.
- **Performance Controllers:** Pressure Points, Planar 2, or CV recorders.

Sample Patch Workflow for a Song

1. **MASTER CLOCK** into **Div IN**.

2. **OUT 1** divided by 4 (kicks, start of track), **OUT 2** divided by 7 (snares, hats—polyrhythm).
3. A **sequencer** or **CV storage module** modulates **RATE 1/2 CV** over time to change rhythm/composition.
4. Use **logic modules** to gate when each rhythmic clock controls other modules—so only certain patterns/voices are playing at certain times.
5. Use a **sequential switch** to switch between different Div outputs, providing instant "scene/cue" style changes.
6. For breakdowns/drops, automate Div to go to extreme divisions/multiplications or stop (for silence or effects).

By thinking of rhythmic clock sources as "sections" and automating division, multiplication, and routing, the **2hp Div** becomes a central tool in providing the macrostructure and movement needed to turn modular jams into full, evolving tracks.
