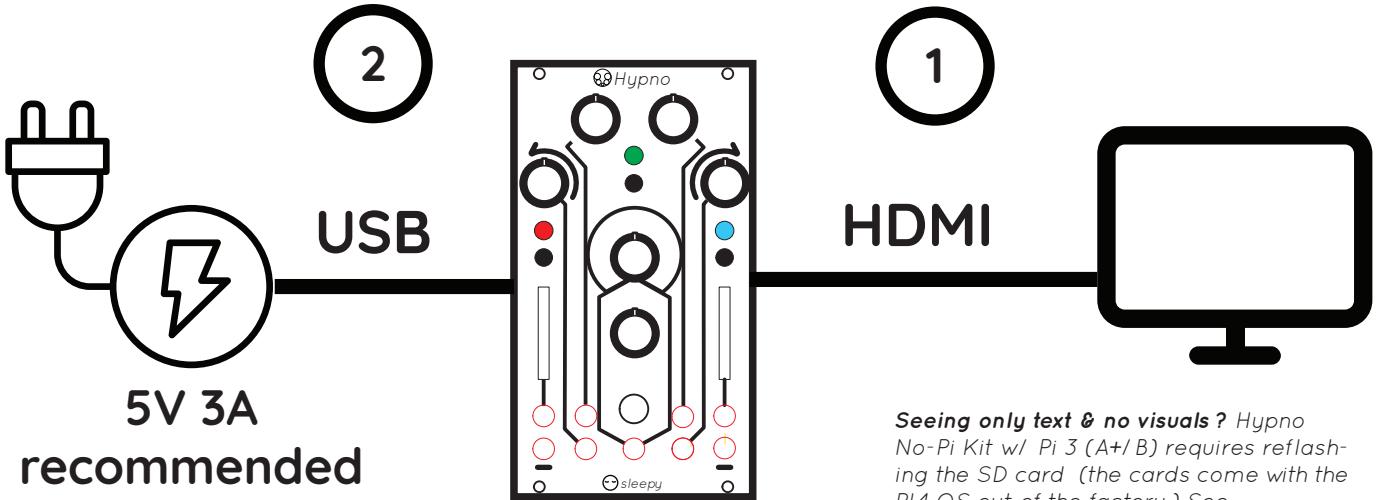


Getting Started



Hypno can be powered from a wall adapter or USB port. It is recommended to have a 3A supply to power Hypno (and any accessories on the USB ports). You will need to plug in the video output (HDMI) 1st and then the power (**follow the order of the circled numbers in the diagram below**). You will see scrolling text on the screen when it is plugged in correctly.



Seeing only text & no visuals? Hypno No-Pi Kit w/ Pi 3 (A+/B) requires reflash-ing the SD card (the cards come with the Pi4 OS out of the factory.) See docs.sleepycircuits.com for instructions.

Hypno Hardware Versions

Hypno is based on the Raspberry Pi mini-computer. The Hypno works with most Pis currently in production to allow for greatest supply flexibility and device availability. **Your setup's wiring will vary based on which version you have.**

The different Pis have a few hardware differences and whether you want to use your Hypno in the Eurorack will dictate which Pi is best for your needs, the Pi is user switchable and source-able by the user (try rpilocator.com) so acquiring a single setup does not prevent you from converting your Hypno to one that is best in the eurorack or vice versa.

CM3 (Discontinued/EOL)

- Dual Role Front USB port (requires adapter for host operation)
- Built-in eMMC Memory for OS (update switch for OS upload)
- Side Micro-USB Power Only Port
- Composite Jack on front panel

PI3 A+ (Deprecated)

- Fits in a Eurorack Case
- Micro USB Power Input
- SD Card Slot
- 1x USB-A
- HDMI Out
- AV Combo jack (use adapter for Composite Out) (Eurorack power requires Adapter Kit)



Note: The Hypno Enclosure is made to support all the Pis at once so the A+ USB port is inset a bit deeper into the enclosure and harder to access when used standalone. For this reason we recommend using the other Pis if you're primarily looking to use Hypno standalone.

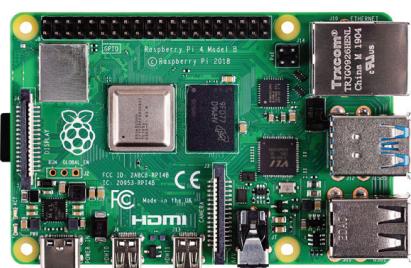
PI3 B+ (Deprecated/EOL)

- Micro USB Power Input
- SD Card Slot
- 4x USB-A
- Ethernet
- HDMI Out
- AV Combo jack (use adapter for Composite Out) (Does NOT Fit in a Eurorack Case)



PI4 (Recommended)

- USB-C Power Input
- SD Card Slot
- 4x USB-A
- Ethernet
- Micro HDMI out (May require adapter to fullsize HDMI)
- AV Combo jack (use adapter for Composite Out) (Does NOT Fit in a Eurorack Case)



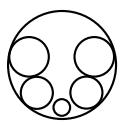
PI CM4 w/ WS-IO (All Back IOs)

- USB-C Power Input
- Built-in eMMC Memory for OS (boot switch for OS upload)
- 2x USB-A
- Ethernet
- HDMI Out
- (Does NOT fit in a Eurorack Case) (No Composite Out!)



All Hypnos (non CM3)

- USB-C Power (on the back)
- 7 CV Inputs
- 2 Trigger Inputs (underlined)
- Expansion Header (for Eurorack Adapter Kit)



Hypno (2.4)



Hypno is an “all-in-one” semi-modular video generator (and sampler!). The panel is organized into mirrored sides for 2 shapes A&B. The centered controls are global. Hypno outputs 720x480 video with composite, HDMI or NDI.

Check out
docs.sleepycircuits.com
for more info!

Polarization / Y Offset



Epilepsy Warning!

Hypno's video output may trigger seizures in individuals with photosensitive epilepsy.



Rotation



USB / IO

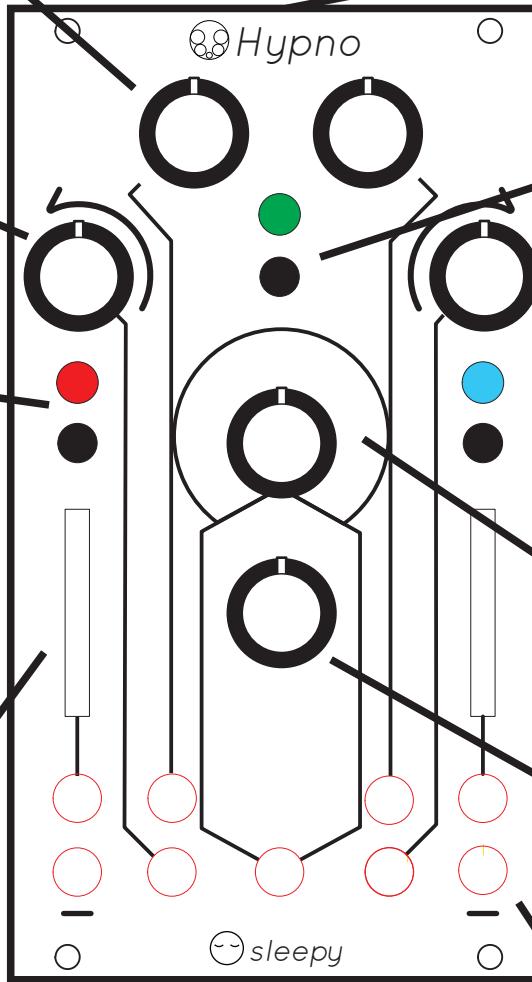
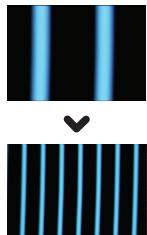
Video Looping via USB Drive Stream to Computer via NDI MIDI Host Capable UVC compliant Video Input

Note: IO differs for Hypno based on Raspberry PI used.

Shape A

- Sin
- Tan
- Poly
- Circle/Oval
- Fractal Noise

Frequency



Feedback

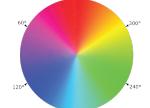
- Regular
- hyper_digital
- Edgy
- Stable Glitch
- Inverted Stable

Gain

Master value of both shapes A&B. Bi-Polar control with blackness at 12 o'clock.

Hue

Color selection shifts color relationship for both shapes A&B at once.



Video Output

HDMI or Composite output PAL or NTSC (switchable via config file). **Some Hypnos require AV Combo jack adapter for Composite Out.**

CV Control (-5V to 5V)

Knobs are connected with a line to their corresponding modulation jack. Subtle smoothing is applied to inputs by default.

Shape Trig Inputs

Triggers on underlined jacks step through the shapes of the corresponding oscillator.

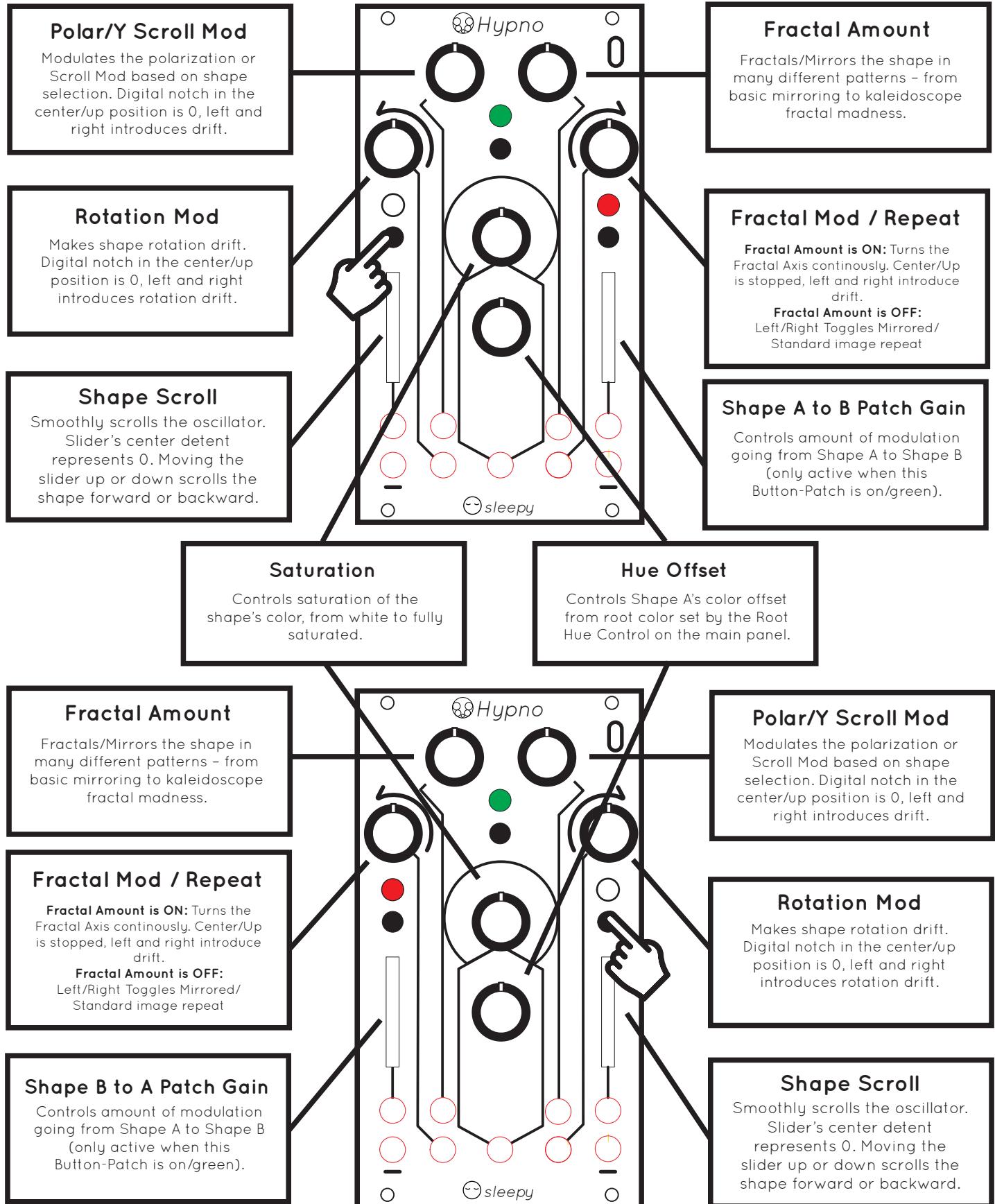


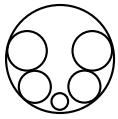
Shape Pages



Holding one of the side buttons on Hypno enters the UI into an alternate state, allowing more detailed control of the Shapes.

Hold a button to open these pages!

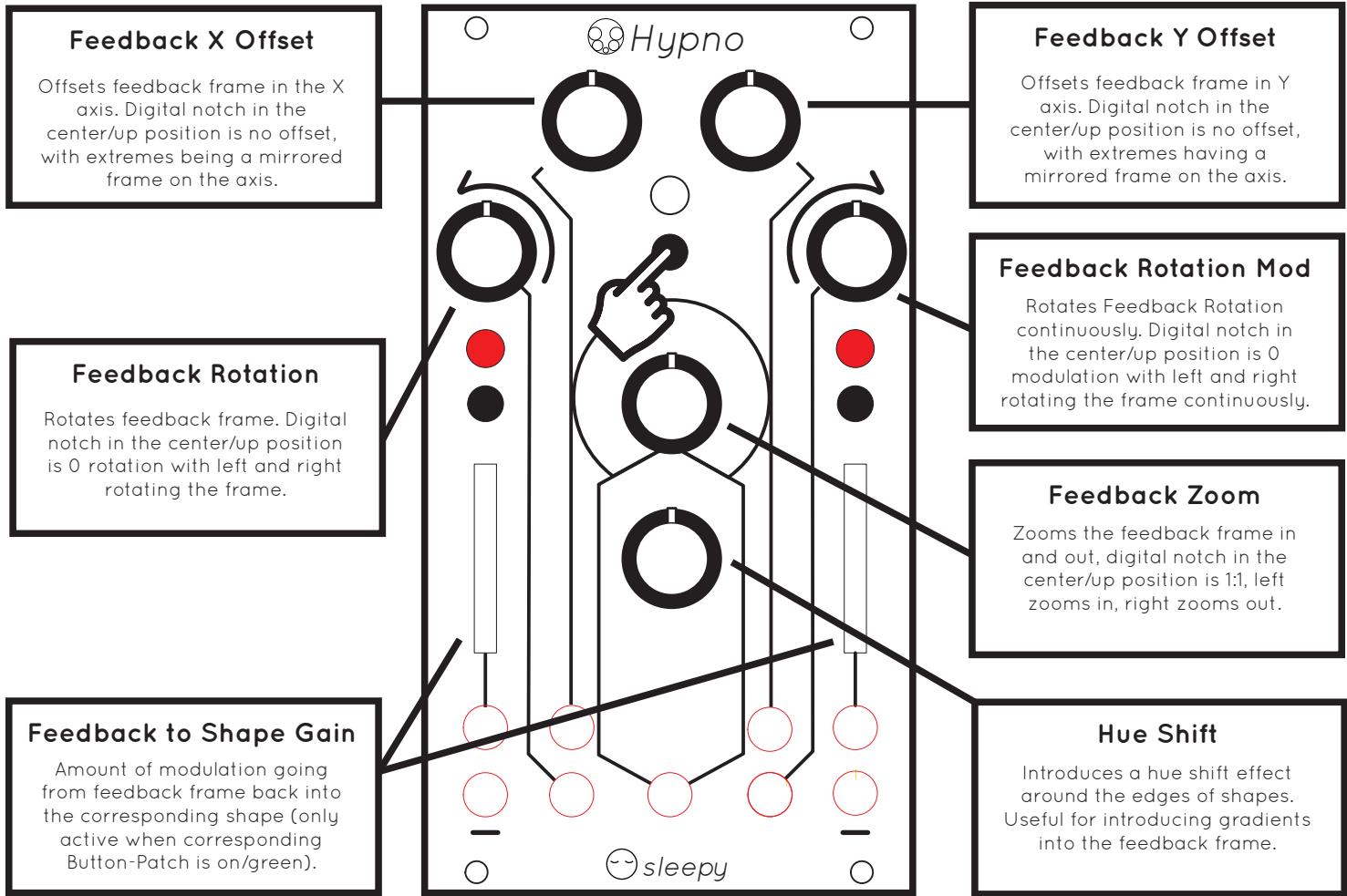




Feedback Page



This page controls Hypno's active feedback mode (indicated by center LED color). The frame is fed back internally for a variety of effects. You can think of this as if a camera is pointing at the screen and feeding the image back into the Hypno, the controls on this page control the position of this 'camera' and associated modulation.



Safety Instructions



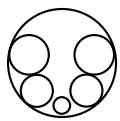
Water is lethal for electric devices. Hypno is NOT intended for use in a humid or wet environment. Liquids or other conducting substances must not get into the module. Should this happen, the module should be disconnected from power immediately, dried, examined and cleaned by a qualified technician.



Do not expose the module to temperatures above +50° C or below -20° C. If you have transported the module in extreme low temperatures, leave it in room temperature for an hour before plugging it in.



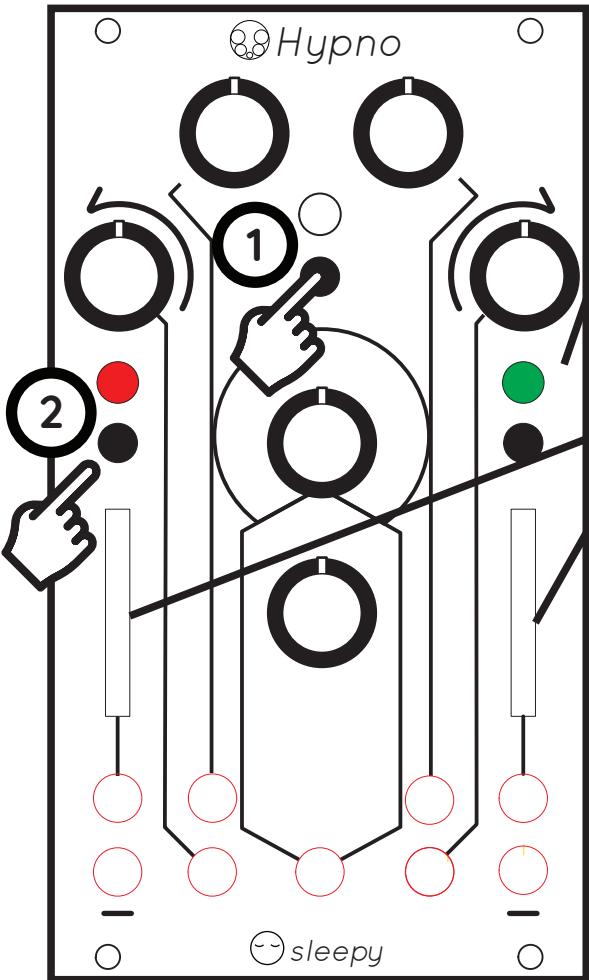
This device complies with EU guidelines and is manufactured RoHS conforming without use of lead, mercury, cadmium or chrome. This device is electronic waste. **DO NOT DISPOSE WITH HOUSEHOLD WASTE.** For proper disposal procedure contact your local electronic waste disposal service or contact us at support@sleepy-circuits.com.



Button & CV Patching



When Button Patching, each button represents a part of Hypno, left button is Shape A, right button is Shape B, middle button is Master Output.



Connection State

If the connection between the section you are holding and the one the button represents is made, the LED is Green, otherwise the connection is red & inactive.

Connection Gain

The sliders directly under the target of the patch controls the magnitude of the modulation, center is 0 with up and down representing positive and negative modulation. When the connection is inactive these controls don't do anything.

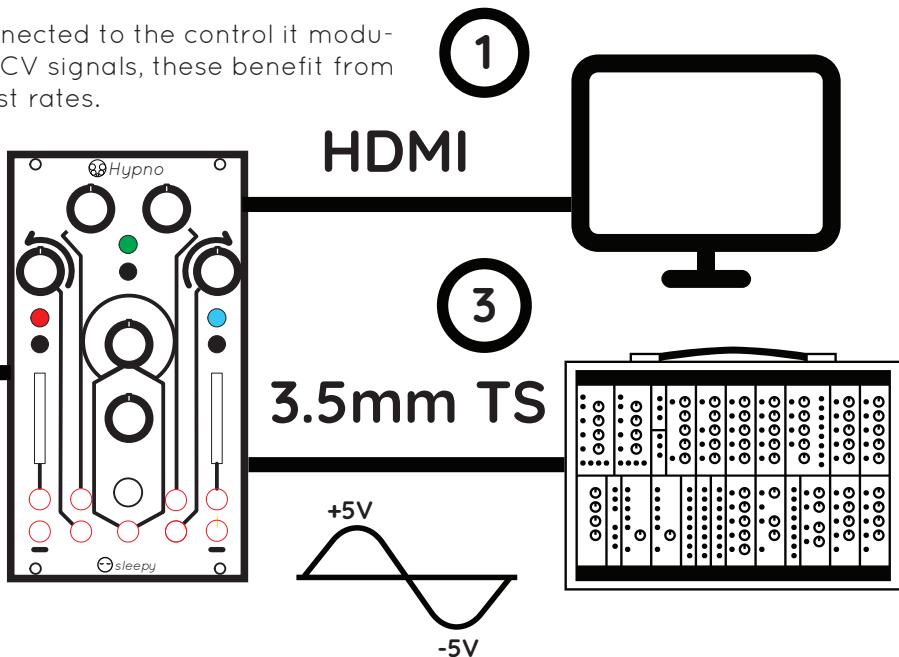
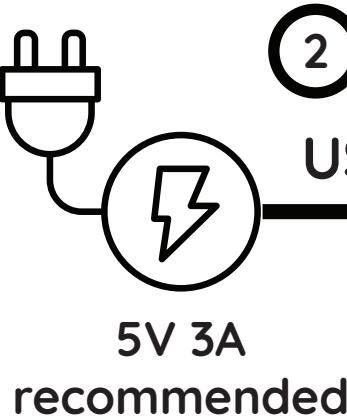
Connection Options / Shape Muting

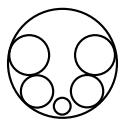
This system can feedback and cross modulate the sections of the engine to create new shapes & effects.

Unpatching a shape out of the master output is a great way to quickly mute a shape. When this is done you can still use the hidden shape as a modulation source for the rest of the connections, this allows you to dial in a more complex single shape patch.

CV Patching

When patching with CV, each jack is connected to the control it modulates by a line. Hypno accepts -5V to 5V CV signals, these benefit from envelope following when operating at fast rates.





Live Input & Sampling

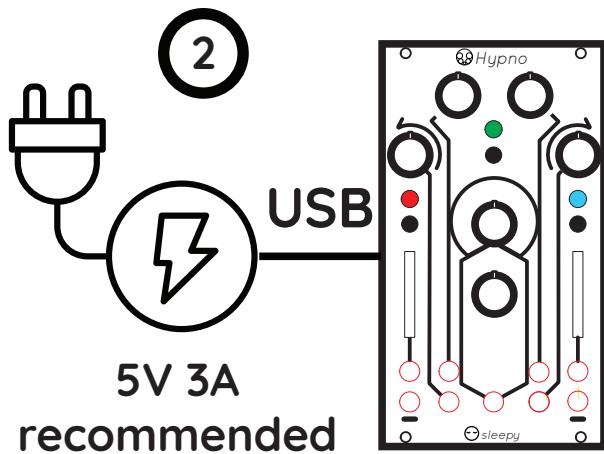


1. Getting Input

Hypno's front USB port supports **USB Drives & USB 2.0 UVC compliant devices that support a MJPEG output mode**. You can plug in a variety of cameras and capture cards into the USB ports via a Micro-USB to USB-A adapter (or directly with most Hypnos).

- a. Plug in the USB via the front/back USB port
- b. Plug the UVC device or USB Drive into the adapter.
- d. After a short delay, you will see Shape A light up in a new color. Now you have an input shape!

Live Input



2. The Input Shape

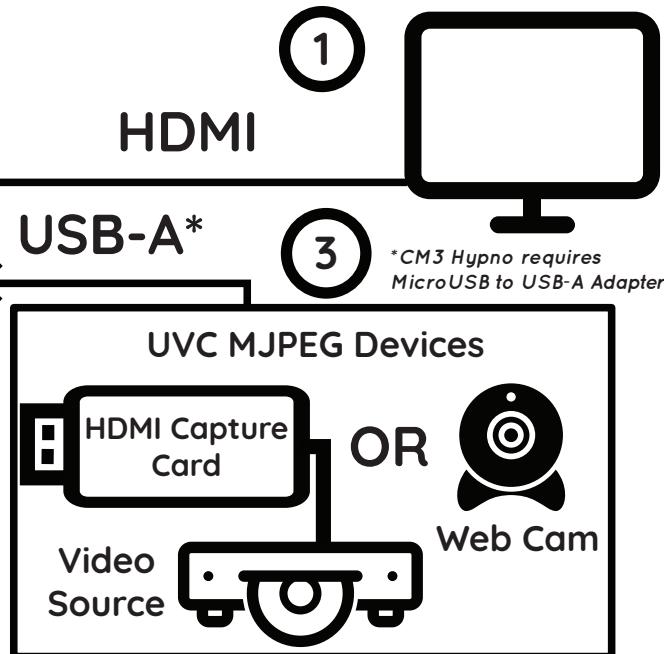
The video input is accessible as a 6th shape in the LED Shape selection on either side.

The standard panel controls operate normally as if the video input was a shape with a few exceptions:

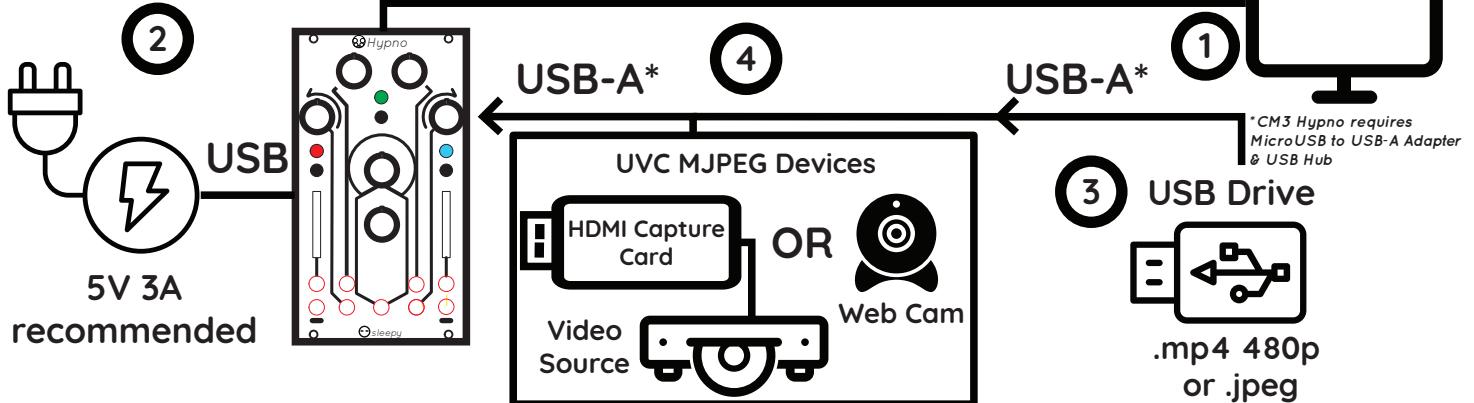
- Putting the frequency slider all the way down does not turn off the video feed

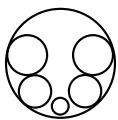
Only one input source is supported at one time, it is copied for both shapes.

Live Video input into Hypno has a slight delay. Give the lil friend a break, it's doing a lot!!!



Switch-able Live Input & USB Drive Sampling





Input Shape Pages

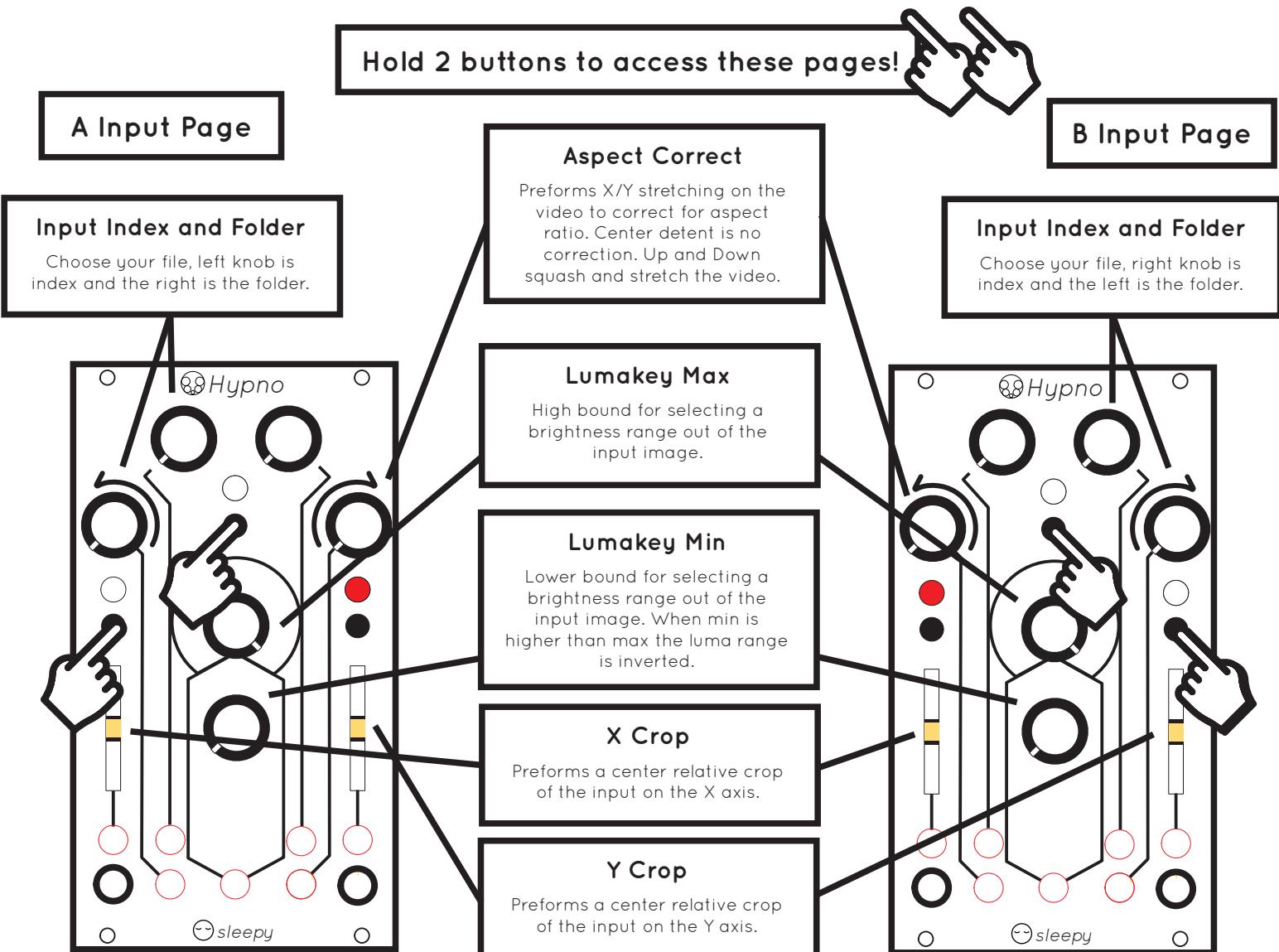


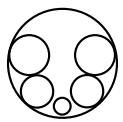
Holding 2 buttons while using the input shape brings up the advanced shape pages. These pages contain useful utilities for dialing in the look of your input feed (Aspect Correction, Lumakeying and Cropping) and selecting the source that is currently being sampled.

When both a USB Drive and UVC live input are plugged in the Video Index can live switch between the two types of inputs (the left CCW position of the video index control selects the live input).

Input Files on the USB Drive can be organized with a single level folder structure. These **folder and file names can be displayed on screen by activating Help Mode & moving the "Input Index & Folder" controls.** (See Presets & Help Mode section in this guide) This is a great way to prepare content for your performances or explore video packs.

Hypno accepts 720x480 .mp4 or .jpeg files. **Use the startup USB format combo** & see docs.sleepycircuits.com for detailed guidance on drive formatting & preparing files for USB sampling on your computer via Handbrake.





Advanced Shape Pages



Holding 2 buttons while using the internal shapes brings up the advanced shape pages. These pages give you even further control over the builtin shapes. Use Lumakeying, Cropping, Extra Waveshaping and more to dial in your shapes!

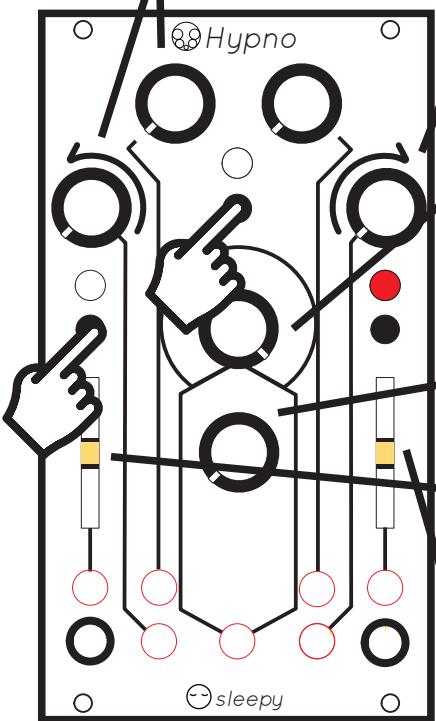
(These controls are the same as the Input Shape Page with logical alternatives for use with the internal shapes)

Hold 2 buttons to access these pages!



A Advanced Shaping

Not Mapped



All: Aspect Correct

Performs X/Y stretching on the shape.

Poly: Number of Sides

Number of sides for the poly shape. Triangle to Decagon.

All: Lumakey Max

High bound for selecting a brightness range out of the shape.

All: Lumakey Min

Lower bound for selecting a brightness range out of the shape. When min is higher than max the luma range is inverted.

Poly, Circle: X Crop

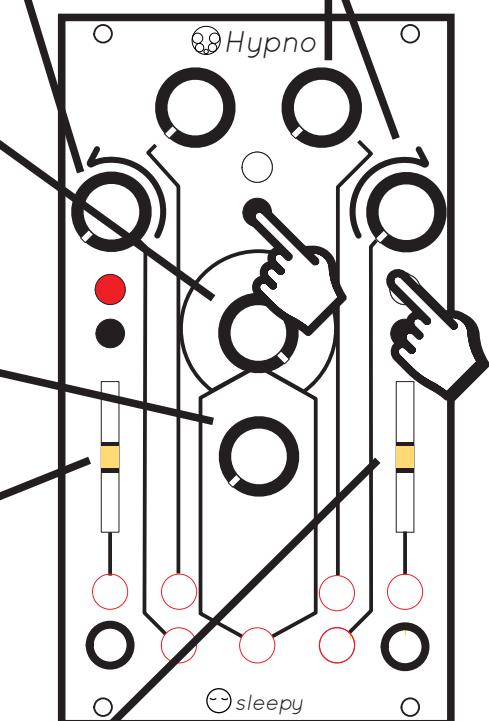
Performs a center relative crop of the input on the X axis.

Sin, Tan: Extra FM Wave

Adds an extra modulation wave on the opposite axis. Enables more complex shapes.

B Advanced Shaping

Not Mapped

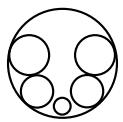


Poly, Circle: Y Crop

Performs a center relative crop of the input on the Y axis.

Sin, Tan: FM Waveshape

Performs a center relative crop of the input on the Y axis.

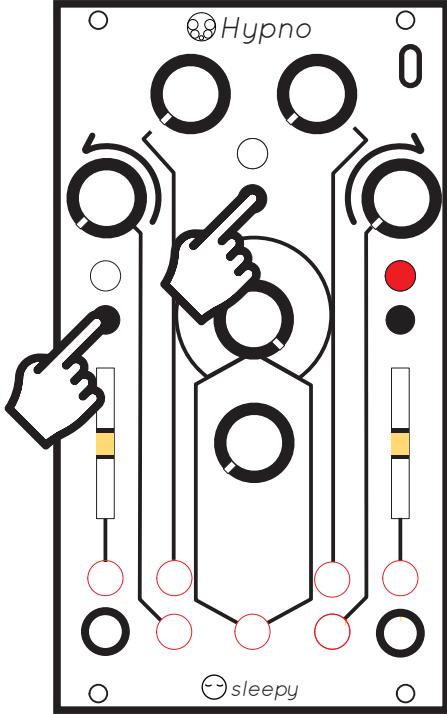


Presets & System Settings



Each of Hypno's buttons represent a preset slot. Holding 2 buttons lets you access the slot on the 3rd button. Presets save the state of all of Hypno's controls in all of the pages, if a video or image is loaded it is saved via its filename.

Anytime a USB drive is plugged in, presets are saved to the removable drive.



Hold 2 buttons to access presets!

Save: Hold the 3rd button, you will see the LEDs light up from left to right (3 seconds). When all the LEDs turn green, the preset has been saved.

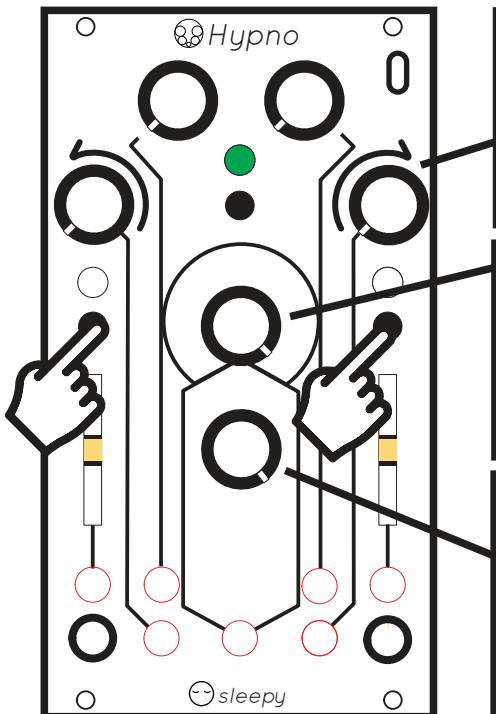
Load: Tap the 3rd button to recall the last stored preset.



Quick Tip: Make an "Init" Patch!

When Hypno starts up it will be in the default state, save this to a preset slot to always have access to an initialized state. Or make your own "initial" state.

Planning a set? Need more presets? Try MIDI! Plug in any midi keyboard and each of the keys now becomes a preset slot. Hold the key for 3 seconds to save to the slot (the saving animation will play on the LEDs.) Tap the key to recall that preset. See MIDI chart on next page.



Render Resolution Scaling

Hold the 2 side buttons and turn the right knob to select a resolution scale for the engine, resolutions are scaled by powers of 2. **This not a live control since an engine restart is required.** This is a good way squeeze extra frames out of the video sampling and/or set a more pixelated aesthetic for your session.

Center CV Remap Gain/Hue

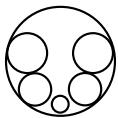
Hold the 2 side buttons and turn this knob all the way to the right to remap the center CV to control Hue instead of Gain.

Turn this knob back to the left for the default gain center CV mapping.

Help Mode

Hold the 2 side buttons and turn this knob all the way to the right / CW to enable help text. This mode displays the label of the last moved control on screen.

When selecting files on the USB drive, help mode displays the name of the folder or file you are currently navigating.



MIDI

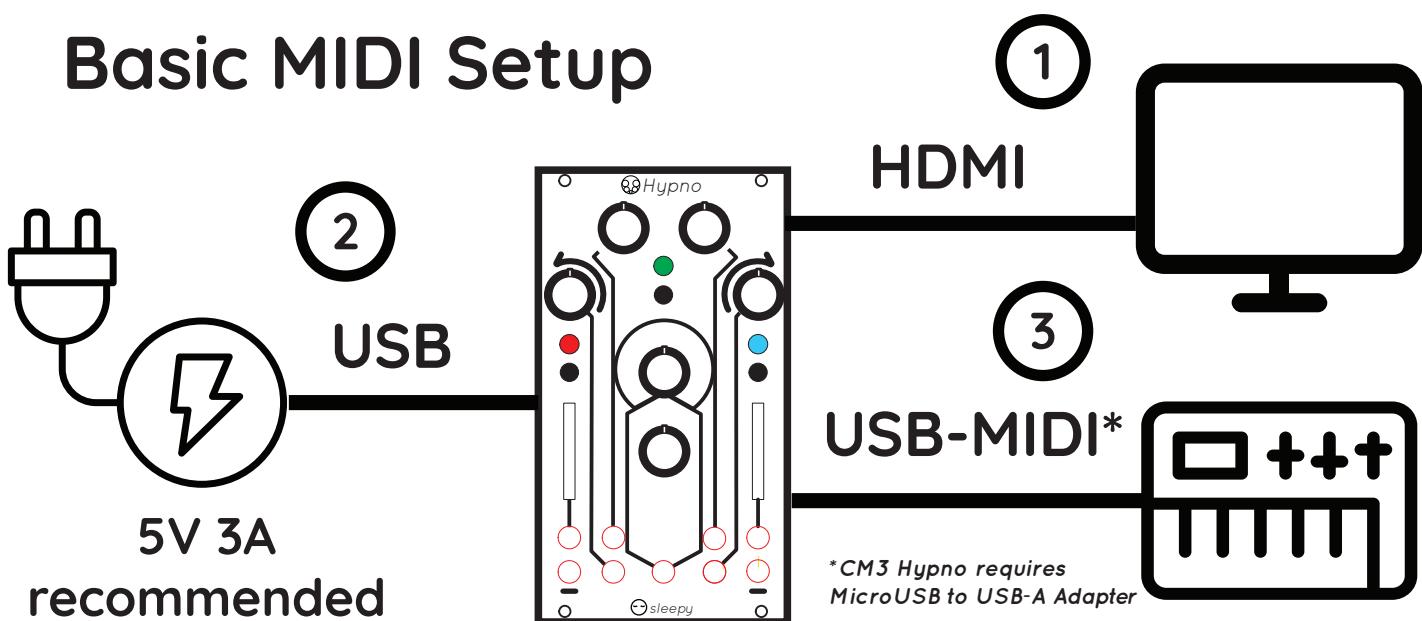


Hypno can act as a USB-MIDI host through its rear USB-A ports (or front micro-USB port for CM3), allowing you to edit or animate the module's parameters with MIDI controllers, keyboards and more. In some cases, a USB OTG (microUSB adapter) is necessary. A list of recommended adapters and known-compatible MIDI devices is available on forum.sleepcircuits.com.

All messages are received on Channel 16. In addition to extra preset slots & shape toggle via note messages, MIDI also allows external control of every aspect of the Hypno via CC messages.

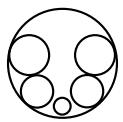
MIDI CC Echo is enabled by default; The below map's CC values are sent back to the MIDI controller to set the values internally. Additionally, you can send Hypno Note 117 to ask for full echo of all controls.

Basic MIDI Setup



MIDI CHANNEL 16											
Main Page		OSC A Page		OSC B Page		FB Page		Video Page A		Video Page B	
Message	Name	Message	Name	Message	Name	Message	Name	Message	Name	Message	Name
CC 1	Frequency A	CC 9	Drift A	CC 17	Drift B	CC 25	FB->A Gain	CC 33	X Crop A	CC 41	X Crop B
CC 2	Color	CC 10	A Color Offset	CC 18	B Color Offset	CC 26	FB Hue Shift	CC 34	Lumakey Min	CC 42	Lumakey Min
CC 3	Frequency B	CC 11	A->B Gain	CC 19	B->A Gain	CC 27	FB->B Gain	CC 35	Y Crop A	CC 43	Y Crop B
CC 4	Master Gain	CC 12	Saturation A	CC 20	Saturation B	CC 28	FB Zoom	CC 36	Lumakey Max	CC 44	Lumakey Max
CC 5	Rotation A	CC 13	Self-Mod Rotation A	CC 21	Self-Mod Rotation B	CC 29	FB Rotation	CC 37	File Index A	CC 45	Aspect B
CC 6	Rotation B	CC 14	Fractal Axis A	CC 22	Fractal Axis B	CC 30	FB Rotation Self-Mod	CC 38	Aspect A	CC 46	File Index B
CC 7	Polarization A	CC 15	Fractal Amount A	CC 23	Fractal Amount B	CC 31	FB X Offset	CC 39	Folder A	CC 47	BLANK
CC 8	Polarization B	CC 16	Self-Mod Polar/Fractal A	CC 24	Self-Mod Polar/Fractal B	CC 32	FB Y Offset	CC 40	BLANK	CC 48	Folder B
Note ON/OFF		OTHER / EXCEPTIONS (2.4+)		Button Patching Toggles (2.4+)		Button Mode Indexing (2.4+)					
Message	Name	CC 0	IGNORED	Note 127	Toggle A->B	CC 49	Shape Index A				
Any Other Note Above 2	Preset Save/Recall	Note 117	State Echo Request	Note 125	Toggle A->Main	CC 51	Shape Index B				
Note 118	Toggle A Shape			Note 124	Toggle B->A	CC 50	FB Mode Index				
Note 121	Toggle B Shape			Note 122	Toggle B->Main						
Note 123	Toggle FB Mode			Note 120	Toggle FB->A						
				Note 119	Toggle FB->B						

Note: Hypno is currently a midi host only, this means that hypno is unable to be a midi device but can be a host to other controllers (it does not work as a device with a laptop computer as a host without additional hardware).



Startup Holds & Config

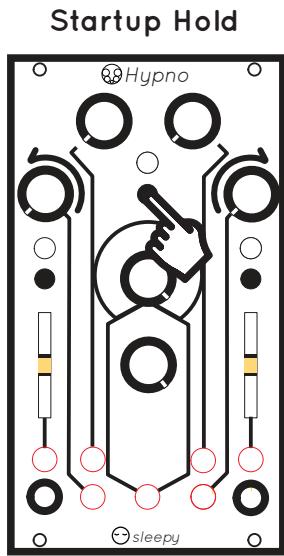


Holding one of Hypno's buttons during startup activates utility functions.

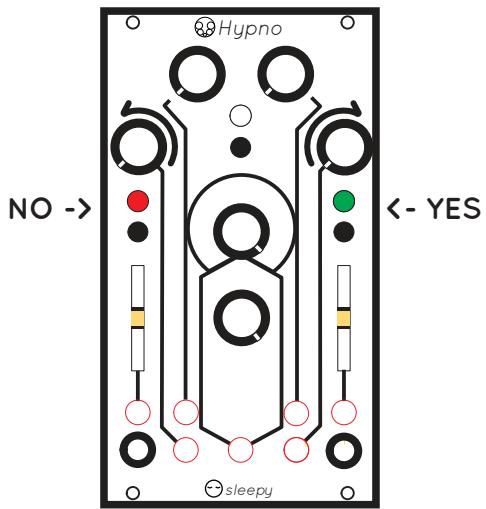
USB Drive Format

This function formats the first available USB drive to Fat32 and places a sample video on the drive for use with Hypno's video sampling capabilities.

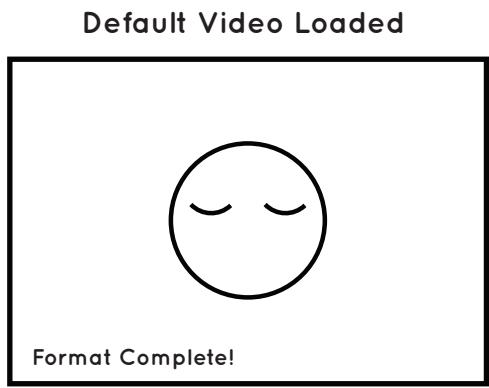
Careful! This will erase your drive.



Startup Hold



Confirmation Prompt



Default Video Loaded

Compatibility Settings via config.txt

Certain functions that could not be achieved in the realtime engine are implemented via the text file found at /boot/config.txt. **Do not change this file unless you are confident in what you are doing** since this controls settings for the whole raspberry pi. Sleepy functions are added at the end of the file. Lines with the "#" character are "commented out" (disable) the line. See Raspberry Pi's documentation about config.txt for more info.

To edit this file you will need to either insert your SD card into a computer or set your hypno to flashing mode by flipping the boot switch and connecting to a computer via the correct USB port if it has internal eMMC (Compute Module Variants). See flashing procedure on docs.sleepycircuits.com

hypno_preferred_width= -1

-1 indicates no preference; this function works/is necessary on pi4 only. Replace "-1" with the exact width (example line: hypno_preferred_width=1080) of a desired display mode (EDID) you found in your display's data sheet. This is helpful in the rare case that the Hypno is auto selecting the wrong display mode for your output.