

Spherical Wavetable Navigator Cheat Sheet #1: Channels, VCOs, Navigation

Octave/Scale Knob

Octave transposes pitches by octaves.
 Push-turn: **Scale** selects quantization of channels (see Scales Quantization chart)

Panning

Button A + slider adjusts panning of each channel

Volume

Sliders adjust channel volume

Channel CV jacks (6) and 1V/oct – VCA switch

Switch selects whether jacks control pitch (1V/oct) or volume (VCA).
 Jacks are always 1V/oct in Note and Key Mode (see page 2)

Waveform In jack

Audio input jack used in Sphere Recording mode to create new spherical wavetables.
 See Cheat Sheet #3.

Depth/Dispersion knob/jacks

Navigates **Depth** dimension of sphere.
 Push-turn to **Disperse** all channels throughout sphere.

CV Jack voltage ranges:

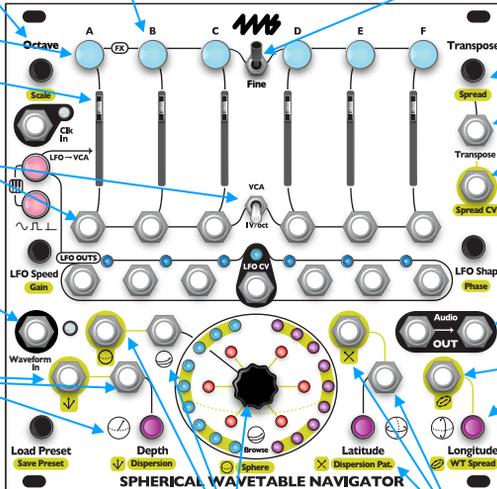
1V/oct & Transpose: 0–10V
 All other CV jacks: 0–5V
 Clock In: 2V threshold

Channel buttons (A/B/C/D/E/F)

Press to mute/unmute.
 Hold down while turning a knob to adjust just that channel's parameter. In Mute mode, buttons mute/unmute each channel. In Key and Note mode, buttons "play" each channel.
 See *Channel Button Modes in Cheat Sheet #2*.

Fine button

Hold down **Fine** button while turning a knob to micro-adjust.



Transpose/Spread knob+jacks

Transpose knob transposes pitch by semitones.

Transpose Jack controls pitch (1V/oct) for all channels.

Push-turn knob to **Spread**, moving notes into pre-selected chords.

Spread CV jack adds additional Spreading.

Audio OUT jacks

Stereo audio output.
 Use just right jack for mono.

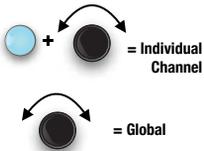
Longitude/WT Spread knob/jack

Navigates **Longitude** dimension of sphere.
 Push-turn to spread sphere selection of all channels.

Latitude/Dispersion Pattern knob/jacks

Navigates **Latitude** dimension of sphere.
 Push-turn to change pattern when using **Dispersion** knob/jack.

Channel Buttons



Adjust a channel individually

Hold one or more channel buttons while turning a knob (or pressing a side button)
 Does not apply to Presets, Spread or Dispersion

Adjust all channels globally

Turn any knob or press a side button, (without holding a channel button down)

Channel Button Modes

- White = Mute mode
- Red = CV/Gate
- Pink = Note trigger
- Purple = Keyboard
- Yellow = CV/Gate/Sus.

Scales (Quantization)

- Light Blue = No quantization
- Dark Blue = Semitones
- Pink = Major scale
- Salmon = Minor Harmonic

Spherical Wavetable Navigator Cheat Sheet #3: Sphere Recording Mode

Enter Sphere Recording mode

Press **Depth + Latitude + Longitude**.
Press again to exit without saving.

Use **Preset** knob to save changes.

FX Buttons

Press **FX button(s)** while turning **Browse** to apply effects to the current waveform.
Press button(s) while push+turning **Browse** to apply to all waveforms in the sphere.
Press button(s) while turning **Depth, Latitude** or **Longitude** to apply to one dimension.
Effect amount will display on the light ring as you turn.
Press Fine while turning to apply effects by smaller amounts.

Start Recording

Press red button to start recording audio from **Waveform In** jack.
Automatically stops when done (about 2.5 seconds).
Press **Fine +** the red button to record just one waveform.

Monitor Recording

Press green button to monitor signal on **Waveform In** jack.

Tune to Test Tone

Press **Fine + green** button to output a test tone (86.13Hz) mixed with signal on **Waveform In** jack. Useful for tuning audio source by listening to "beats".

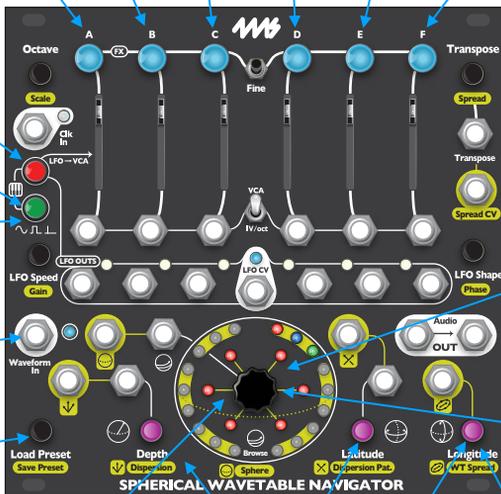
Waveform In Jack

Patch audio source here. About 2.5 seconds of audio can be recorded and turned into a spherical wavetable.

Save Sphere

When ready to save, turn knob to select a sphere slot. Press and hold knob until blinks red, then press again to confirm save. Recording mode will exit automatically.

Effects:
Wavefolding Decimator Metalizer Lowpass Filter Level/Normalization Seam smoothness



Waveform Browse

Turn **Browse** to preview the 27 waveforms in the current sphere. *Hold Fine to morph between waveforms.*

Depth/Latitude/Longitude Navigate

Turn these knobs to browse the sphere in one dimension at a time, playing each waveform without morphing between.

Waveform Stretch

Press **Stretch** while pressing and turning **Browse** to stretch each waveform within recording buffer. Overall effect is to lower/raise pitch by octaves. Red/Green/Blue light pattern on light ring will stretch wider or more narrow.
Hold Fine to fine tune stretch.

Waveform Spread

Press **Transpose/Spread** while pressing and turning **Browse** to spread waveforms throughout recording buffer. Red/Green/Blue lights on light ring will spread further or closer.
Hold Fine to spread by smaller increments.

Waveform Shift

Press and turn **Browse** to shift the waveforms around recording buffer. Red/Green/Blue lights will wrap around the light ring.
Hold Fine to shift by smaller increments.

Export Sphere

While Monitoring, tap the **Browse** knob to play the sphere into another SWN.

Enable/Disable Sphere

Tap **Longitude** to enable/disable the sphere that's selected by the **Preset** knob.

LFO OUTS: synchronized ramps and triggers while recording

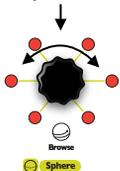
- A: Ramp up for entire duration of recording
- B: Eight ramps for duration of recording
- C: One ramp per waveform
- D: Trigger at start of recording
- E: Trigger per sphere recorded (27 waveforms)
- F: Trigger per waveform recorded

What is Sphere Recording mode?

You can create and save your own 3-dimensional wavetables ("spheres") on the SWN using Sphere Recording mode. Patch your audio source into the **Waveform In** jack and press the red button to record 2.5 seconds into the recording buffer. Use **Waveform Stretch, Spread, and Shift** to select waveforms from the buffer, and apply any combination of effects to any or all of the waveforms. **Browse** and **Navigate** to preview your work and save it when you're done!

Spheres Color Chart

Push + Turn Browse
to select Spherical Wavetable



Spheres (factory)

- Harmonics
- Sine Distortions
- Formants 1
- Formants 2
- Morphing Cello
- Talkative FM
- Distorted FM
- 909 Hits
- Wavefolded Rings
- Smooth Troughs
- Alias Maximizer
- Sine Sequences

Spheres (user)

- User Spheres 1-18
- User Spheres 19-36
- User Spheres 37-54
- User Spheres 55-72
- User Spheres 73-90
- User Spheres 91-108

En/Disable Select Bus:

Enable/Disable Loading Presets:
Hold **Bank B** and **Presets** and tap the **LFO->VCA** button to toggle state. When the button is bright green, the SWN will load presets when it receives "Recall" or "State Select" messages.

Enable/Disable Saving Presets:
Hold **Bank B** and **Presets** while you hold the $\sim \perp \perp$ button for two seconds to toggle state. When the $\sim \perp \perp$ button is bright red, the SWN will save presets when it receives "Save" or "State Save" messages.

Fine Adjustments



- Fine+Transpose** = Fine-tune pitch by micro-tonal steps.
- Fine+Spread** = Detune spread: all channels detune in different amounts.
- Fine+LFO Speed** = Adjust speed continuously instead of integer dividers/multipliers.
- Fine+LFO Gain** = Fine adjust amplitude.
- Fine+LFO Phase** = Fine adjust phase.
- Fine+Depth/Latitude/Longitude/Browse** = Navigate in tiny steps.
- Fine+Dispersion** = Disperse in tiny steps.
- Fine + FX button + Browse** = Micro-adjust FX amount (Sphere Recording mode)

Lock a Channel



Press **Fine + Channel button** to lock/unlock a channel.
Buttons will flash when locked.

Clearing/Resetting

Load a Blank Preset = Reset Everything

Turn the **Presets** knob to select a slot whose light is off. Tap the **Presets** knob twice quickly to load the blank preset.

Clear/Reset LFOs

Press **Presets + LFO Speed**: Resets all speeds to 1Hz.
Press **Presets + LFO Shape**: Resets all shapes to Ramp-down.
Press **Presets + LFO Shape + LFO Speed (2 seconds)**: Resets all LFO settings.

Press **LFO Speed + LFO Shape**: Syncs LFO Phases by toggling between in-phase and sequenced phase (each channel offset 60°).

Clear/Reset Oscillators

Press **Presets + Transpose**: Resets all transpositions and spread.
Press **Presets + Fine + Transpose**: Resets all fine tuning and detuning.
Press **Presets + Octave**: Resets all channels to the same octave.
Press **Presets + Latitude**: Resets sphere selections.
Press **Presets + Depth**: Resets navigation.

Undo Load/Save/Clear Preset

Press **Fine + Presets** to undo/re-do last preset action.

Calibrate 1V/oct Jacks

Press **Octave + Transpose**. Buttons will turn blue.
Patch keyboard/seq. to Channel A's 1V/oct jack.
Play a C1 (1.00V) on the keyboard or sequencer.
Press Channel A's button (it will turn red)
Play a C3 (3.00V).
Press Channel A's button again (it will turn white).
Hold **Browse** knob down for 6 seconds to save.
Optionally can repeat for each channel separately (and Transpose).

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