

# 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 color chart)

## Sliders

Volume of each channel.

## 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 Cheat Sheet #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

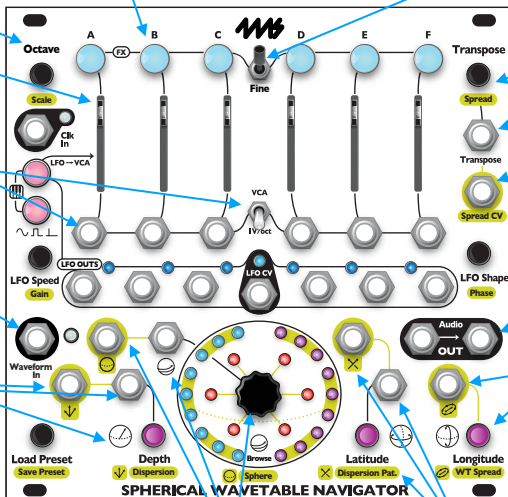
## Channel buttons (A/B/C/D/E/F)

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



= Individual Channel



= Global



## 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
- Pink = Note trigger mode
- Purple = Keyboard mode

## Scales (Quantization)

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

# Spherical Wavetable Navigator Cheat Sheet #2: LFOs, Key Modes, Presets

## Channel Button Modes

(press both LFO buttons at the same time)

Toggles function (and color) of channel buttons:

-Mute/unmute (white)

-Note w/ASR envelope (orange) auto-triggers when 1V/oct changes

-Keyboard w/AR envelope (purple)

## Clock In jack

Syncs LFOs to external clock.

## LFO->VCA button

Internally routes each channel through a VCA controlled by the channel's LFO. Useful for arpeggiations/sequences.

## LFO Type button

Toggles LFO output:

-Waveshape

-Gate

-Trigger

## LFO Speed/Gain knob

Speed of LFOs (divide/multiply main clock)

Push+turn: adjusts LFO Gain (amplitude) output on jacks.

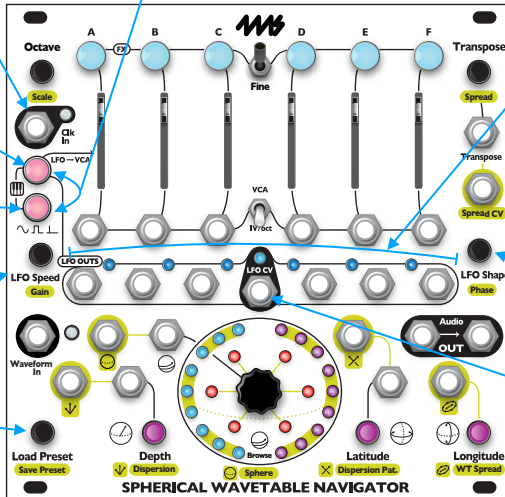
## Load/Save Preset knob

Turn to select preset slot, then:

-Tap, then tap again to load.

-Press 2 sec, then tap to save.

-Press 6 sec, then tap to delete.



## LFO OUT jacks (6)

Outputs channel's LFO or envelopes with 8V maximum amplitude (attenuate with Gain knob).

Lights above each jack shows tempo and waveshape.

## LFO Shape/Phase knob

Selects LFO waveshape. (See color chart below)  
Push+turn to adjust LFO Phase.

## LFO CV jack

CV controls speed of LFOs.

## LFO Waveshapes



### Saw (Ramp-down)

- Saw 100%
- Saw 75%
- Saw 50%
- Saw 25%
- Saw 12%

### Ramp-up

- Ramp-up 100%
- Ramp-up 75%
- Ramp-up 50%
- Ramp-up 25%
- Ramp-up 12%

### Utility

- Sine
- Triangle
- Steady DC

### Complex Shapes

- Complex Shape 1
- Complex Shape 2
- Complex Shape 3
- Complex Shape 4
- Complex Shape 5
- Complex Shape 6

### Complex Shapes (con't)

- Complex Shape 7
- Complex Shape 8
- Complex Shape 9
- Complex Shape 10
- Complex Shape 11
- Complex Shape 12

# 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.*

## Waveform Stretch

Press **Octave** 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.*

## Depth/Latitude/Longitude Navigate

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

## Start Recording

Press red button to start recording audio from **Waveform In** jack.  
Automatically stops when done (about 2.5 seconds).

## 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".

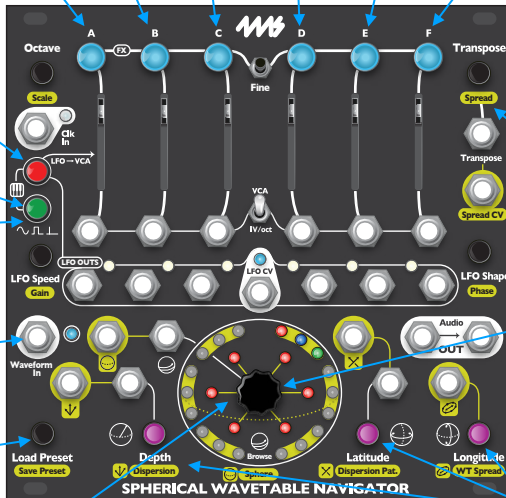
## Waveform In Jack

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.*

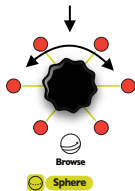
## LFO OUTS: synchronized ramps and triggers while recording

- A: Ramp up for entire duration of recording
- B: 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 (Inner Light Ring)



Push + Turn Browse  
= Select Spherical Wavetable

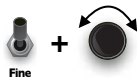
### Spheres (factory)

- 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

## Fine Adjustments



Fine + Turn knob  
= Micro Adjustment

**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)

## 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 + Depth + Latitude**: Resets all 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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