

# Nostromo Spectral Synthesizer

## Operation Manual

Version 1.0.0

Document 1.2



# Table of Contents

[Table of Contents](#)

[Introduction](#)

[Oscillators](#)

[Voices](#)

[Keyboard Tracking](#)

[Pitch](#)

[Voice Detune](#)

[Key Sync](#)

[Sweep LFO Section](#)

[Sweep Phase](#)

[Sweep Voice Offset](#)

[Sweep Rate](#)

[Sweep One Shot](#)

[Sweep Waveform](#)

[Spectrum Table](#)

[Selecting and Editing a Slot](#)

[Dragging a Slot](#)

[Empty Waveform](#)

[Silence Waveform](#)

[Spectrum Catalog](#)

[Crossfade](#)

[Stereo Pan](#)

[Voice Stereo Spread Width](#)

[Level](#)

[Filter Select](#)

[Edit Tools](#)

[Filters](#)

[Mode](#)

[Frequency](#)

[Resonance](#)

[Envelope Amount](#)

[Envelope Invert](#)

[Velocity](#)

[Keyboard Follow](#)

[Level](#)

[Serial Routing](#)

[Envelopes](#)

[Velocity](#)

[Delay](#)

[Attack](#)

[Hold](#)

[Decay](#)

[Sustain](#)

[Release](#)

[Loop](#)

[Gate](#)

[LFOs](#)

[Key Sync](#)

[Phase](#)

[Keyboard Follow](#)

[Rate](#)

[One Shot](#)

[Waveform](#)

[Delay](#)

[Lag](#)

[External Audio Input](#)

[Level](#)

[Filter Select](#)

[Modulation Matrix](#)

[Modulation Sources](#)

[Modulation Destinations](#)

[Delay](#)

[Enable](#)

[Tempo Sync](#)

[Time](#)

[Offset](#)

[Ping Pong](#)

[Mod Rate](#)

[Mod Amount](#)

[Feedback](#)

[Dry/Wet](#)

[Reverb](#)

[Enable](#)

[Decay](#)

[Dampening](#)

[Size](#)

[Dry/Wet](#)

[Global](#)

[Master Level](#)

[Polyphony](#)

[Legato](#)

[Portamento](#)

[Drift](#)

[Note Activity](#)

[Performance](#)

[Pitch Bend Range](#)

[Pitch Bend](#)

[Modulation Wheel](#)

[Back Panel](#)

[Sequencer](#)

[Modulation In](#)

[Modulation Out](#)

[Modulation Matrix In](#)

[Modulation Matrix Out](#)

[Audio In](#)

[Tips and Tricks](#)

[Hidden Parameters](#)

[External/Manual control of the sweep](#)

[Control of the sweep from the Mod Wheel](#)

[Control of the sweep from a Combinator](#)

[Control of the sweep from an external source](#)

[Identifying waveforms visually](#)

[The rhythmic half-morph](#)

[Modwheel scratch](#)

[Timbre S&H](#)

[Patch Contributions](#)

[Acknowledgments](#)

[Remote Items](#)

# Introduction

Nostromo is a spectrum-table based synth for the Reason Rack, designed to provide a never-ending source of auditory modulation and changing textures. It provides three independent oscillator sections, each containing a sweepable, nine-slot spectrum-table. Fill your table from the 2000+ spectrum catalog to produce infinite sonic combinations. Each oscillator contains a dedicated table-sweep LFO with 200 different waveforms. Crossfade each oscillator section between 2 multimode stereo filters, hosting analog modeled ZDF filters, saturating comb filters, and amplitude/ring modulations. Sculpt your sounds with four DAHDSR looping envelopes, three additional LFOs, and massive modulation matrix providing 42 modulation sources, 115 modulation destinations, 8 external CV ins, and 8 external CV outs. External audio inputs are also provided to allow Nostromo to act as a dual filter and effects device.

Ø' [ } 0Úæ ^|Á

Óæ& ÁÚæ ^|

# Oscillators

Nostromo has three oscillator sections. Each has up to 8 voices sounding in unison and a dedicated table-sweep LFO.

*U•&ajæf /ÁËÁ ã@U] ^&d˘ { ÁCææf \* Á*

## Voices

Number of sounding unison voices, 0-8. Setting to zero will turn off the oscillator.

## Keyboard Tracking

How much the oscillator pitch tracks incoming note data. At 0%, the pitch is fixed regardless of played note, at 100%, the pitch matches the incoming note.

## Pitch

- **Octave** adjust the oscillator pitch +/- 4 Octaves
- **Semitone** adjust pitch +/- 24 Semitones
- **Cents** adjust pitch +/- 100 Cents

## Voice Detune

Detunes the unison voices from each other. The more unison voices active for the oscillator, the further apart the tuning will be. Detune has no effect when the **Voices** parameter is set to 1.

## Key Sync

Synchronizes all oscillators to a phase of zero on key-down. Useful for percussive sounds you want to sound identical on each attack. Deactivate for free-running oscillators.

## Sweep LFO Section

This section controls the dedicated LFO that sweeps the read position of the spectrum-table.

### Sweep Phase

Sets the phase of the Sweep LFO and the initial phase on key-down. Setting the **Rate** to zero allows **Phase** to sweep the LFO wave manually.

### Sweep Voice Offset

Sets an offset to the read position for each unison voice. Detune has no effect when **Voices** is set to 1.



### Sweep Rate

Sets the rate at which the LFO sweeps the spectrum-table. Free rates range from 0.0Hz to 50.0Hz. Available Synced Rates: 32/4, 28/4, 24/4, 20/4, 16/4, 12/4, 8/4, 7/4, 6/4, 5/4, 4/4, 7/8, 3/4, 5/8, 2/4, 7/16, 5/8T, 3/8, 4/8T, 5/16, 1/4, 3/16, 2/8T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64, 1/128.

### Sweep One Shot

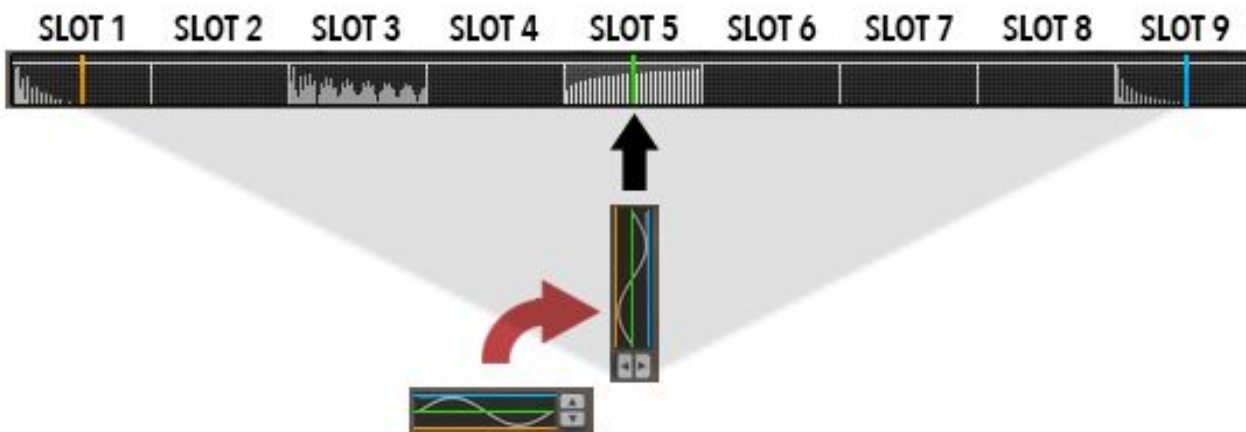
Causes the read position to freeze at the end of one complete sweep LFO cycle.

## Sweep Waveform


Selects the waveform used to sweep the spectrum-table. Waveforms that show a (+) are unipolar and will only sweep the right side of the table. Waveforms that show a (O) are generated randomly and will not cycle.

## Spectrum Table

Placeholder text for the Spectrum Table section.



Placeholder text for the example section.

An example, using Sweep LFO sine wave (5) . Playback starts with the sweep LFO phase reset to zero. Since the LFO value is 0, the read position is center slot 5. As the LFO progresses, it rises to +1, the read position swings right to slot 9. The sine wave then falls back to -1, the read position swings to slot 1. Then the LFO continues back to where it started, zero, and the read position returns to slot 5.

## Selecting and Editing a Slot

Clicking on a slot will highlight it as the target slot for spectrum loading. Once a slot is highlighted, click a spectrum from the spectrum catalog to load it into the slot.

Clicking on a highlighted spectrum slot a **second** time will locate the spectrum in the **Spectrum Catalog**.

## Dragging a Slot

Click+dragging a slot up and down will scroll through the spectrum catalog.





## Empty Waveform

The first category and waveform in the catalog, both called "empty", causes Nostromo to skip over the slot when producing sound. If crossfade is enabled, it will create a fade between the filled slot to the left, and the filled slot to the right. If crossfade is disabled, it will produce the sound of the filled slot to the left.

## Silence Waveform

The third category, called "silence", contains the waveform also called "silence". As the name implies, it simply doesn't produce a sound. This can be used to create rhythmic gate effects (with XFade Off) or pumping effects (with XFade On).

## Spectrum Catalog

The Spectrum Catalog hosts more than 2000 spectrums. Selecting a spectrum in the catalog will change currently selected slot in an oscillator's spectrum-table. The buttons in the lower left can be used to stepwise change the selected spectrum.

## Crossfade

Enables crossfading between spectrums as the LFO sweeps. When disabled, sweeping the spectrum-table can create more rhythmic and distinct timbre changes.

## Stereo Pan

Oscillator's placement in the stereo field.

## Voice Stereo Spread Width

Pans the unison voices away from each other. The more unison voices active for the oscillator, the further apart the panning will be. Offsets are calculated from the **Stereo Pan** parameter. Width has no effect when the **Voices** parameter is set to 1.

## Level

Volume of the oscillator.

## Filter Select

Fades oscillator output into the filter inputs. A value of -100, full counter-clockwise, only sends output to **Filter 1**. A value of 100, full clockwise, only sends output to **Filter 2**. A value of 0, straight in the middle, sends equal output to both **Filter 1** and **Filter 2**.

## Edit Tools

- **Copy** Sets the oscillator's spectrum-table to be the source for the **Paste** operation.
- **Paste** Sets the oscillator's spectrum-table to the contents of the previously **Copied** table.
- **Trash** Clears the table with all empty slots.
- **Random** Fills the table with random spectrums.

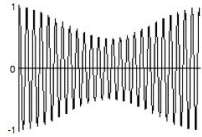

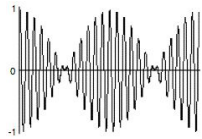
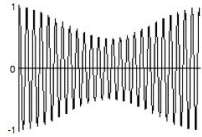

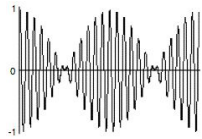
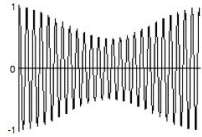

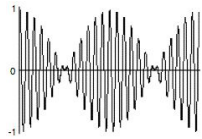
# Filters

The filter section contains 2 multimode stereo filters. Each oscillator section and external audio input can be faded between Filter 1 and Filter 2. By default the filters are parallel, but can be switched to run in serial where Filter 1 is routed into Filter 2. Each filter can be switched between analog modeled ZDF filters, comb +/- filters, and amplitude/ring modulations.

## Mode

Selects the filter mode.

Analog Modeled ZDF, Tapped 4 Pole Topology	
LP24	Low Pass, 4 Pole, 24db/oct
LP18	Low Pass, 3 Pole, 18db/oct
LP12	Low Pass, 2 Pole, 12db/oct
LP6	Low Pass, 1 Pole, 6db/oct
BP24	Band Pass, 4 Pole, 24db/oct
BP18+	Band Pass, 3 Pole, 18db/oct low side, 12db/oct high side
BP18-	Band Pass, 3 Pole, 12db/oct low side, 18db/oct high side
BP12	Band Pass, 2 Pole, 12db/oct
HP24	High Pass, 4 Pole, 24db/oct
HP18	High Pass, 3 Pole, 18db/oct
HP12	High Pass, 2 Pole, 12db/oct

HP6	High Pass, 1 Pole, 6db/oct										
Miscellaneous											
Bypass	Audio pass thru										
Comb +	Saturating Comb with positive feedback										
Comb -	Saturating Comb with negative feedback										
AM/RM	Amplitude Modulation to Ring Modulation										
	<table border="1"> <thead> <tr> <th>Resonance Value</th> <th>Effect</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>None</td> </tr> <tr> <td>0.1-0.2</td> <td>Vibrato  </td> </tr> <tr> <td>0.5</td> <td>Full AM  </td> </tr> <tr> <td>1.0</td> <td>Full RM  </td> </tr> </tbody> </table>	Resonance Value	Effect	0	None	0.1-0.2	Vibrato 	0.5	Full AM 	1.0	Full RM 
	Resonance Value	Effect									
	0	None									
	0.1-0.2	Vibrato 									
0.5	Full AM 										
1.0	Full RM 										

## Frequency

The cutoff frequency of the filter. In the case of AM/RM, the frequency of the modulator.

## Resonance

The feedback in the analog modeled filters creating a peak at the frequency. Higher values can cause the filters to self oscillate. In the case of AM/RM, the amount of modulation applied.

## **Envelope Amount**

How much **Envelope 2** modulates the filter frequency.

## **Envelope Invert**

Causes **Envelope 2** to modulate the frequency downwards instead of upwards.

## **Velocity**

Determines how much the note velocity scales the **Envelope Amount** parameter.

## **Keyboard Follow**

How much the filter frequency follows incoming note data. At 0%, the frequency is fixed regardless of played note, at 100%, the base frequency changes with incoming note data.

## **Level**

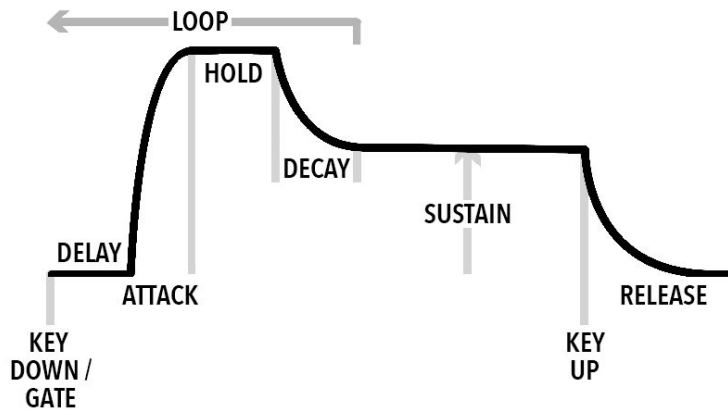
Output volume of the filter.

## **Serial Routing**

Causes the output of **Filter 1** to be directly routed into **Filter 2**.

# Envelopes

Nostromo has four **DAHDSR** envelope generators. **Envelope 1** is hard-wired into the amplifier and used to shape the amplitude of the sound. **Envelope 2** is hard-wired into **Filter 1** and **Filter 2's Envelope Amount**. **Envelope 3** is a general purpose modulation envelope which must be routed in the modulation matrix. **Envelope 4** is also general purpose modulation, but is also global and shared between all voices.



Ò) ç^[[ ] ^Áúææ ^c'•Á @, } Á'ææ @ææ'

## Velocity

(Envelope 1 Amp Only)

Determines how much the note's velocity scales **Envelope 1 Amp** in the amplifier.

## **Delay**

The time delay between note-on gate and the attack phase.

## **Attack**

The time it takes for the note to reach full volume.

## **Hold**

The time the note is held at full volume.

## **Decay**

The time it takes for the note to fall to the sustain level.

## **Sustain**

The note level during the sustain phase.

## **Release**

The time it takes for the note to fall from the sustain level to silence, once the key has been released.

## **Loop**

Will cause the envelope to jump back to the start of the delay phase after the decay phase.

## **Gate**

Enables the envelope being triggered via the key-down gate. Disable if you wish to only trigger the gate via the modulation matrix.



# LFOs

Nostromo has three general purpose modulation LFOs which must be routed in the modulation matrix. **LFO 3** is global and shared between all voices.

## Key Sync

Resets the LFO Phase on key-down. If disabled, the LFO phase will be random on key-down.

## Phase

Sets the phase of the LFO waveform. If **Key Sync** is enabled, this would be the initial phase on key-down. Setting the **Rate** to zero allows **Phase** to sweep the LFO wave manually.

## Keyboard Follow

How much the LFO **Rate** follows incoming note data. At 0%, the rate is fixed, regardless of played note. At 100%, the base frequency changes with incoming note data.

## Rate

Sets the cycle rate of the LFO. Free rates range from 0.0Hz to 50.0Hz. Available Synced Rates: 32/4, 28/4, 24/4, 20/4, 16/4, 12/4, 8/4, 7/4, 6/4, 5/4, 4/4, 7/8, 3/4, 5/8, 2/4, 7/16, 5/8T, 3/8, 4/8T, 5/16, 1/4, 3/16, 2/8T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64, 1/128.

## One Shot

Causes the read position and value to freeze at the end of one complete LFO cycle.

## **Waveform**

Selects the waveform. Waveforms that show a (+) are unipolar. Waveforms that show a (O) are generated randomly and will not cycle.

## **Delay**

Introduces a delay before the LFO modulation onset after a note is played.

## **Lag**

Limits how fast the LFO value can change its output value.

# External Audio Input

## Level

Adjust the gain of the external audio.

## Filter Select

Fades the external audio input into the filters. A value of -100, full counter-clockwise, only sends audio to **Filter 1**. A value of 100, full clockwise, sends audio to **Filter 2**. A value of 0, straight in the middle, sends equal audio to both **Filter 1** and **Filter 2**.

# Modulation Matrix

The modulation matrix is used to connect a modulation source to modulation destinations. The source modulated can be scaled via an optional scale modulation.

## Modulation Sources

Source Parameter	Description
Mod Wheel, Breath, Aftertouch, Expression, Sustain	Standard Performance Parameters Range 0 to 100
Pitch Bend	Range -100 to 100
LFO 1, LFO 2, LFO 3, Wave Sweep 1, Wave Sweep 2, Wave Sweep 3	Nostromo LFO Modulation sources Range -100 to 100
Env 1, Env 2, Env 3, Env 4	Nostromo Envelope Modulation sources Range 0 to 100
Drift Voice 1, Drift Voice 2	Slowly drifting random modulation sources Unique to voice Range -100 to 100
Drift Global 1, Drift Global 2	Slowly drifting random modulation sources Global, shared by all voices Range -100 to 100
CV1 - CV8	CV Modulation Inputs on back panel.
Polyphony	Number of sounding notes. 1 to 6 mapped to Range 0 to 100
Voice Velocity	Velocity of note Range 0 to 100

Voice Key Full	Note value mapped whole keyboard to range to -100 to 100.
Voice Key Oct	Note value wrapped octave to range -100 to 100.
Voice Gate	100 when key held, 0 when key released.
Last Velocity	Velocity of most recent note Global Range 0 to 100
Last Key Full	Most recent note value mapped whole keyboard to range to -100 to 100. Global
Last Key Oct	Most recent note value wrapped octave to range -100 to 100. Global
Last Gate	100 when key held, 0 when key released. Global
-200,-100,100,200	Constant Values. Scaling with 200 will double the amount of modulation from source.

## Modulation Destinations

The details of these destinations are documented in their respective sections. They are listed here for reference.

Filter 1-2	Frequency, Resonance, Env, Level
Oscillator 1-3	Pitch, Detune, Pan, Width, Level, Filter
Oscillator Sweep LFO 1-3	Gate, Phase, Key Follow, Offset, Rate, Delay, Lag
LFO 1-3	Gate, Phase, Key Follow, Rate, Delay, Lag
Envelope 1-4	Gate, Delay, Attack, Hold, Decay, Sustain, Release
CV Out	CV Out 1-8
Global	Portamento, Drift
Audio In	Level, Filter
Delay	Time, Offset, Mod Amt, Mod Rate, Feedback, Dry/Wet
Reverb	Decay, Damp, Dry/Wet

## Delay

### Enable

Turns the Delay effect on

### Tempo Sync

Enables tempo sync for **Time** and **Offset**

### Time

Sets the delay time for left and right channel. Free rates range from 0ms to 1sec. Available Synced Rates: 3/4, 5/8, 2/4, 7/16, 5/8T, 3/8, 4/8T, 5/16, 1/4, 3/16, 2/8T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64, 1/128.

### Offset

Adds an additional delay to the right channel. Free rates range from 0ms to 1sec. Available Synced Rates: 3/4, 5/8, 2/4, 7/16, 5/8T, 3/8, 4/8T, 5/16, 1/4, 3/16, 2/8T, 1/8, 1/8T, 1/16, 1/16T, 1/32, 1/32T, 1/64, 1/128, 0.

### Ping Pong

Switches the feedback of the left delay into the right input and right delay into the left input.

### Mod Rate

Sets the rate of the delay line modulation LFO. 0.14Hz to 18Hz.

## **Mod Amount**

Sets the amount of modulation to the delay times from the delay line LFO.

## **Feedback**

Amount of delayed signal that is fed back into the input.

## **Dry/Wet**

Balance between the unprocessed (dry) signal and the effect (wet) signal.

# Reverb

## Enable

Turns the Reverb effect on

## Decay

How long it takes for the reverb to decay into silence.

## Dampening

Amount of low pass filtering to apply to reverb.

## Size

Perceived size of the reverb chamber.

## Dry/Wet

Balance between the unprocessed (dry) signal and the effect (wet) signal.



# Global

## Master Level

Sets the master volume.

## Polyphony

Number of voices allowed to sound at once. Once limit is reached, the oldest voice will be silenced and replaced with newest note down.

## Legato

When enabled, once the limit of polyphony is reached, the latest voice is taken over without retriggering. Use this with polyphony set to 1 for sliding basslines.

## Portamento

Sets the pitch glide between played notes.

## Drift

The amount of global drift applied to all oscillators. Low values create nice, lush strings and pads. High values recreate the sounds of old, out of tune analog gear.

## Note Activity

Lit when device is playing any notes.

# Performance

## Pitch Bend Range

Sets the amount of pitch bend when the wheel is turned fully up or down

## Pitch Bend

Global bending of note pitch.

## Modulation Wheel

Performance modulation wheel.

## **Back Panel**

### **Sequencer**

CV and Gate inputs allow you to play Nostromo from another CV/Gate device (Matrix, Korde, PSQ-1684). CV controls the note pitch, Gate controls note on/off and velocity.

### **Modulation In**

Direct CV modulation of popular parameters.

## **Modulation Out**

Direct CV output of the two global modulation sources, **LFO 3** and **Envelope 4**.

## **Modulation Matrix In**

Eight CV inputs into the modulation matrix.

## **Modulation Matrix Out**

Eight CV outputs from the modulation matrix.

## **Audio In**

External audio inputs are provided to allow Nostromo to act as a filter and effects device.

# Tips and Tricks

## Hidden Parameters

The Sweep LFOs have all the same available parameters as the modulation LFOs, but some are not exposed through knobs. In order to access a Sweep LFO's Key Follow, Delay, and Lag, use the modulation matrix with the constant source 100.

SOURCE	AMOUNT	DEST 1	AMOUNT
100	78	Sweep 1 Key Fo	0
100	47	Sweep 1 Delay	0
100	48	Sweep 1 Lag	0
0	0		0

## External/Manual control of the sweep

You can control manually or externally the movement of the read position in the spectrum wavetable. One important consideration to remember is that you don't move the actual playhead itself in the table, you move the phase in the Sweep LFO that controls it.

This entails an intermediary step:

1) Set the Sweep LFO to the Ramp Up Waveform (the second one, actually numbered "1"). The ramp starts at -1, where the playhead will be at the far left of the wavetable, and ends at +1, which represents the far right of the wavetable. We'll be scrubbing through this ramp, which in turn will move the playhead accordingly:



2) Disable "Tempo Sync" next to the Rate knob, and set the Rate to 0. This is to ensure that the playhead will not move on its own and will only react to whatever source we choose.



3) In the Modulation Matrix, set whatever source should control the sweep to the appropriate "Sweep Phase" destination ("Sweep 1 Phase" for the first oscillator, "Sweep 2 Phase" for the second oscillator or "Sweep 3 Phase" for the third):

SOURCE	AMOUNT	DEST 1	AMOUNT	DE
LFO 3	100	Sweep 1 Phase	0	
	0		0	
	0		0	

In this example, LFO 3 controls the movement of the playhead. This is different from controlling it from the sweep LFO itself, as the sweep LFO is retriggered for each voice (i.e. each note played will start the scrubbing from the same position in the wavetable), while LFO 3, being global, is free-running (i.e. each note played will start the scrubbing from wherever the playhead is at that particular moment). This makes for rich, complex evolving pads for instance.

From there on, the "Phase" knob of the oscillator acts as a scrubber, i.e. its position directly determines the position of the playhead in the wavetable.

## Control of the sweep from the Mod Wheel

This is quite simple: perform steps 1 and 2 as detailed in **External/Manual control of the sweep**, then choose "ModWheel" as the source in the Modulation Matrix. You can now scrub through the wavetable with either the physical Mod Wheel on your keyboard, or Nostromo's Mod Wheel.

SOURCE	AMOUNT	DEST 1	AMOUNT	DES
Mod Wheel	100	Sweep 1 Phase	0	
	0		0	
	0		0	

## Control of the sweep from a Combinator

This can be interesting if you wish to synchronise the scrubbing of the wavetable with an external effect, for instance the opening of a filter, as you can set one Combinator rotary to several destinations.

Perform steps 1 and 2 as detailed in **External/Manual control of the sweep**. Set the Nostromo inside a Combinator (by right-clicking it and choosing "Combine" from the contextual menu). On the combinator, click on "Show Programmer". Select Nostromo in the left pane, and in the Modulation Routing section, set Target for a rotary to "Wave Sweep X Phase" (where X is the number of the oscillator you wish to control). You can then scrub through the wavetable with the chosen rotary on the Combinator.

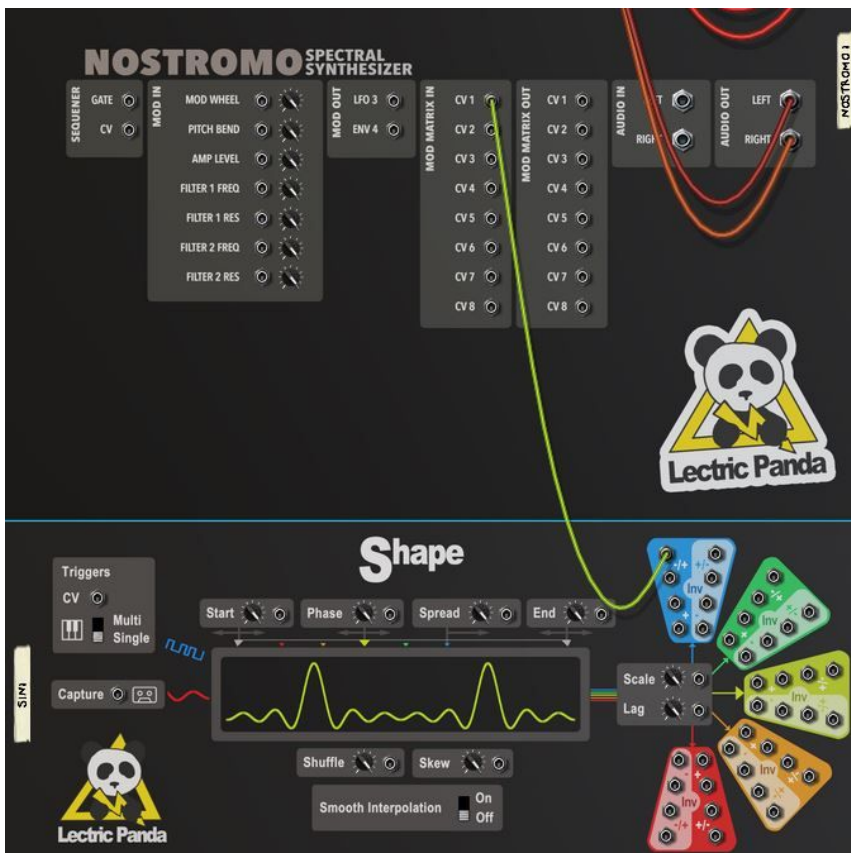
Modulation Routing				
Device: 1		Nostromo 1		
Source	Target	Min:	Max:	
Rotary 1	Wave Sweep 1 Phase	0%	100%	
Rotary 2				
Rotary 3				
Rotary 4				
Button 1				
Button 2				
Button 3				
Button 4				

## Control of the sweep from an external source

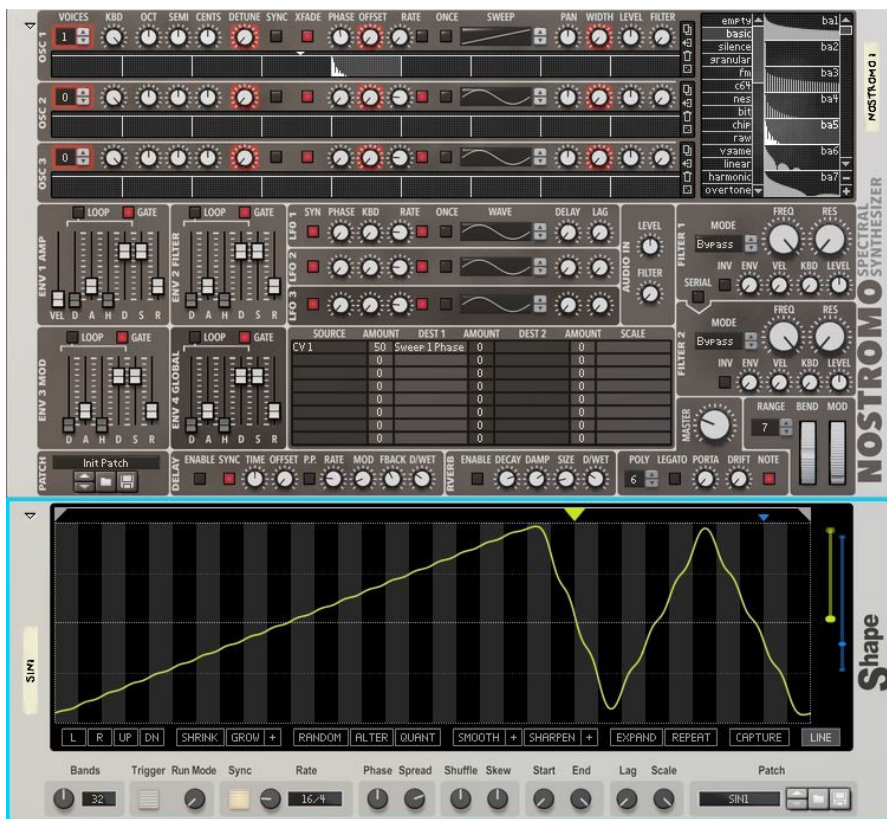
You can also control the sweep from an external CV source, whatever that is: a LFO from another synth, a LFO generator/modulator, a CV output from Synchronous, or even draw your own movement through automation in Reason's sequencer.

As an example, we're going to control the movement of the playhead through Shape (but you can use whatever CV source you wish).

- 1) Perform steps 1 and 2 as detailed in **External/Manual control of the sweep**.
- 2) Add a Shape below the Nostromo.
- 3) Flip the rack around by pressing Tab and connect one of Shape's CV outs to Nostromo's CV1 input:



- 4) Flip the rack back (Tab) and in Nostromo's Modulation Matrix, set the source to CV1, the destination to "Sweep X Phase" (where X represents your chosen oscillator number), and the Amount to 50 (setting it to 100 would double the range, which is not what we want here).



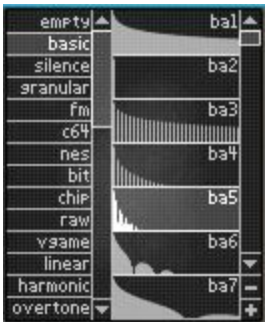
Shape's CV output now controls the position of the playhead. As Shape outputs up to 5 different CVs, you can control all three of Nostromo's oscillators this way, either by setting CV1 to control "Sweep 1 Phase", "Sweep 2 Phase" and "Sweep 3 Phase", or by plugging Shape to three different CV inputs in Nostromo and directing each of these CVs to each oscillator's sweep.



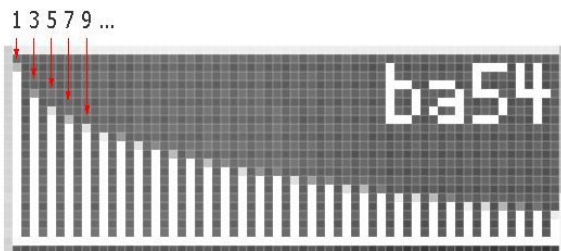
## Identifying waveforms visually

2200+ different wave spectrums can seem a little overwhelming at first, but the following tidbit will help you quickly see what the harmonic content of a particular wave is.

In the catalog, each waveform is represented by a thumbnail:



In these thumbnails, each horizontal pixel represents an harmonic of the fundamental frequency. For instance, let's take a closer look at the waveform "ba54", found in the "Basic" category of the catalog:



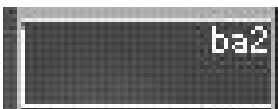
As you can see, the fundamental (the first vertical line on the left) is quite loud. There's no second harmonic (the second vertical line is empty). The third harmonic is present, a little quieter than the first, and so on. All odd harmonics are played, and all even harmonics are silent, while the falloff in volume is a bit less than 6db/octave (i.e. the height of the thirteenth harmonic is about half that of the first): this is a square wave.

Squares and triangles have mainly odd harmonics, while sawtooths have all harmonics present. Sines have just one harmonic and waves with only even harmonics are compounded sines or "complex waveforms".

For instance, "ba8" is a sawtooth: it contains all harmonics with a regular falloff.



"ba2" only has the fundamental playing: it's a pure sine.



"ot35" only has overtones, no fundamental.



This is mainly interesting for waveforms in the "Basic", "Harmonic" and "Overtone" categories, which are mostly "basic" waveforms, as could be generated by a pair of oscillators without any further treatment. While it's more difficult to identify the other complex waveforms this way, you can still quickly check the presence or absence of a particular harmonic when searching for a particular timbre.

## The rhythmic half-morph

This trick exploits the fact that when a playhead crosses over from slot 9 to slot 1, no crossfade is operated, even if the XFade setting is On.



- Set "Voices" to 8.
- Sync Off
- XFade On
- Offset on maximum (100)
- Sync rate to tempo and choose an even signature (16/4, 4/4, 1/16...)
- Choose the second LFO sweep (Ramp Up, "Wavesweep 1 Waveform: 1")
- Choose two different waveforms in each slot 1 and 9
- Make sure slots 2 to 8 contain the "empty" waveform (the one that's found in the "empty" category, not the "silence" in the "silence" categories)
- Play a sustained note on your keyboard.

The sound now rhythmically morphs between the two waves, with a sudden jump happening every 1/8th of the chosen time signature, or 1/4th if you set 4 voices (you can adapt this to ternary signatures by settings "Voices" to 3 or 6).

You can also set different waveforms in slots 2 to 8, but the rhythmic effect will be slightly less pronounced.

## Modwheel scratch

Some parameters, like the waveform in each slot, cannot be controlled from the Modulation Matrix but CAN be controlled through the Combinator's programmer. Here is an example of how to control the waveform in slot 5, so it be changed by moving the Mod Wheel on your keyboard.



- Insert a Nostromo in a Combinator.

- On the Nostromo, set the Rate Sync button to Off (the one right next to the "Rate" knob), and the Rate to 0. Set other's values (number of voices, detune, pan, filter...) to taste.

- In the Combinator's programmer, select Nostromo on the left pane, and choose "Mod.W" as a source, and "Osc 1 Wave 5" as a destination.

Play a sustained note while moving your Modulation Wheel: the whole catalog scrolls in the fifth slot. You can program it so that it only scrolls through a smaller subset of the catalog by changing the values of the "Min" and "Max" parameters in the Combinator's programmer.

## Timbre S&H

This one is similar to the Modwheel scratch in that it scans through all the waveforms in the catalog, but it does it rhythmically by using one of the S&H (Sample & Hold) LFO waveforms.



- Insert a Nostromo in a Combinator.

- On the Nostromo, set the Rate Sync button to Off (the one right next to the "Rate" knob), and the Rate to 0. Set other values (number of voices, detune, pan, filter...) to taste.

- In the Modulation Matrix, set a source as LFO1, the amount to 100 and the destination to CV1.

SOURCE	AMOUNT	DEST 1	AMOUNT	DEST 2	AMOUNT	SCALE
LFO 1	100	CV 1	0	0	0	
	0		0	0	0	
	0		0	0	0	

- In the LFO1 section, make sure Rate Sync is enabled and set the Rate to 1/8. Choose the fifth waveform (numbered 4, as the list starts with waveform 0). The little circle in the upper right means that this is a random waveform which will be different for each cycle.



- In the Combinator's programmer, select the Nostromo on the left pane, and choose "CV In 1" as a source, and "Osc 1 Wave 5" as a destination.

Modulation Routing			
Device: 1 Nostromo 1			
Source	Target	Min	Max
CV In 1	Osc 1 Wave 5	0	2274
Rotary 2			
Rotary 3			

- Flip the rack around and connect the CV1 from Nostromo's Mod Matrix Out section to the Combinator's CV1

in the Programmer CV In section (click on "Show Programmer" to unfold the device if necessary).



- Flip it back around and start playing.

The resulting sound resembles a traditional S&H sound, except that instead of simply controlling the opening of a filter, it changes the whole spectrum on every beat.

Of course, you can also control the filter in the same way, either with the same LFO or another one, to stack the effects.

Try different tempo rates to suit your tastes.

# Patch Contributions

Lectric Panda wants to fill the Contributions section of the sound-bank with your patches! If you have some you would like to submit, please follow these guidelines:

- Normalize all patch levels to -12db
- Name all patches using spaces between words and capitalizing the first letter, for example: Rocket Pineapple Bathtub Party.repatch
- Combinators should only contain Nostromo and Reason stock devices, no other Rack Extensions.
- Put patches in zip file with the directory structure you want (if any).
- Provide your handle/name for your directory under Contributions.
- Send to [patches@lectricpanda.com](mailto:patches@lectricpanda.com) with the subject "Nostromo Patches"

# Acknowledgments

Thanks to Kristoffer Ekstrand / Adventure Kid and the AKWF waveform pack.

<http://www.adventurekid.se/akrt/waveforms/adventure-kid-waveforms/>

Thanks to these individuals that helped beta test, write this manual, and provide patches.

- WongoTheSane
- Challism
- Joeyluck
- Theshoemaker
- Eauhm
- MassiveSoundStudios
- Lizard
- Eauhm







