ElementsXplorer

Final

1st Draft

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A port of Emilie’s Elements Modal Synthesis model adapted for Korg Prologue with Front Panel control of MultiEngine parameters.

ElementsXplorer

ElementsXplorer (EX from here on), features Front Panel control of the MultiEngine User Oscillators. The knobs in the VCO control section have been repurposed to provide direct manipulation of Elements Resonator and Exciter controls. EX passively reads these controls, so VCO's are still active if you turn the volume up.

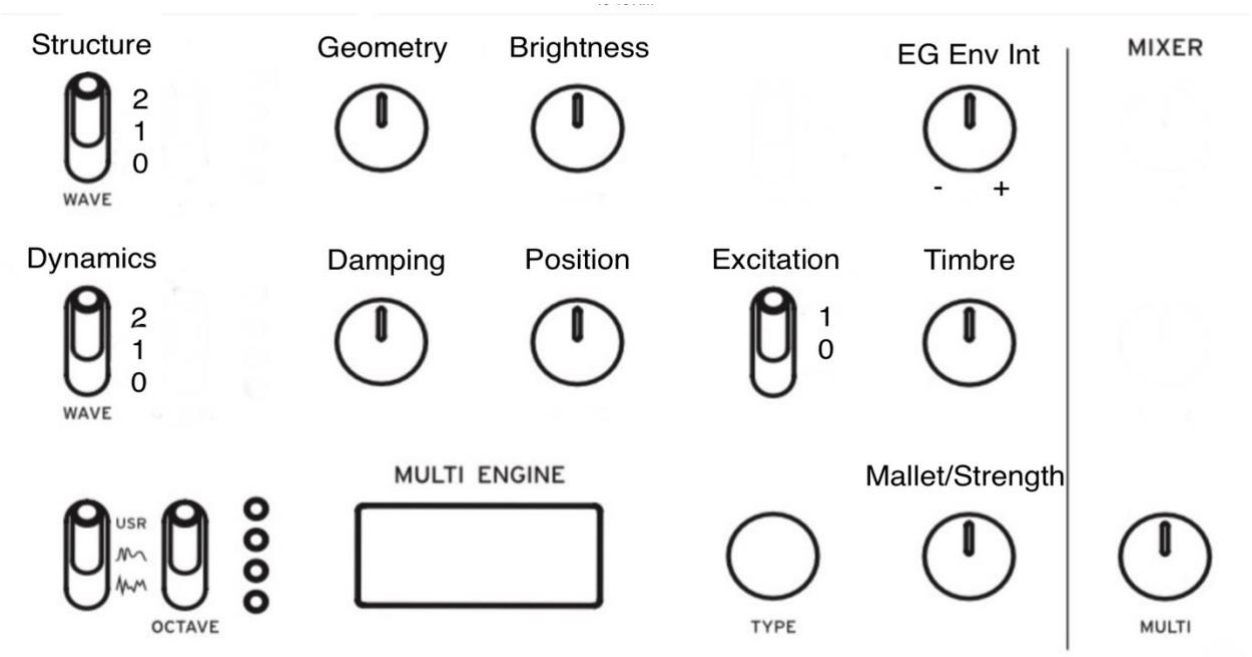
Overview of Features

EX uses VCO's front panel controls for all Resonator and Exciter settings and uses VCO's Waveform switches to select among various useful modulation options. For exceptional control of EX voicing, EX implements Key Tracking for all controls except Geometry. Additionally, for dynamic modulation EX uses the Shape LFO target and has access to the Velocity Sensitive EG Envelope through the Pitch EG control.

The original Elements module includes three types of Exciters: Blow, Bow, and Strike. Due to memory constrains this version only has the Strike impulse generator which features various Mallets, Plectrums and Particles. Other exciters use audio samples and cannot fit into the available memory as is.

Front Panel Description

EX groups Resonator and Exciter controls together as shown below.



(Front Panel Description cont.)

Structure (Resonator)

- Geometry: controls inharmonic content. Various settings of modeled inharmonic content for vibrating or struck metallic, wooden, or glass materials; from plates to strings, to bars and tube, to bells and bowls.
- Brightness: controls harmonic content; models how muted the high frequency resonant modes are. Use this is accentuate or mute the Resonators tone. Low values simulate materials like wood or nylon; higher values are useful for metallic or glass like materials.
- Structure Modulation Index selects Structural Resonator targets for LFO and Envelope.

Dynamics (Resonator)

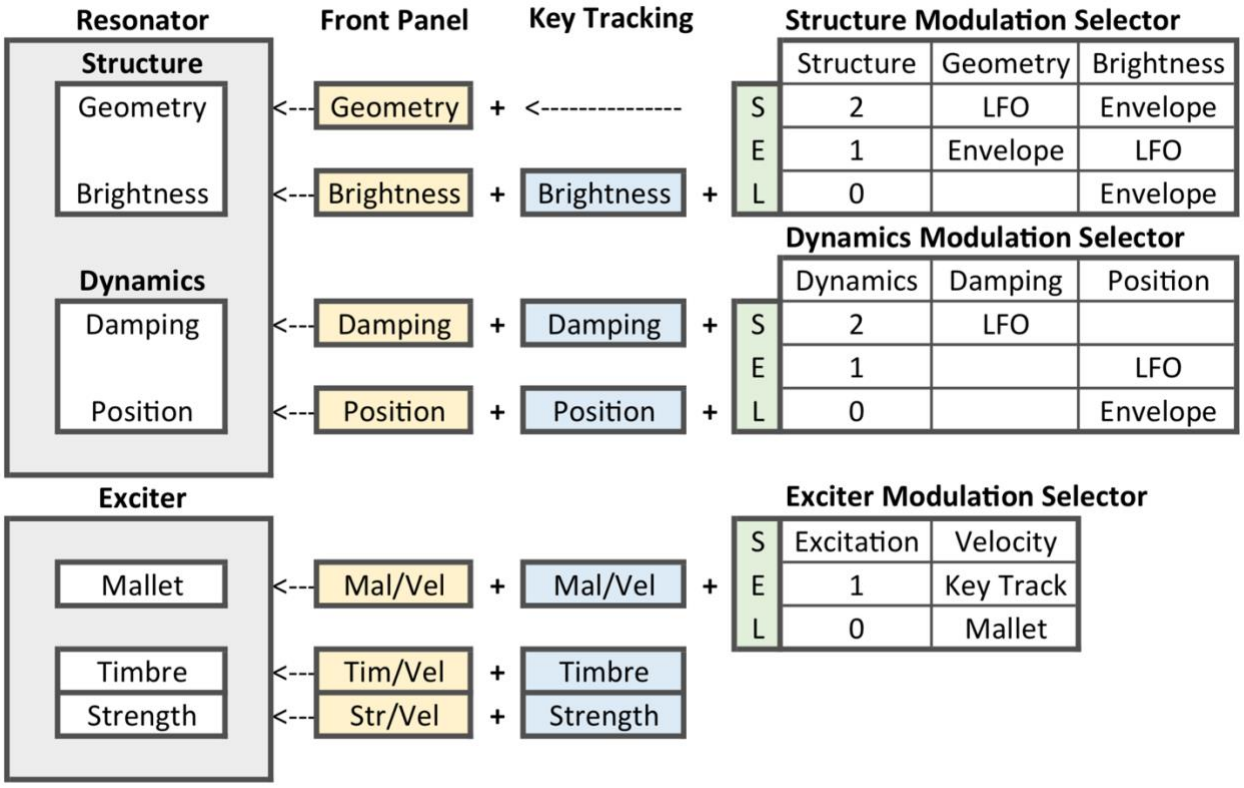
- Damping: controls the amount of Damping the Resonator implements after a strike. Higher values create longer decay times; lower values produce shorter plucked tones.
- Position: simulates where the material is struck. Various settings create hollow or tinny sounds. Sweeping position creates phasey pulse width modulating types of sounds.
- Dynamic Modulation Index selects Dynamic Resonator targets for LFO and Envelope.

Excitation (Exciter)

- Strength: strike strength controls the amount of force the material is struck with. Settings above 50% mix the sound of the Exciter in with the Resonator output.
- Mallet: from 0-50% varies the exciters from damped to undamped mallet models, then delayed pluck up to 74%, after which multiple types of plectrum plucking models can be selected with increasing bounce length. Finally, at 100% particle generator provides random triggers on sustain.
- Timbre: adjusts Low Pass filter response applied between the Exciter and Resonator, effects the brightness/speed of the percussive excitation. 0-50% controls low pass cutoff, and above that increasingly narrow Q and high pass.
- Exciter Modulation Index selects governs Mallet Velocity settings.

Modulation

EX provides static and dynamic modulation options for each input. Modulation is divided



into three sections then added together and presented to the Modal model inputs:

1. Front Panel Controls. Each input has an associated front panel Bias control for quick adjustment of every control. Placement on the Front Panel allows for both preset save and restore functionality as well as full support of all expression controllers used by Prologue platform.
2. Key Tracking. Allocated to the six MultiEngine Menu Params 1-6 are Key Tracking controls for all but the Geometry input. Key Tracking is valuable for detailed static voicing. Each input can be individually adjusted with respect to increasing or decreasing pitch. Negative values accentuate the low end of the keyboard, positive values accentuate the high end of the keyboard. Examples include brighten, or dampen one end of the keyboard, increase Mallet strength for high pitches, or adjusting Timbre for high or low end.
3. Modulation Selector. A variety of useful dynamic modulations can be applied to each input via the front panel VCO Waveform and VCO Sync switches. Each section; Structure, Dynamics, and Exciter has an associated Modulation Selector.

Playing Mallets with EG and AMP Note Velocity

Prologue implements two Note Velocity settings; EG for coloration and AMP for dynamics. The EG Note Velocity is included with the EG Pitch Envelope control, providing built in Note Velocity with the EG Envelope control for the Resonators Modulation Selector. The Exciter Modulation Selector, in conjunction with Mallet Key Tracking Control in Params Menu controls, governs how the Mallet responds to dynamic AMP Note Velocity.

- In Mallet mode, Params Menu 5 'Mallet' controls the value of Mallet in response to AMP Note Velocity. Positive values produce an increase in the Mallet control value in proportion to AMP Note Velocity, while negative values will decrease the Mallet controls value. This can be used to vary a Plectrum Delay, or Mallet dampening with Velocity. Or can be used between Mallet modes for larger effects, such as accented Mallet rolls in the particle range.
- In Key Tracking mode, Mallet responds positively with respect to Note Velocity as well and MIDI note value. Positive values on the Params Menu 'Mallet' will produce positive a Mallet increase with respect to MIDI note. While negative values produce positive Mallet value with decreasing MIDI note value. This can be used to create pitch dependent Mallet behavior with respect to Velocity. Resultant values for Mallet will be within the range of the Mallet control as a minimum plus the Key Tracked value as the maximum.
- In either mode, Strike Strength and Timbre settings for AMP Note Velocity are done in the same way: The parameter control sets the maximum value for the controls, while AMP Note Velocity varies the value of the control within the range of zero to the controls maximum setting.

Restrictions

For proper operation both VCO Octave switches must be set to 16', Pitch EG to VCO1+2, and VCO 1 and 2 Mixers to Zero. You must also be running Firmware 2.10.

Honorable Mentions

A big THANK YOU! Goes out to Emilie, Peter, and Mark for gifting their work as open source; Plaits, First Plaits Logue port, and Tsoniq's Front Panel code respectively.