FlexArp for ardcore

rockwoofstone sept 2013

Mode	
Up	Lowest to highest note
Down	Highest to lowest note
Up/ Down	Lowest to highest then back; doesn't repeat highest and lowest notes
Root-Up	Bounce between lowest and each other note in the series
Ping-Pong	Alternate from lowest to highest, moving towards middle note until all are played
Random	Plays one note from each octave selected

Scale
Major Pentatonic
Minor Pentatonic
Blues
Augmented
Ionian
Aeolian
Lydian
Mixolydian
Dorian
Phrygian
Locrian
Octaves
Chromatic

Steps / Distance

Changing this control increases the distance and steps ranges. Distance (between each note played) is spread across the whole control range, then for each distance setting, the number of steps to be played in each arpeggio sits within that sub-range; i.e. select the distance setting you want, then fine tune for the number of steps.

Distance range	1 - 6
Steps range	3 - 6

Octaves / Root

This simply selects the number of repeats of the arpeggio (1 to 5), with each being transposed to the next octave up, and also sets the root note of the arpeggio. The exact behaviour of this parameter depends upon the settings selected in control mode.

Parameters

- Scale of the arpeggio
- Root note of the arpeggio in the selected scale
- Distance in scale notes between each arpeggio step
- Number of steps in the arpeggio
- Mode of playback of the arpeggio
- Number of octaves the arpeggio is repeated over

The arpeggiator will play up to 5 octaves of notes. If an apreggio tries to play above this, we drop the remainder of it 5 octaves, then continue to play from there, preserving arpeggio length.

Outputs

DAC output gives the 1V/Oct output to send to your oscillator.
D0 triggers every time the entire arpeggio sequence starts again.
D1 triggers every time the arpeggio changes octave.

O / R Control Selection	
*	O/R control sets number of *octaves*.
**	O/R control sets *root note* of apreggio.
***	O/R control manages *both* root note (front of range), and number of octaves (back of range).

Control Mode - Layouts

Control mode allows you to select which parameters are assigned to which of the analog inputs, and therefore which parameters you can use CV to control, and which are manual only.

To enter control mode, turn the A2 and A3 controls all the way up. Then use the A2 control to select the layout you want (all variations detailed below). The status of the two LEDs shows which layout you have selected. Once you've selected your layout, turn down control A3 to exit control mode and return to normal operation.

You can also enter this mode on the fly using CV, then switch between layouts using a CV source. The same CV source will then influence different parameters once control mode is exited (which again, you would do by changing the appropriate CV). Some pretty complex automation of this can be achieved using voltage controlled switches, although this is non-trivial, and needs a VC switch (with 2 inputs on each) for each of the 4 knobs to be completely effective.

Control Mode – Octaves / Root

When in control mode, A0 will set the function that the O/R control will perform. When the selection is changed, D0 will flash from 1 to 3 times to indicate which option is selected.
When the O/R control is set to control the root note, the default number of octaves to be used for the arpeggio can be set in control mode using A1. Feedback on the number of octaves selected is provided through flashes of D1.
When arpeggiating in "both" mode, the O/R control should be set using a discrete CV, rather than continuous CV or manually, to avoid unintentional change of values by the control sweeping over the changeover point between the two parameters.

Layouts

A0	**A1**	***Default***	
Mode	Scale	**D0**	**D1**
A2	**A3**		
S/D	O/R		

A0	**A1**		
Mode	O/R	**D0**	**D1**
A2	**A3**		On
S/D	Scale		

A0	**A1**		
O/R	Scale	**D0**	**D1**
A2	**A3**	On	
S/D	Mode		

A0	**A1**		
S/D	Mode	**D0**	**D1**
A2	**A3**	On	On
O/R	Scale		

A0	**A1**		
S/D	Scale	**D0**	**D1**
A2	**A3**		*
O/R	Mode		

A0	**A1**		
S/D	O/R	**D0**	**D1**
A2	**A3**	*	
Mode	Scale		