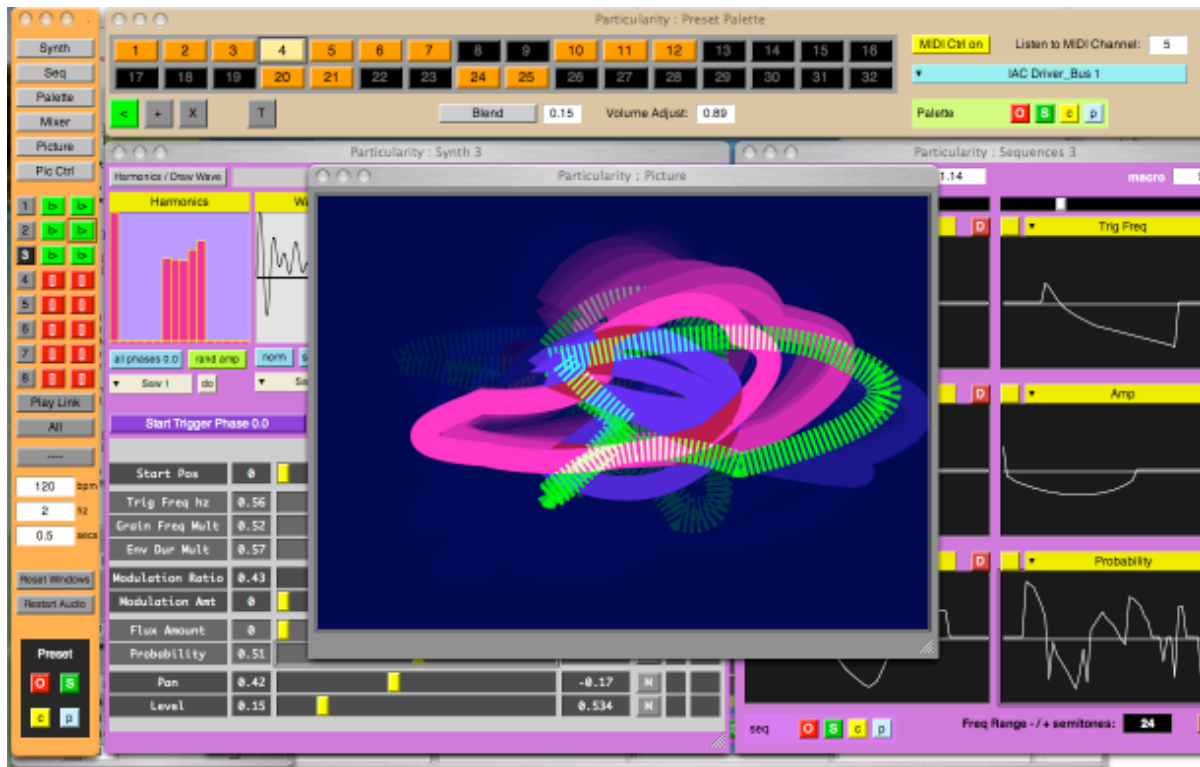


Particularity

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Version 1.01 - 11 June 2010

User Guide



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Introduction

What this program aims to do

Particularity is a real-time granular synthesis system, along with a sequencer for some of the parameters, combined with a generator of animated visuals. There can be as many as 8 synthesis processes at any one time, and one "picture" window. The synthesis is constantly running while turned on. The sequencer also loops continuously, controlling pitch, amplitude and probability of the synthesis in two time frames: micro (short times) and meta (longer periods.)

The states of any of these individual processes can be saved and recalled, copied and pasted. In addition, the state of all processes at any one time can be saved as a snapshot. A collection of these (named a "palette") can be used to step through these snapshots at will. The palette may be controlled using MIDI notes from any available source.

Intended as a tool for live performance, the Live Mixer further influences the sonic output, with controls for volume, panning and frequency offsets for both individual channels and the entire setup.

The visuals system takes its data mainly from the sequencer parameters, plotting them in 2D space in a user-definable way. Shapes, colours and sizes can be chosen, and these parameters stored in the palette along with the sound generating parameters. In this way a whole audio-visual piece can be composed, recalled and performed.

What this program is not!

Particularity is unlikely to be a good choice with which to write a song or a conventional piece of music. Instead, it lends itself to "sound" based composing, where aural textures and flavours are combined to create a desired effect. A wide range of sounds can be created, from soft and subtle organic soundscapes, to something more aggressive or artificial.

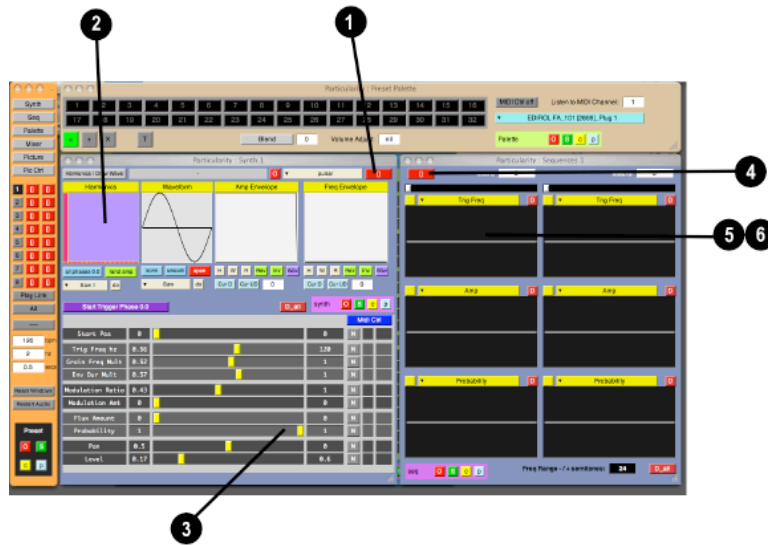
Granular Synthesis

It is assumed the reader of this manual is familiar with the basic concept behind granular synthesis. Such an understanding is vital to the use of the program. If this is not the case, many useful resources can be found online.

Installation

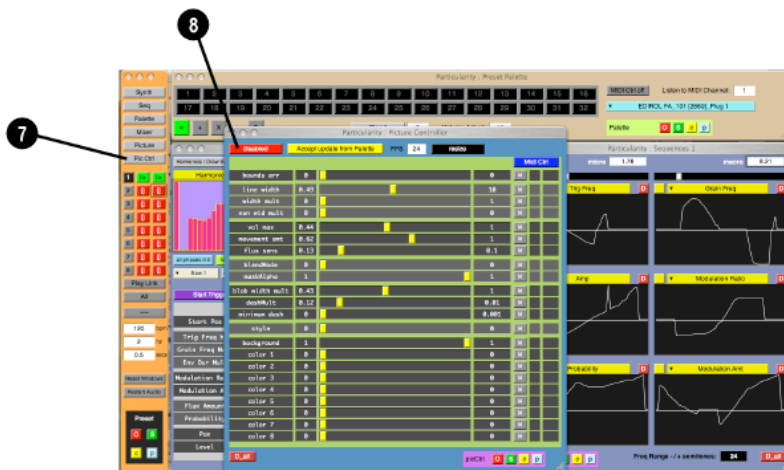
Drag the "Particularity" folder to your "Applications" folder. Double click on the icon within to run the program. It will take a little time to boot up. When several colourful windows have filled the screen and you can see a sine wave drawn in one of them, you will know that this process has been completed.

Quick Start Part 1: making a sound and animation



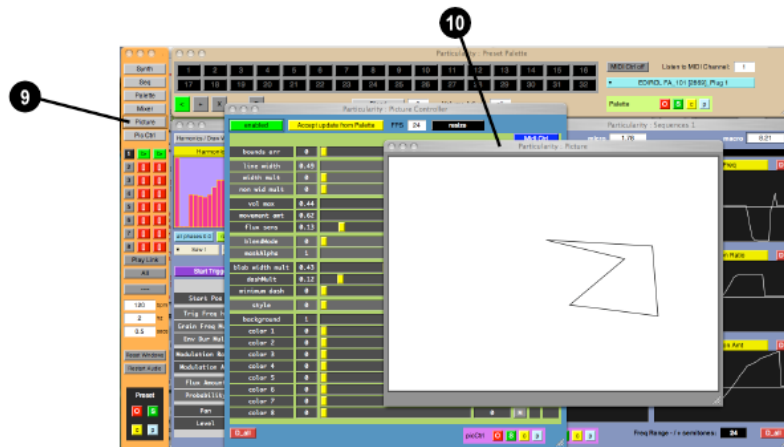
1. Press "play" in the Synth window. You should hear a steady tone.
2. Click in the harmonics window and drag, to change the harmonic amplitudes. The tone should sound brighter as a result.
3. Drag the "probability" slider gradually to the left. You will hear that the steady tone is in fact made up of tiny events, or "grains", that drop out more and more as the probability of producing them gets lower.
4. In the Sequences window, press play. The position sliders will start moving.
5. Click and drag in the first "Trig Freq" window. The tone should change in pitch according to the position shown.
6. Click and drag in the other black sequence windows. Other changes should be heard in the sound. If things fall silent, try to keep your drawn values above the centre line.

Now let's see an animation based on this sequence.



7. In the "Control Bar" (the orange strip to the left) press the button marked "Pic Ctrl". The Picture Controller window will come to the foreground.

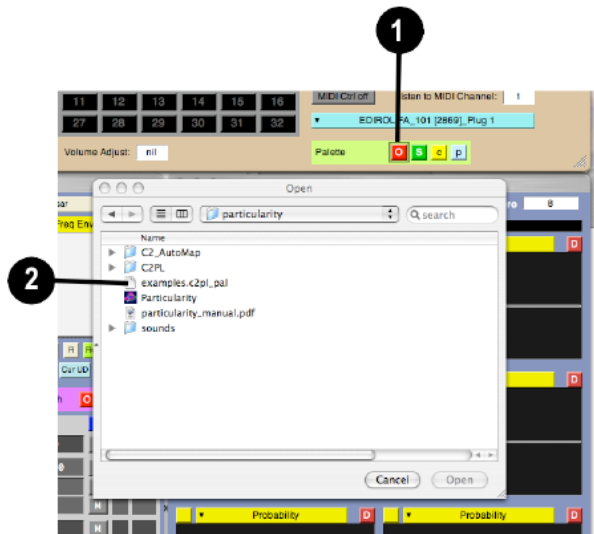
8. In this window, press the red button marked "disabled". It will change to green and now display "enabled". Many buttons in the program work like this.



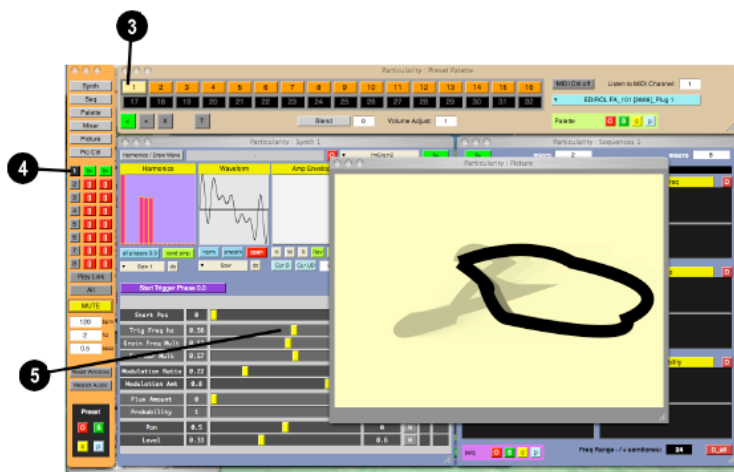
9. In the Control Bar, press the button marked "Picture". You should see a wireframe image (10), looking something like a backwards K, moving in time with the sequence. Try dragging various sliders in the Picture Controller and observe what happens to the Picture.

When you have finished for now, press the key combination Command (apple key) & Period (.) This will instantly stop all sound generation and sequencing, and is useful to know in case things suddenly get too loud.

Quick Start Part 2: Using the Palette

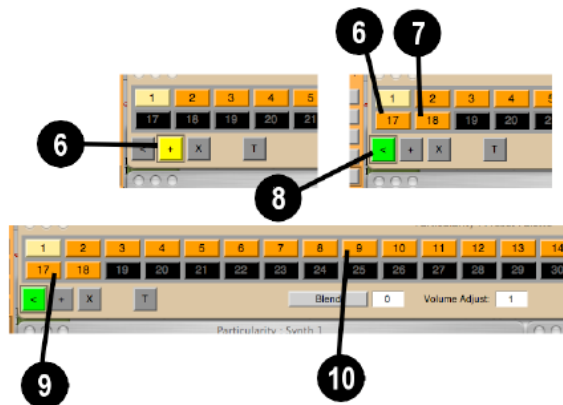


1. In the Palette window, click on the "O" (Open) button.
2. Navigate to the folder which contains Particularity and double click on the file: "examples.c2pl_pal".



3. You will notice that 16 of the buttons in the Palette have changed colour. Click on the first button. The preset stored in that slot has now been recalled. You should hear a "boing" type sound, and an animation should also be running (press the "Picture" button in the orange Control Bar to the left of the screen if it has been hidden.)
4. Make sure you are still editing Synth 1 by clicking the numbered button in the Control Bar.
5. In the Synth window, move the "Trig Freq hz" slider a little bit higher or

lower, so that the pitch changes.



6. In the Palette, click the button marked "+". This changes the mode to "store", which allows a preset to be added. Now click button no. 17. It should light up.

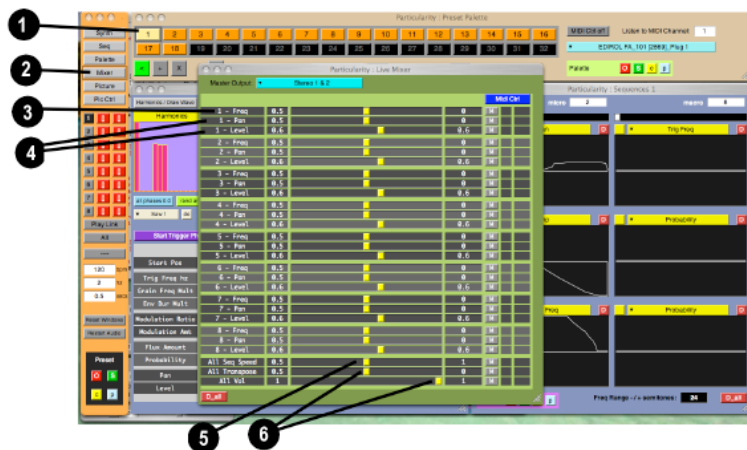
7. Once again, change the Synth pitch and click Palette button no. 18.

8. In the Palette, click the button marked "<". Now the Palette is back in recall mode.

9. Press button 17 again. You should hear what you changed the patch to a moment ago.

10. Press any of the lit number buttons to hear the presets. Notice how the animations follow sequenced elements in the sound.

Quick Start Part 3: The Live Mixer



1. In the Palette window, click on the first number button again, to recall the "boing" preset.

2. In the Control Bar, press the button marked "Mixer". The Live Mixer window will come to the front.

3. Move the first slider marked "1 - Freq". You should hear the pitch change.

4. Move "1 - Pan" and "1 - Level". These work as you might expect. These controls are present for each of the 8 Synths.

5. Move the slider marked "All Seq Speed". The boinging should get faster or slower depending on which direction the slider was moved.

6. The sliders "All Transpose" and "All Vol" affect all of the 8 Synths together. Try recalling a preset with many Synths running and experiment with each of these parameters.

You have now used every window in the program, and should have a basic idea about the way it works and what it is capable of.

Using The Program

Minimum requirements

Mac OS X 10.4 / Intel / 2 ghz / 1280x800 screen

Warning

The output volume from Particularity can change drastically depending on small parameter changes, so please take care to keep your speakers or headphones at a safe level! The shortcut Cmd - Period will stop all synthesis and sequencing immediately in case of panic.

Usage conventions

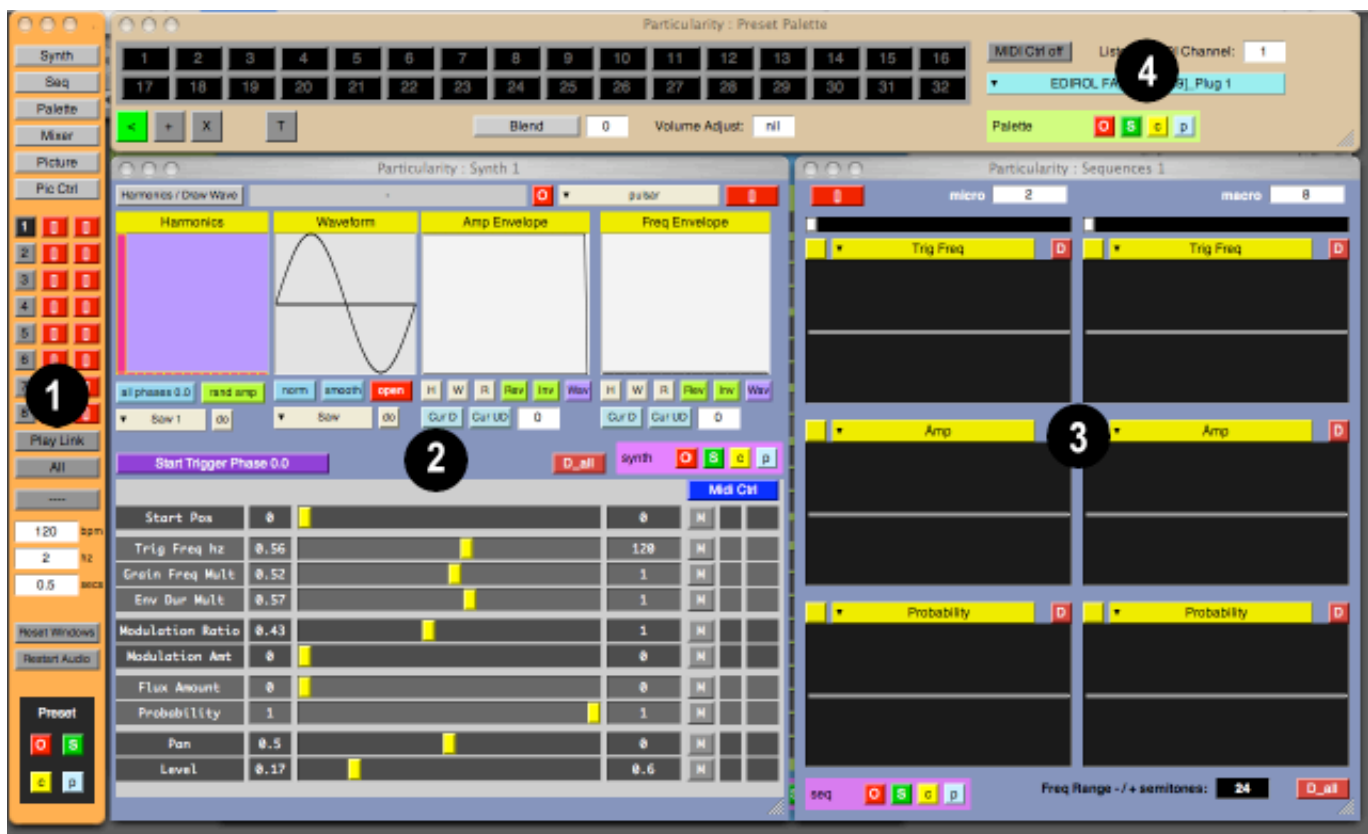
Number boxes may have values typed into them, or be scrolled up (value increases) or down (value decreases.)

Waveform or envelope displays can have their shapes drawn directly in their windows.

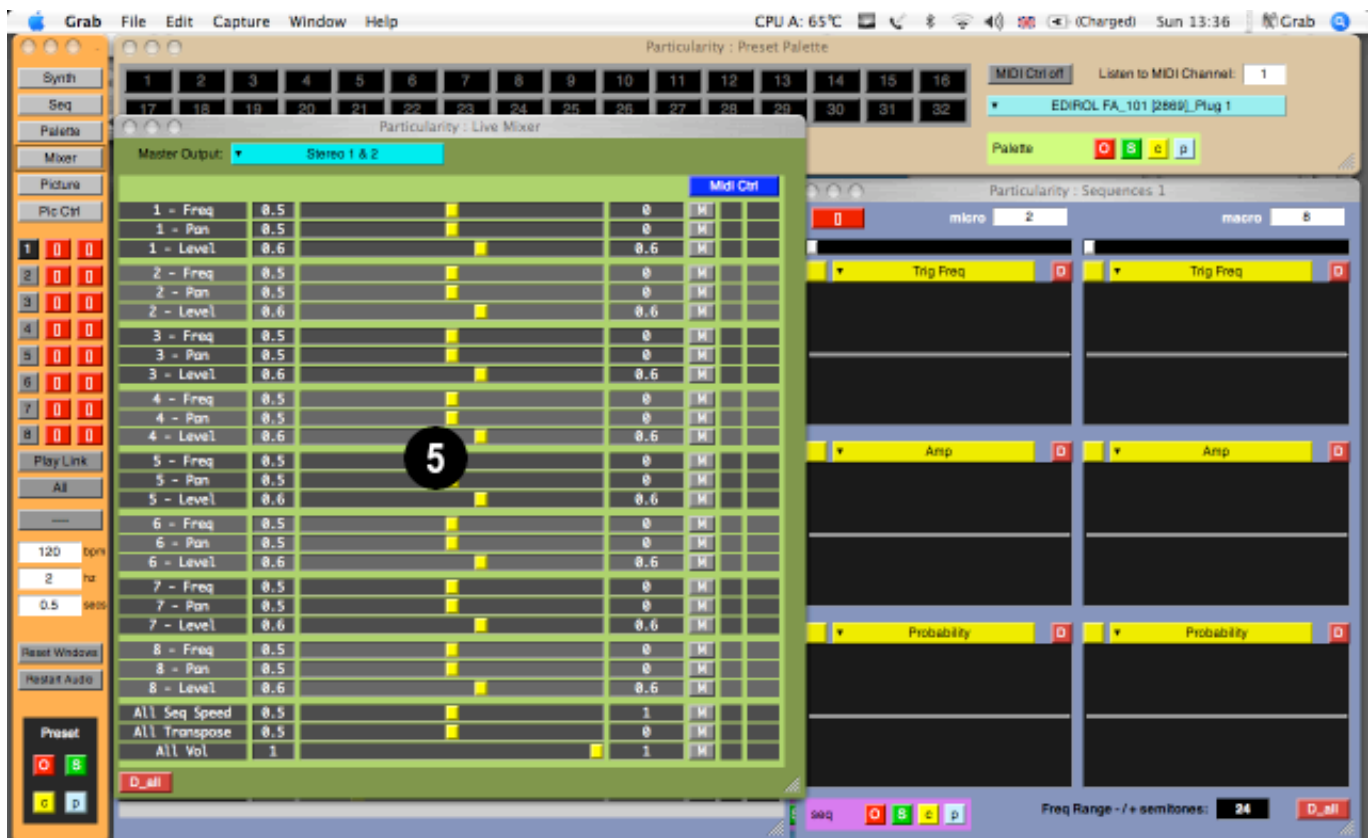
O / S / c / p objects open, save, copy and paste the data relevant to that window. Data elements of the program can be saved and loaded as separate files, if needed.

Experiment! Very often a single movement of a slider will provide all the explanation that several paragraphs of text might struggle to.

The Windows



The **Control Bar (1)** serves as a way to navigate the GUI, turn processes on and off, and load and save the current preset. The **Synth (2)** window is where the editing of synthesis parameters takes place, and the **Sequences (3)** window is where the looping envelopes that can control the synthesis are edited. The **Preset Palette (4)** serves as a way to save and recall the states of all of the processes (except the Live Mixer), thereby building up the parts of a composition.



The **Live Mixer (5)** can change amplitude, transposition and panning for all of the channels, and is intended as a live performance tool.



Visual animations are displayed on the **Pictures (6)** window, and editing of the parameters that control these animations takes place in the **Picture Controller (7)**.

Control Bar



The control bar is a thin orange strip to the left hand side of the screen that serves as a navigator to other parts of the program, as well as a way to turn processes on or off, and to save or recall the state of the entire program.

NAVIGATION:



The buttons marked "Synth", "Seq", "Palette", "Mixer", "Picture" and "Pic Ctrl" bring the relevant windows to the front of the screen.



The numbered buttons change the Synth and Sequencer displays to show the parameters for the relevant process. Next to each of these are two stop / play buttons. These start and stop the synthesis (left) and the sequencing (right.)



PLAY LINK button

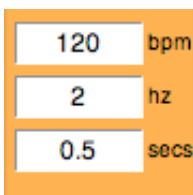
If "Play Link" is turned on (the button turns blue) then pressing play or stop on one channel will turn both synthesis and sequencing on or off together.

ALL button

If "All" is turned on (the button turns blue) then pressing play or stop on the synth or sequencer for one channel will also affect all of the other channels in a similar way. If "Play Link" and "All" are both selected, pressing play or stop for any channel will make the same happen for every process on every channel.

---- / Mute button

If "Mute" is selected, the master output will fall silent.



bpm

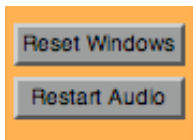
This sets the time basis for all sequencing in beats per minute. The displays for hz and secs will change along with this.

hz

As above but the time frame is given in hz (cycles per second)

secs

As above, but given in seconds.



Reset Windows

it! All of the windows may be moved around, and most can be resized along with their contents - try

In order to return the windows to their default state, press this button.

Restart Audio

Although it is unlikely, it is also not impossible for the synthesis engine to crash. Should this happen, it can be rebooted using this button.



O / S / c / p

This conjunction of buttons can be seen in many screens in the program. Their function is always similar.

O(pen) - this will open a file of the type relevant to the particular window.

S(ave) - this will save a relevant file.

c(opy) - copy the current state relevant to the window.

p(aste) - paste the data that was last copied.

As these buttons are in the Control Bar, the state of all of the real-time processes can be opened, saved, copied and pasted. The resulting files will have the extension ".c2pl_sgl".

! BEWARE !

The state of the live mixer is NOT saved (as it is intended for "live" use.)

Synth Window



This window sets the parameters for one synthesis process. Which one can be selected by the associated numbered button in the Control Bar. The sonic characteristics of a single grain can be specified as amplitudes of the harmonic series, or the wave can be "drawn" directly. In addition, a sample may be loaded into memory and a portion of this used for the grain. An external sample may also be resampled to the 2048 values that the "drawn" wave consists of.



Harmonics / Draw Wave / Use Sound File button

This parameter determines whether the specified waveform is used, or an external sample. The button status will change when pressed, but ONLY if a sample has already been loaded, by using the "O" button to the right.

Sample name display

O

Open an external sample to use as the basis for the grain. Please note, only mono samples will work.

Synth Model pop-up menu

A pop-up menu which selects the type of synthesis to be used. This can be any one of the following:

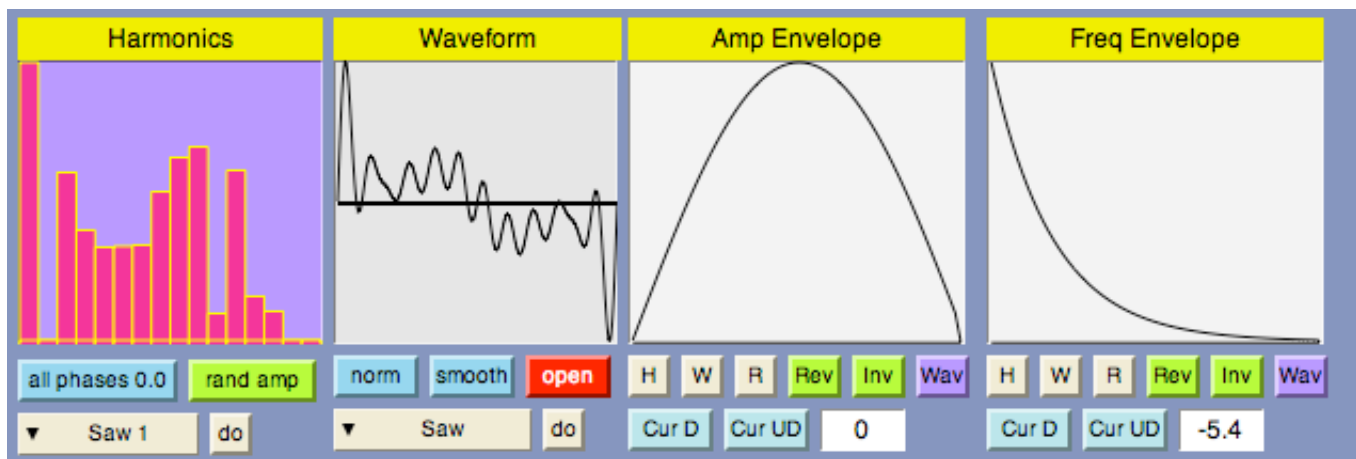
Pulsar - an interpretation of the "pulsar" concept. The grains do not overlap.

FM Grain 1 - the more classical type of granular synthesis in which grains can overlap. The rate can be modulated by a sine wave, with the ratio and amount as specified in the GUI.

FM Grain 2 - as above but the grains are created from FM synthesis using two sine waves, rather than the harmonics or waveform, which are not used in this mode.

Play / Stop

Start and stop the individual synth process.



Harmonics

This is a simple "drawbar" harmonics mixer, which can combine the first 16 tones in the harmonic series, in order to build up the single period waveform displayed next to it. Underneath is a button which specifies whether the phases are all zero or are chosen randomly. "rand amp" creates a harmonics mix totally at random. Below is a pop-up menu with some preset harmonics which result in various standard waveforms. Pressing the "do" button will execute this preset recall.

Waveform

The waveform display reflects the result of the harmonics mix, or the wave may be directly drawn in its window. In that case, the harmonics display turns dark to show it is no longer being used. Below are buttons which cause the wave to be normalised or smoothed. Also present is a button for opening an external sample, the whole of which will be resized to fit the 2048 values the waveform is made up of. On the row below is a pop-up menu similar to that for the harmonics, with which various preset waveforms may be selected, and entered into the display by pressing "do".

Amp Envelope

For each "grain" of sound, an amplitude envelope can be applied. The envelope can be drawn directly into the display. In addition, preset shapes are available via the buttons underneath. (Beware, these will instantly change the envelope shape, without undo.) The shapes are: H(anning), W(elch) and R(ectangular). "Rev" and "inv" will reverse or invert the envelope. "Wav" will copy the wave currently in the Waveform window.

"Cur D" will create a shape based on a curve argument given in the nearby number box, from -20.0 (convex) to 20.0 (concave). "Cur UD" will have a similar effect except the shape is mirrored about the centre.

Freq Envelope

A frequency envelope can be applied to each grain, but ONLY if the synth is set to "pulsar". As with the Amp Envelope, the shape can be drawn directly into the display. The *amount* of modulation that takes place is controlled by the Modulation Amt parameter in the Slider GUI. The buttons below perform similar operations as in the Amp Envelope.



[Start Trigger Phase 0.0 / Start trigger Random Phase] button

The trigger for grain production may start exactly at the time the synthesis is started, or after a









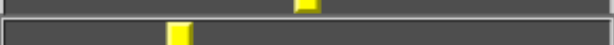

random pause no longer than the period of each grain (or the "phase" of grain production.) This button sets which option is used.

D_all button

This button will set all the values in the Synth edit window to their default values. Before this happens, the current patch is saved to the copy buffer, so pressing "p" (paste) can "undo" this action.

O / S / c / p

Open, Save, copy or paste the synthesis data. The resulting files will have the extension ".c2pl_syn".

				Midi Ctrl		
Start Pos	0		0	M		
Trig Freq hz	0.48		64.997	M		
Grain Freq Mult	0.91		9.6	M		
Env Dur Mult	0.35		0.336	M		
Modulation Ratio	0.43		1	M		
Modulation Amt	0.67		10.686	M		
Flux Amount	0.09		0.088	M		
Probability	0.69		0.694	M		
Pan	0.5		0	M		
Level	0.28		0.91	M		

Slider GUI : Synth Params

This slider GUI is of a type seen throughout the program. All such GUIs operate along similar principles. Each row displays the following information:

Parameter Name, Linear value, Slider, Actual Resulting Value, MIDI control on / off, MIDI channel, MIDI cc number.

Values may be set directly using any of the following elements:

Linear value number box displays the parameter as a value from 0 - 1, regardless of its actual resulting value.

The **slider** operates as one might expect.

Actual resulting value: this will most often be different from the linear value - for instance the frequency in hz ranges from 2.0 to 3000 with an exponential warp.

MIDI control of Synth parameters

By default, the button at the top right hand corner of the Slider GUI is set to "Midi Ctrl". This shows that any incoming MIDI continuous controllers specified below will be responded to. Alongside each parameter row, underneath the "Midi Ctrl" button to the right, is a button marked "M" and space for two numbers. If the "M" button is switched on (with a blue background) then the cc value for this parameter will be responded to, if the button is off (black on grey) the cc value will be ignored.

Clicking on the "Midi Ctrl" button will turn it red, and the lettering will change to "Midi Learn". In this mode, the parameter row buttons display the letter "L" instead. Clicking on a button and then sending

a continuous controller message will "learn" the cc value for that parameter, the channel and cc numbers will appear in the number boxes, and the "L" button will turn itself off. This procedure may be repeated for as many values as desired. When no more controls need to be set, pressing "Midi Learn" once again sets the mode to "Midi Ctrl" and the relevant control will be turned on and available for input.

! BEWARE !

ONLY the MIDI channel and cc numbers are remembered. It does not matter from which source or interface these messages come from. This is a design choice. This still leaves a choice of 16 x 128 individual controller numbers, which equates to 2048, a figure unlikely to be surpassed in most studios.

Automatic recall

The cc assignments for each parameter are NOT saved or recalled in Palette slots. Instead, they are remembered as "preferences" for the program, and will appear automatically next time the program is run. The preference files for each such slider GUI are stored in the folder "C2PL" local to the application.

Slider Parameters and their meanings.

Start Pos

This parameter will be most relevant to the use of external samples. It determines where in the sample or waveform the information for the grain will be taken.

Trig Freq hz

The fundamental frequency of the granular synthesis, i.e. the rate at which grains are triggered or produced.

Grain Freq Mult

The Grain Freq controls the frequency of each individual grain (also known as the formant frequency.) At a different value to the Trig Freq, it can create resonances that may for instance resemble vocal sounds. It is specified as a *multiplier* or ratio to the Trig Freq. Higher values will result in a higher pitched sound - 2 will be an octave above, 4 will be two octaves above, 0.5 will be an octave below and so on.

Modulation Ratio

This parameter will only have an effect if the "FM Grain" synthesis model is chosen. It changes the ratio of the modulating sine.

Modulation Amt

The amount that the frequency envelope modulates the pitch of the individual grain, or the amount of modulation that takes place in the FM Grain.

Flux Amount

How much randomness is applied to the frequency and amplitude based parameters.

Probability

For each trigger, a random calculation takes place. If the result is positive, a grain is produced, and if not, there will be only silence for that interval. At a value of 1 there will be a continuous sound, and at lesser values the dropouts will continue, until at 0 there will never be any grains heard.

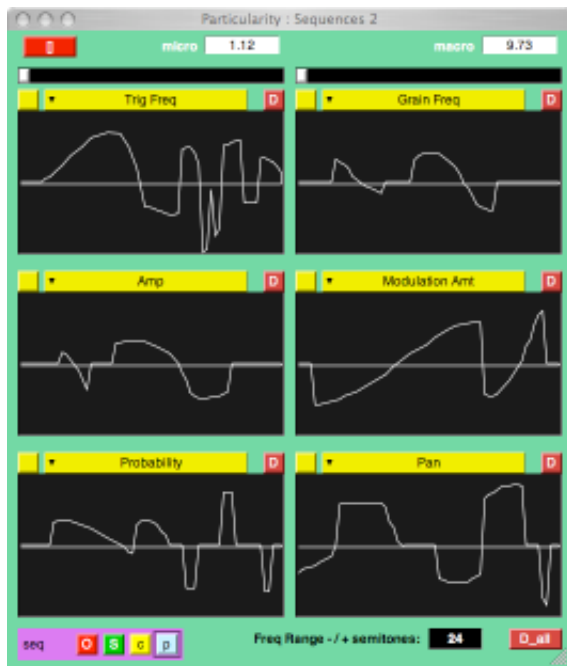
Pan

Where in the stereo field the granular stream will be placed.

Level

The overall volume of this synth process.

Sequence Window



Sequencing in Particularity is controlled using 6 looping envelopes per channel. Each envelope has 64 steps. The envelopes are grouped into 2 sets: 3 for the "micro" (short) time frame, and 3 for the "macro" (longer) time frame. The length of time to complete one micro or macro cycle is given in the two number boxes at the top of the window. By default these show 2 for micro, and 8 for macro. This means the micro cycle will last for twice the figure given in the Control window (in bpm, hz or seconds). The macro figure follows the same principle. Each envelope may control one of the following synthesis parameters:

Start Pos - an offset to the value given in the Synth slider GUI, from -1.0 to 1.0.

Trig Freq - an offset - / + the number of semitones specified in the **Freq Range - / + semitones** number box.

Grain Freq - an offset - / + 12 semitones.

Modulation Ratio - a multiplier with an effect equivalent to - / + 36 semitones.

Modulation Amt - a multiplier from 0.0 to 2.0

Amp - a multiplier from 0.0 to 2.0

Probability - a multiplier from 0.0 to 2.0

Pan - an offset from -1.0 to 1.0



Play / Stop

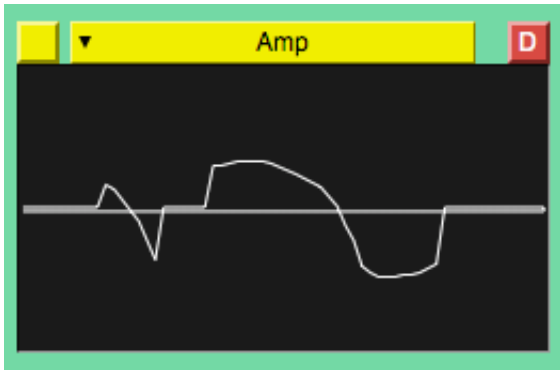
Start and stop the individual sequencer process.

micro / macro number boxes

Set the duration of each time frame as a multiplier of the value given in bpm, hz and secs in the Control window.

Position indicators

These sliders move during sequencer playback in order to show the current positions.



For each envelope:

Edit button

The shape of the looping envelope may be drawn directly in the relevant windows. In addition, pressing the unmarked yellow button directly to the left of the parameter name brings up a larger window within which it is a little easier to set detailed values. Please see below for a detailed explanation of this window.

Parameter pop-up menu

Select which parameter is to be sequenced by that particular envelope.

D(default button)

Set that envelope to a default value (flat in the middle of the graph.)

Envelope

Draw the envelope directly into the black window.



O / S / c / p

Open, Save, copy or paste the sequencer data. The resulting files will have the extension ".c2pl_seq".

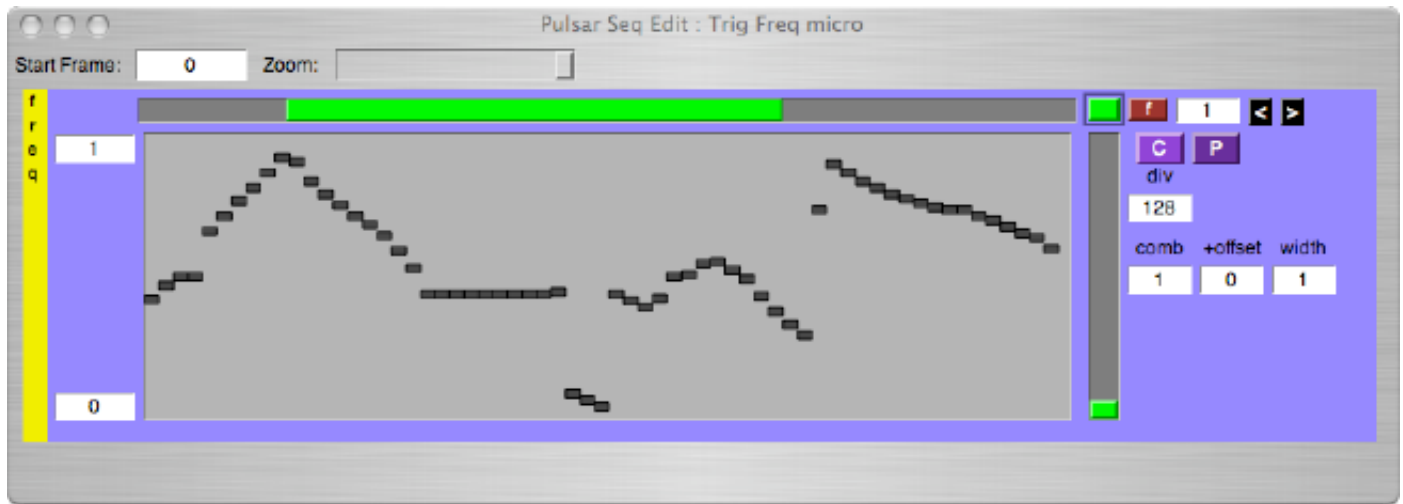
Freq Range - / + semitones number box

This sets the range in semitones that the Trig Freq and Grain Freq Mult parameters will be affected by.

D_all

Set all the envelopes and their assignments to the default. This can be undone, as before the default action takes place, the data is saved to the copy buffer. So pressing "p" (for paste) will paste the data that was just erased.

Large envelope edit window



This window is called up by pressing the unmarked yellow button (which will then turn blue and display the letter "E".) Here the values may be drawn in the central area. There are also the following controls:

"Start Frame" number box: the envelopes have 64 steps each. If you zoom in so that not all of the steps fit into the window, you can specify which step or "frame" the display starts from.

"Zoom" slider: zoom in or out.

unlabelled number boxes at top left and bottom left: these set the vertical range of the display.

range slider: this sets the range of operation for the elements on the right.

function button: when red, no range operations will take place. If pressed and turned to green, range operations will be allowed.

full button: sets the range to the full width of the display.

numberbox: this sets the horizontal quantize of the range slider.

scroll arrow buttons: shift the entire envelope left or right by the amount of steps specified in the adjoining numberbox.

C(copy) button: copy the envelope within the range selected.

P(aste) button: paste the copy buffer into the range selected, ONLY if the **function button** is green.

"div"number box: sets the vertical quantize of the "all" slider.

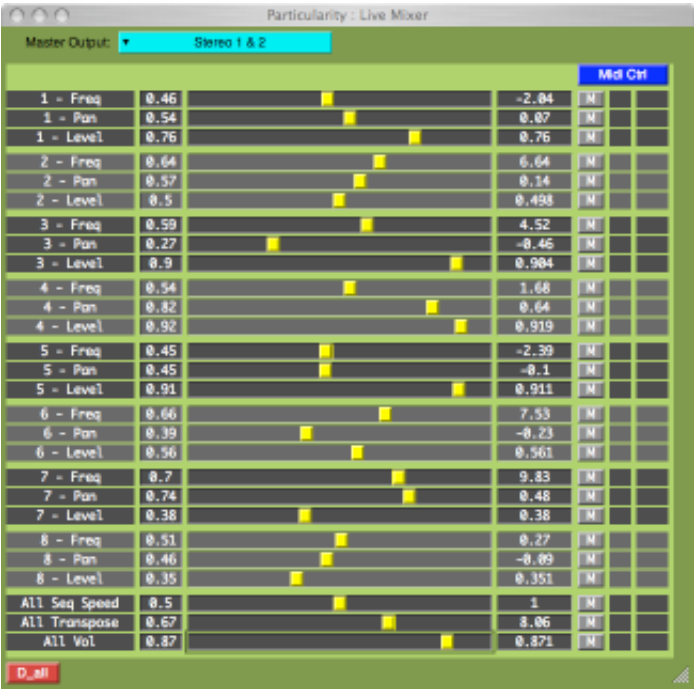
"all" slider: when the **function button** is green, this will set the envelope to its value over the whole range specified by the range slider, according to the vertical quantize set in the **"div"number box**.

"comb" number box: this sets a comb value for the actions of the **"all" slider** - at 1, every step within the range will be moved, at 2, only every step divisible by 2, at 3 every step divisible by 3 and so on.

"+offset" number box: this sets an offset to the combing.

"width" number box: this sets the width of the comb - for every step in the comb, how many will

Live Mixer



The live mixer is intended as a live performance tool. The settings of parameters here are NOT saved in any patch or palette files.



Master Output pop-up menu

This selects which stereo output pair will be used for the master output.



Mixer GUI

The interface operates on the same principles as the one in the synthesis edit window, including the ability for any parameters to be midi controlled. For each of the 8 channels the following parameters are available:

- Freq:** transpose the channel by 24 semitones in either direction.
- Pan:** control where in the stereo field the channel will be placed. Works as an offset to the pan control in synthesis or sequencing.
- Level:** how loud or quiet the channel will be.



At the bottom are paramaters which affect the entire output:

All Seq Speed: speed up or slow down the speed of every single sequencer process. Works as a

multiplier from 0.25 (a quarter of the normal speed) to 4.0 (four times the normal speed.)

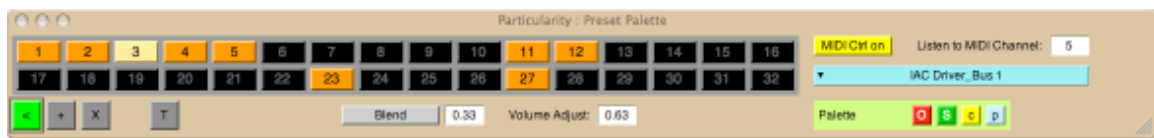
All Transpose: transpose every single synthesis process by 24 semitones in either direction.

All Vol: the master output volume.

D_all

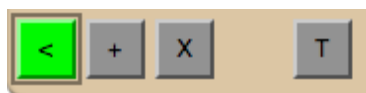
Return all the values in the live mixer back to their defaults.

Preset Palette



The preset palette gives a way to save whole setups (except the status of the live mixer) into slots for later playback. These can be recalled using a MIDI note controller, giving an easy way to make a performance. Of course, MIDI messages may be sent from other applications too.

Each numbered button represents a slot into which a global patch can be saved. The action that takes place when one of these 32 slot buttons is pressed depends on which of the following 4 modes is set:



< (recall): the information stored in the slot is recalled.

+ (store): the current setup is stored in the slot - but only if it is currently unoccupied.

X (delete): if the slot is filled, delete the information.

T (tweak): recall the information in the slot, if there is any, and any subsequent changes are remembered before another slot is selected.

Empty slots are shown by black buttons, filled slots turn the button orange, and the last slot to be recalled will turn its button yellow.

! BEWARE !

All of the current states (except that of the Live Mixer) will be saved into a slot. That includes whether each synth and sequencer is playing or not. If you save to a slot after silencing everything, silence will be all that the slot will recall. If you need to give your ears a break temporarily, remember you can use the "mute" button in the Control Bar.



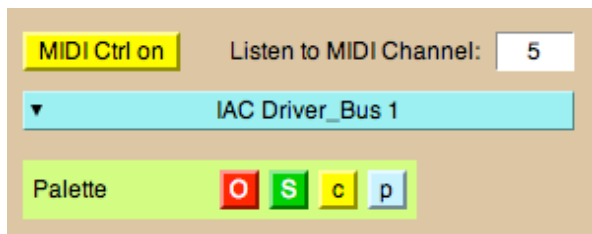
Blend / RND Blend button & number box

When a slot is recalled, the information may be blended with the

previously selected preset. Since most of the values present in the program are simply numbers, it is easy enough to interpolate between sets of them, so that the result may be something inbetween. This can lead to unpredictable, although not totally random, presets. The amount of blending that takes place is set by the number box - at 0, no blending takes place. At 0.5 the result will be exactly inbetween the two presets, and at 1.0 the result will simply be whatever the last preset was. If the button is set to RND Blend, then the actual amount of blending will be randomly chosen between zero and whatever the number box shows.

Volume adjust

As the output volume may vary a lot between presets, here an adjustment can be made. It immediately affects whichever preset was last selected, with no resaving needed. If there is no such preset, the box will display "nil."



MIDI note control:

The button marked **[MIDI Ctrl off / MIDI Ctrl On]** engages or stops MIDI note control of the palette, as might be expected. The MIDI channel that is listened to is set in the number box next to it. Below is a pop-up menu, where the interface used is selected.

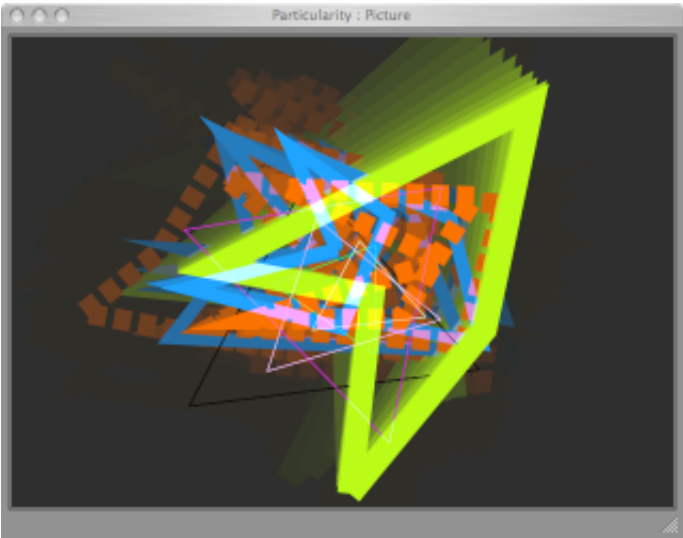
Here are the note number to function assignments:

- 36 - recall preset
- 38 - store preset
- 40 - delete preset
- 41 - tweak preset
- 48 - 70 - engage slots 1 - 32

O/S/c/p

Open, Save, copy or paste the palette data. These files will have the extension: .c2pl_pal

Pictures



The Picture Window is where the animations are displayed. By default it is inactive until "enabled" via the button in the Picture Controller window. The Picture Controller sets all the parameters for the animated shapes.

There are 8 shapes in total, one for each channel. The movement of each of the shapes is mostly influenced by that channel's sequencer. The 6 envelopes are turned into x,y co-ordinates, resampled to make 10 x,y points, and then plotted in 2D space. A little experimentation will make the concept a bit clearer.

The Picture Controller



enabled / disabled button

Start or stop updates to the picture.

Accept update from Palette button






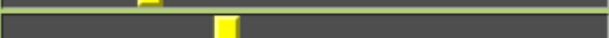
Whether or not a recall from the Palette should update picture parameters.

FPS number box

Sets the frames per second of the Picture update. This can make the animation smoother but at the cost of increased CPU. This value may be set according to available computer power or for artistic reasons.

resize button

This will change the picture area according to the bounds of its window. (Unlike many other windows, automatic resize is not possible with the Picture, hence this manual function.) Larger picture areas will increase CPU usage.

width mult	0.08		2.61	M		
non wid mult	0.22		0.221	M		
vol max	0.6		1.28	M		
movement amt	0.23		0.502	M		
flux sens	0.36		0.292	M		
blendMode	0.33		5	M		

Slider GUI

This GUI follows the same rules as the similar ones in the Synth window. Here are the explanations of the parameters:

bounds arr

Blends the arrangement of the 8 animations (one for each synthesis process) between everything sharing the same space, and a 4 x 2 configuration.

line width

The width in pixels of any line drawing.

width mult

A multiplier value to the line width. This allows for extra wide lines, if needed.

non wid mult

A multiplier value to the line width for shapes representing synthesis channels that are switched off. When no output is taking place, the representative shape is a triangle.

vol max

The maximum size that the Live Mixer can change the animation to.

movement amt

This parameter does not currently have any effect.

flux sens

The "flux amount" parameter in the synthesis process can be represented by the random

fluctuation of shape co-ordinates. This parameter sets how much of this randomness is used.

blendMode

When shapes are plotted on top of each other, their colors may be blended in different ways. The default value is 0, in which case the colors will appear as normal. Experiment with this parameter in order to see the results of other modes.

! BEWARE !

Certain combinations of colors and blend modes may render any or all animations invisible.

maskAlpha

This determines how much of the previous frame is left behind in the currently updated picture. By default it is 1, meaning the animation is overwritten completely with each frame. Setting this value lower results in something looking like a 1970's video effect - experiment and see.

blob width mult

Some of the styles feature "blobs" or outlined blobs. This value sets how much wider they are than the lines, as a multiplier.

dashMult

The "probability" parameter in the synthesis process can be set from 0 to 1. This may be reflected in the animation by a dashed line, the pattern of which is influenced by this value. So for a value of 1, the line is unbroken. For 0.5, half of the line will be "missing", for 0.2 only a fifth of the line will be drawn, and so on. This value sets a multiplier based on the width of the Picture view, of how long each complete dash pattern length should be. As usual it is best to move the slider and watch what happens.

minimum dash

For very small "probability" values, the line may become almost invisible. This determines the minimum threshold below which the line will not be any more "dashed."

style

The style of all animations may be set here as a number between 0 and 10. Here is a list of the styles available:

- 0 - simple lines between the points.
- 1 - spokes radiating from the centre to the points.
- 2 - a blob at each point.
- 3 - spokes and blobs together.
- 4 - a circle at each point.
- 5 - spokes and circles together.
- 6 - a square at each point.
- 7 - a rectangle is drawn to each point.
- 8 - spikes radiating from the centre to each point.
- 9 - convex curves between each point.
- 10 - concave curves between each point.

background

Sets the background colour according to a value between 0 and 1. Along this line, all the combinations of red, green and blue are represented, making this a very sensitive parameter to alter.

color 1- 8

Sets the colours of the individual animations.



D_all

Return all the values in the slider GUI back to their defaults.

O / S / c / p

Open, Save, copy or paste the Picture Control data. The resulting files will have the extension "c2pl_pic".