Dj64 v1.1

By Bitbasic

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Introduction

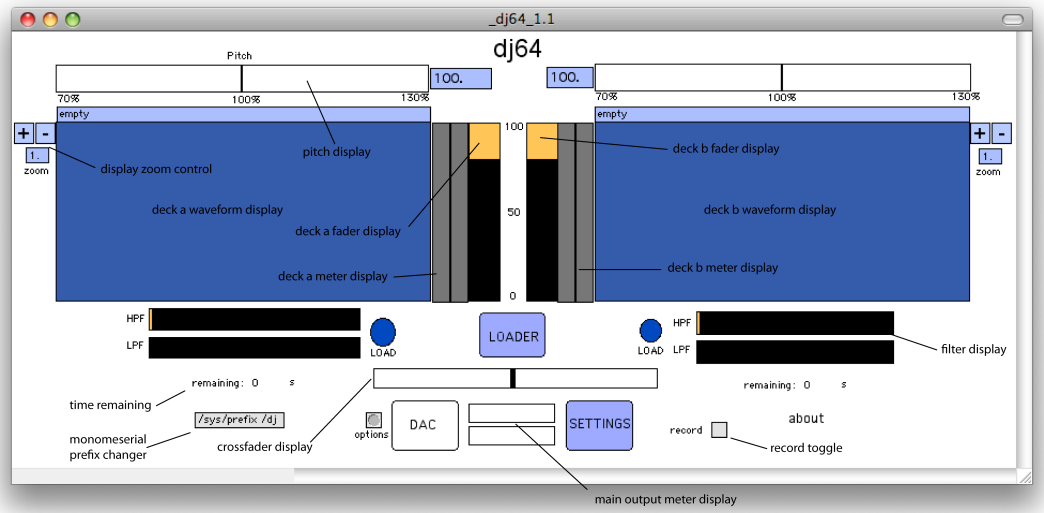
Dj64 is a patch written for Max/MSP (v4.6.3). It is designed to emulate all of the sound manipulation techniques that are possible using conventional vinyl turntables and a dj mixer. This patch also contains other methods of sound manipulation that are not usually available in djing software.

I decided to write this detailed manual because this is quite a difficult patch to understand at first. It requires the user to take an active part in learning the structure and functions of the patch. It is also necessary to practice using the patch, as it is to practice on conventional turntables.

This patch requires that you are running Monomeserial, using the prefix '/dj', host port 8000, and listen port 8080 ([new] you can use the 'sys/prefix /dj' message in the bottom left of the panel to change the prefix in Monomeserial).

1 Panel

Once the patch has loaded you will see the panel, which is badly labelled below.



First, enable DAC by clicking on 'DAC'. The panel in this patch acts as a display, not as a method of control. Every action is done using the monome, so the panel is mainly used to show things of significance to the user, such as the pitch, fader positions, etc.

new] You can use the panel to record the output of dj64. Click on the 'record toggle' button, choose a filename, location, and file type, and click 'save'. Remember to turn off record when you are done.

The waveform of tracks loaded in the patch is displayed on the waveform display. The user can use the mouse to click to a certain point in the track, and also zoom in and out. The panel also functions as a way of loading tracks.

[

2 Loading

To play a sound file, it must be loaded into the patch. This patch will load .wav and .aif files. To load .mp3 files, click on 'Settings', and check the box labelled 'MP3 LOAD?' [*note: with 'mp3 load' enabled, it will take slightly longer to load wav and aif files, and for this reason is by default switched off*].

There are several ways of loading files into the patch.

Drag and Drop

This method is the most intuitive. Use a Finder/Explorer window, and drag-and-drop files onto either of the blue waveform displays, depending on the desired 'deck'. The waveform will appear if the load is successful.

Load Button

Underneath each 'deck' is a small blue circle labelled 'LOAD'. Click on the circle, and a file browser will open. Choose your file, and it will be loaded in to the chosen deck.

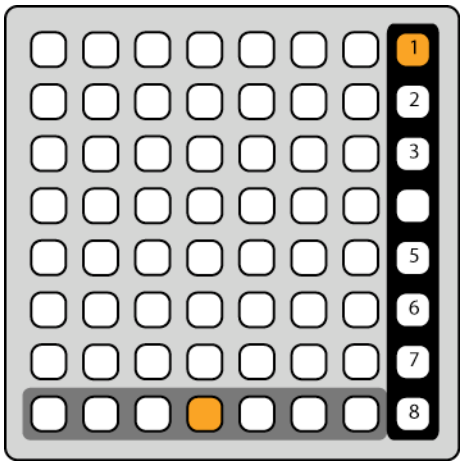
Loader

See 3.7 'Page 8 - Loader'

3 Monome layout

3.1 Overview

There are currently seven main pages in dj64. They are always selectable using the 8th column, and are shown on the following diagram.

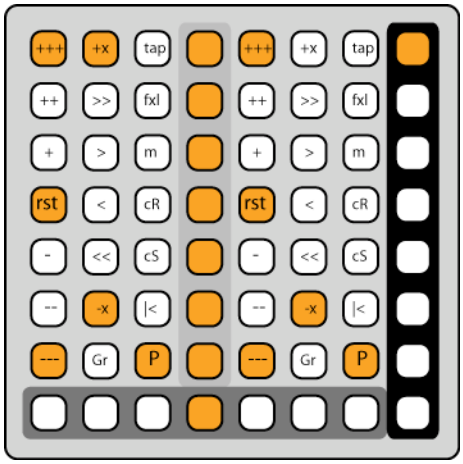


The page buttons are shown using the black background. Page 1 is the most used page, and consists of playback controls and effects. Page 2 controls the faders, page 3 controls the filters, [new] page 5 controls playback position over the whole audio file, [new] page 6 is a settings page, [new] page 7 is for live input,

and page 8 is for loading files into the patch. There is still one page left. Any ideas for this page should be posted at monome.org.

Also shown using the dark-grey background is the crossfader along the 8th row, which is unaffected by page changes. Page changes and crossfader changes can be done at any time throughout using the patch.

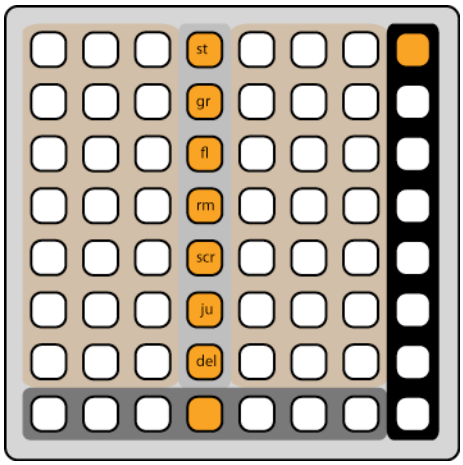
3.2 Page 1



This is the most important page of the patch. The two identical 'decks' are placed either side of the central strip (used for effects, explained later). Each function is represented by a letter on the diagram above.

P	Play / stop
|<	Return to the beginning
cS	Cue set.
cR	Cue Return. When held down, the track stops and returns to the position set by 'cue set'. Also whilst holding, the set cue position can be nudged backwards and forwards by pushing and holding '<' and '>'. Release 'cue return' to start playing from the cue point. 'Play / stop' can also be used whilst holding down 'cue return'.
m	Toggle monitor. Chosen deck plays in the monitor path (output 3 and 4). When deck a and deck b are both in the monitor path, they are split left and right respectively.
fxl	Effects latch. Causes effects to stick (see 3.4).
tap	Tap tempo
Gr	Toggle granular playback (speed doesn't effect pitch)
-x	Jump backwards by an amount of time (default 5 seconds)
<<	Nudge : heavy slow down
<	Nudge : light slow down
>	Nudge : light push forward
>>	Nudge : heavy push forward
+x	Jump forwards by an amount of time (default 5 seconds)
+++/++/+ /---/--/-	Pitch change (varying rates of change)
rst	Reset the pitch

3.3 Page 1 - Effects



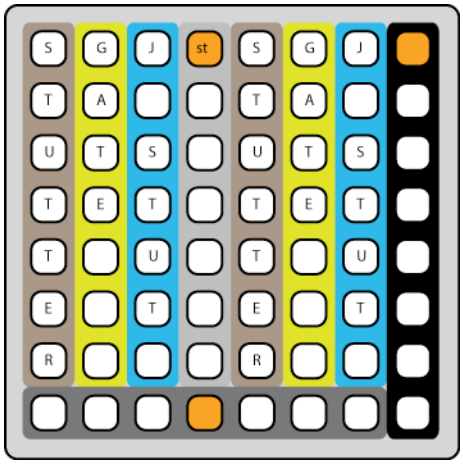
There are 7 different effect buttons. These are shown below.

st	Stutter/periodic gate/jumping stutter
gr	Granular time stretch and pitch shift
fl	Flanger
rm	Ring Modulator
scr	Scratch
ju	Jump (MLR)
del	Delay

When an effect button is held down, both decks change to the appropriate effect page, and the effect can be triggered on either deck by pushing an effect parameter button.

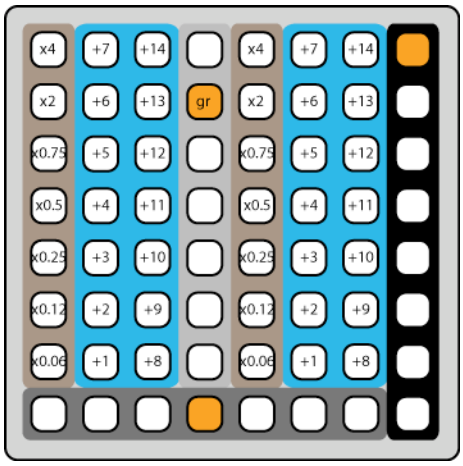
Here are some diagrams showing the layout for each effect. This will not teach you everything you need to know about each effect, you will need to experiment and familiarise yourself with the different parameters. It would be silly to have to read things like “and button (2, 3) increases the ring modulation frequency to 160Hz”. Compare the light information on the monome to the areas shown in the diagrams (using horrible colours) and listen to what things do.

3.3.1 Stutter / gate / jumping stutter



When the ‘stutter’ effect button is held down, the user can apply either a stutter, periodic gate, or a jumping random-stutter effect. The different parameters are linked with the tap tempo (ie the length of stutter can either be 2xbeat, 1xbeat, 0.5xbeat, 0.25xbeat, etc).

3.3.2 Granular time stretch / pitch shift

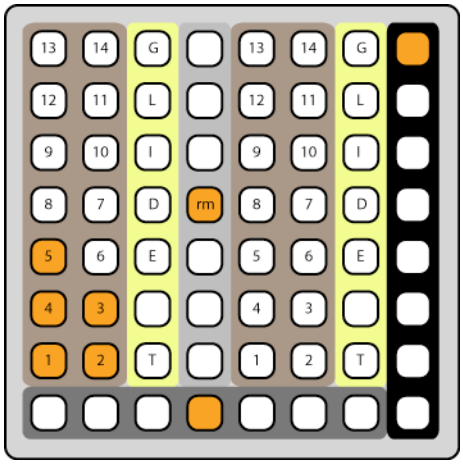


Use the grey region to time stretch by multiples of the tap tempo. Use the blue region to increase the pitch by a number of semi-tones.

3.3.3 Flanger

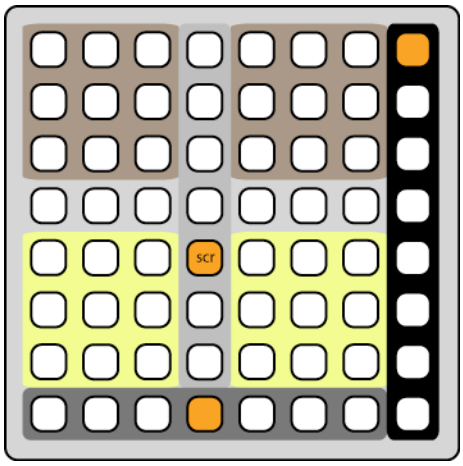
The delay times and feedback percentages are preset, and are set like sliders. The smallest values are selected using the buttons closest to you. Pressing a button in the ‘amount’ column will add that amount to the audio, and releasing the button will remove it.

3.3.4 Ring modulator



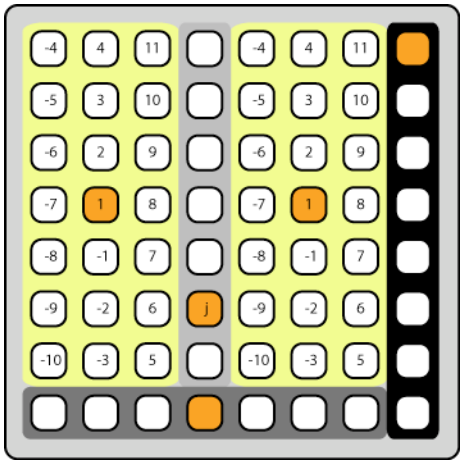
The ring modulator frequency increases in the same slider-like style, but snakes along the two rows. The glide column (shown with the horrible yellow background) is also like a slider, and adjusts how long it takes to get to a new modulation frequency if another frequency change is made. Experiment with this, as it is good fun.

3.3.5 Scratch



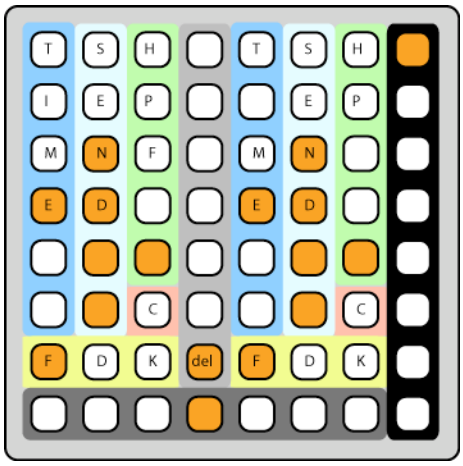
Well, its not really scratching, but it'll do. Use the grey area to slow down at various rates and durations, and use the yellow area to rewind at various rates and durations linked with the tap tempo.

3.3.5 Jump (MLR)



Press the 'jump' effect button, and a stripped-down vertical version of the well-known app 'MLR' will begin on both 'decks'. Press the jump effect button on the beat, and you can jump to other beats. The beat numbers are shown in the diagram, and it runs at the speed of tap tempo. There is no beat-clocking or pattern recording, so it will not function as smoothly as MLR.

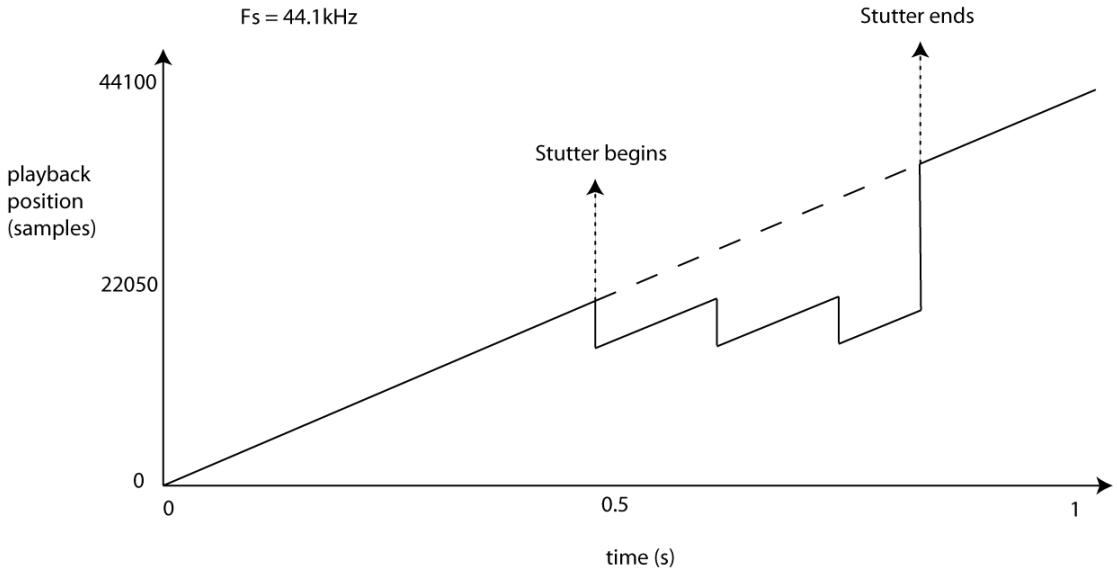
3.3.6 Delay



Select the delay time in the blue section. Send for send. Use 'cut' to stop and reset the delay (in case you've just sent a load of audio to delay, and your important drop is coming up!). 'HPF' is a high-pass filter in the delay return. 'FDK' is the amount of feedback.

3.4 Effect latching.

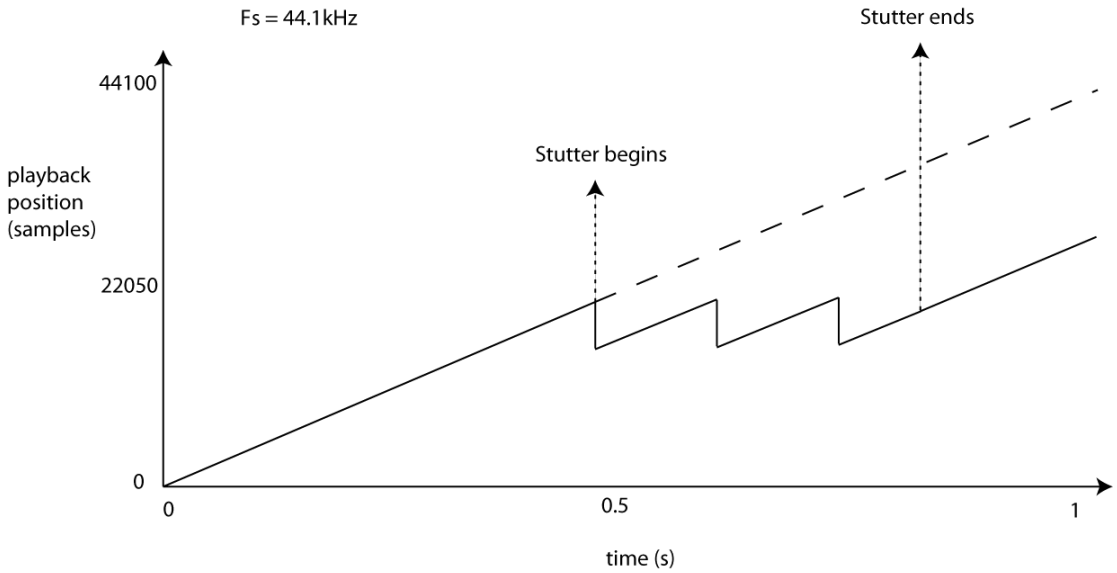
If you have already experimented with these effects, you will have noticed that none of them latch. These effects were originally designed to be triggered by single button presses that are held down. Also, none of the effects change the overall position of playback. This is difficult to explain, so here is a diagram.



A ramp is reading through a table of samples. If a stutter effect is applied with effects latch disabled ('Stutter begins'), the ramp will loop over a short selection of samples. When the effect is released ('Stutter ends'), the ramp is returned to the position that it would have been, had no effect been pressed. This is advantageous, as you can mangle the loaded audio all you like, and it will always been in time (with itself).

The effects require for you to hold down the appropriate effect parameter to use the effect. What if you wanted to apply a flanger, and then change the speed of playback, then apply a stutter? This is, so far, not possible because the effects do not latch.

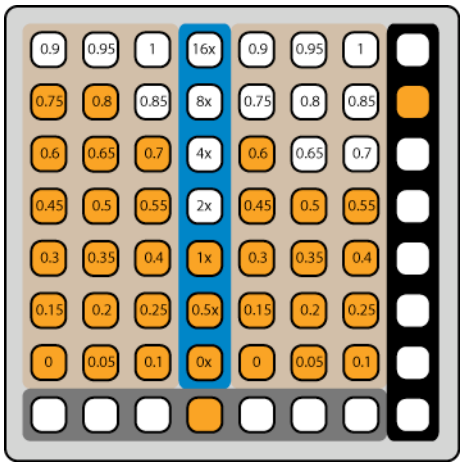
On page one, there is a toggle called 'Effects latch', which solves this problem. Effects can now be toggled on or off. It mostly requires the user to repeat an effect parameter to turn the effect off, mostly. Also, any effect which changes the playback position (stutter, jumping stutter, time stretch, scratch and jump) does change the playback position. Argh, why is this so hard to explain!?



So, using the same stutter example as before, with effects latch enabled, playback does not return to the position it would have been, had the effect not happened. Instead, it follows after the effect has finished.

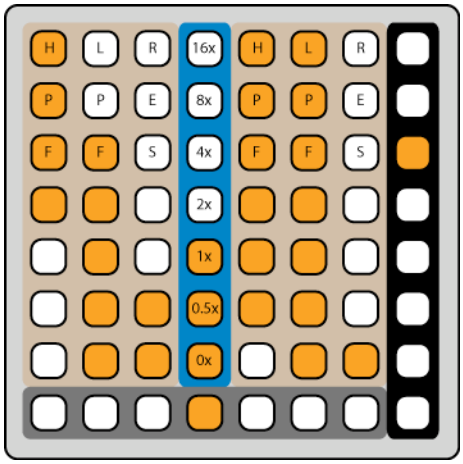
This section makes little sense unless you experiment with how effects latch changes the behaviour of the effects. Each effect is changed in a different way, so it is worth finding out.

3.5 Page 2



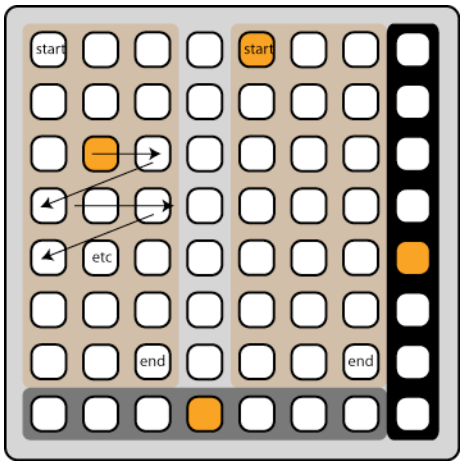
The second page lets the user control the faders. [new] The middle column is a slider to enable interpolation between different fader values. Each button sets the interpolation time as a multiplier of the time set by tap tempo.

3.6 Page 3 - Filters



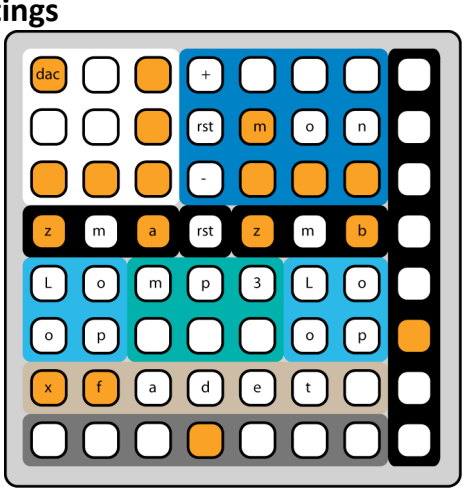
High-pass filter and low-pass filters. [new] The third column is for the resonance of the filter, and the middle column, like the fader page, also sets an interpolation time for changes to these parameters.

[new] 3.7 Page 5 - Track Search



This is a bit like a giant 3 column mlr. You can skip to any point in a track, and see how far through the track you currently are.

[new] 3.8 Page 6 - Settings



This is a little bit daunting at first. This page is used to change some settings in dj64. From the bottom up:

'xfadet' is the crossfader interpolation time (based on the most recently received tap tempo time, in the same way as the filters and faders).

'loop' will toggle looping for each deck, 'mp3' will toggle mp3 loading,

'zma' and 'zmb' will control the zoom for the waveform displays on the panel, 'rst' will reset both displays to '1'.

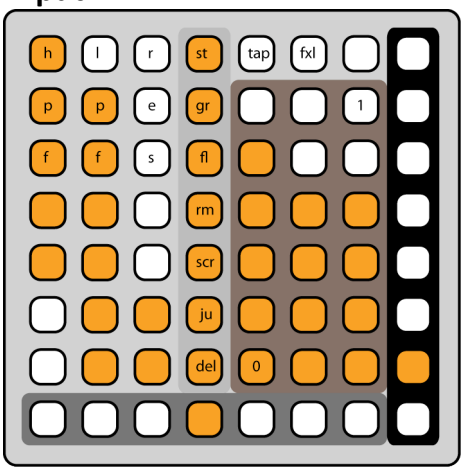
The 'mon' section (blue) is used to control the level of the monitor output. Use + and - to increase and decrease the level, and 'rst' to return to the default value (to set the default value, save the patch (file, save) with your chosen value).

'dac' will turn dac on and off. It is surrounded by unused buttons so you don't accidentally hit this button when furiously changing other settings.

Further to this, there are other settings which can be altered in the settings panel page (click 'settings' from the panel). Watch out though, because some settings

can be altered using both the settings panel and the monome settings page. This entire way of modifying settings will be tidied up in dj64 v2 (by james drake, thanks james).

[new] 3.9 Page 7 - Live Input



Set inputs 1 and 2 in max's dsp settings. Use the buttons shown by the brown area to turn up the input. You should be able to hear it out of outputs 1 and 2 straight away. If you can't you have a problem, and you need to mess around with your soundcard settings and max settings. If you can't work it out, post your problem on monome.org.

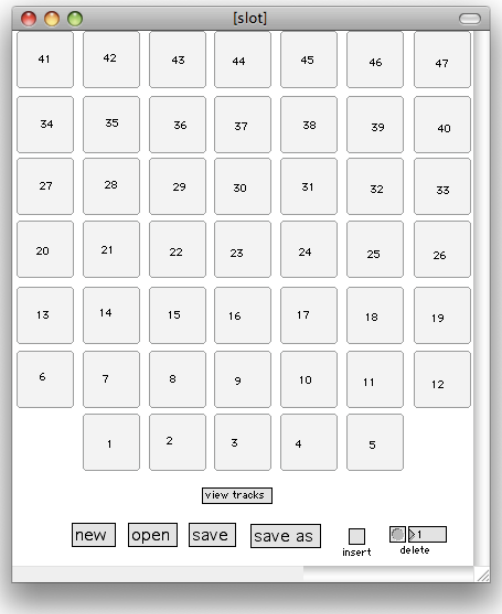
The first three columns are filter controls for your input (no interpolation, sorry, ran out of buttons! I suppose it could be one tap long, what do you think?). You can also use the good ol' effects strip and apply effects to your live input (apart from jump, I thought that would be useless.

This is in early testing stages, and I would love to know what you think. I have already extracted this part of the patch and called it 'djfx', which anyone can add to the output of their patches, and use these effects to mash up their sounds. If this works for people, I will make a wiki page for it.

3.10 Page 8 - Loader

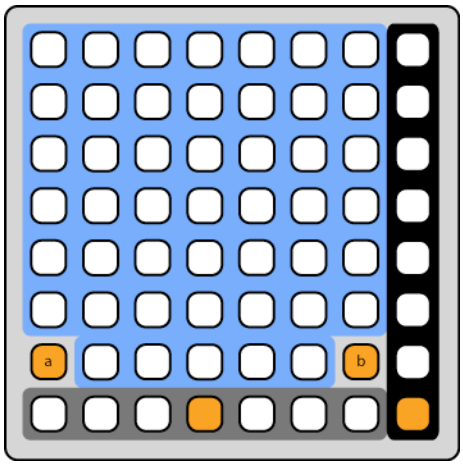
Tracks can be loaded using the monome. This means the user does not need to use the computer to load tracks, which in turn means the monome dj can completely separate himself from the mouse and screen, and do an entire set of up to 47 tracks whilst only using the monome. This generally amazes people, as they wonder how all of the tracks can fit into such a small box.

First, tracks must be chosen to be used in the live set, and added to a playlist. It's like choosing records for your record bag, and this is done using the panel. On the main screen, next to the 'DAC' button, open the loader screen by clicking 'Loader'.



Drag and drop files from Finder / Explorer onto one of the numbered squares. Each square represents a button for the loader page on the monome, which will be explained later.

Click ‘view tracks’ to view the playlist which contains the added files. ‘New’ will create a new playlist. ‘Open’ will open a previously saved playlist. ‘Save’ will overwrite the current playlist, and ‘save as’ will save the playlist as a new file. When ‘insert’ is checked, a track can be added, and all other tracks with a higher index number in the playlist will increase by one. Select a number and click the button next to ‘delete’ to delete a track, and inversely, all tracks with a higher index number will decrease by one.



On the monome, the buttons shown with the blue area are tracks 1-47 from the current playlist. Buttons labelled ‘a’ and ‘b’ are the loader toggle buttons.

Any track in the current playlist can be previewed. Press and hold one of the buttons, and 5 seconds of the track will be played out of the monitor outputs (3 and 4). Also, the track name will be scrolled across the monome using Stretta’s Nerdscroll patch (thanks Stretta!).

To load the track onto a ‘deck’, press and hold either the ‘a’ or ‘b’ toggle buttons, and press one of the 47 playlist buttons. The toggle buttons should stop flashing, to show that Max is loading the file. Once they start flashing again, the track should be loaded.

Remember, if you want to load MP3 files, you need to enable ‘MP3 LOAD’ in the settings window. Otherwise, this method will not work.

Enjoy. Look out for dj64 v2. James and I have not started it yet, so it should be finished in about 3 years!