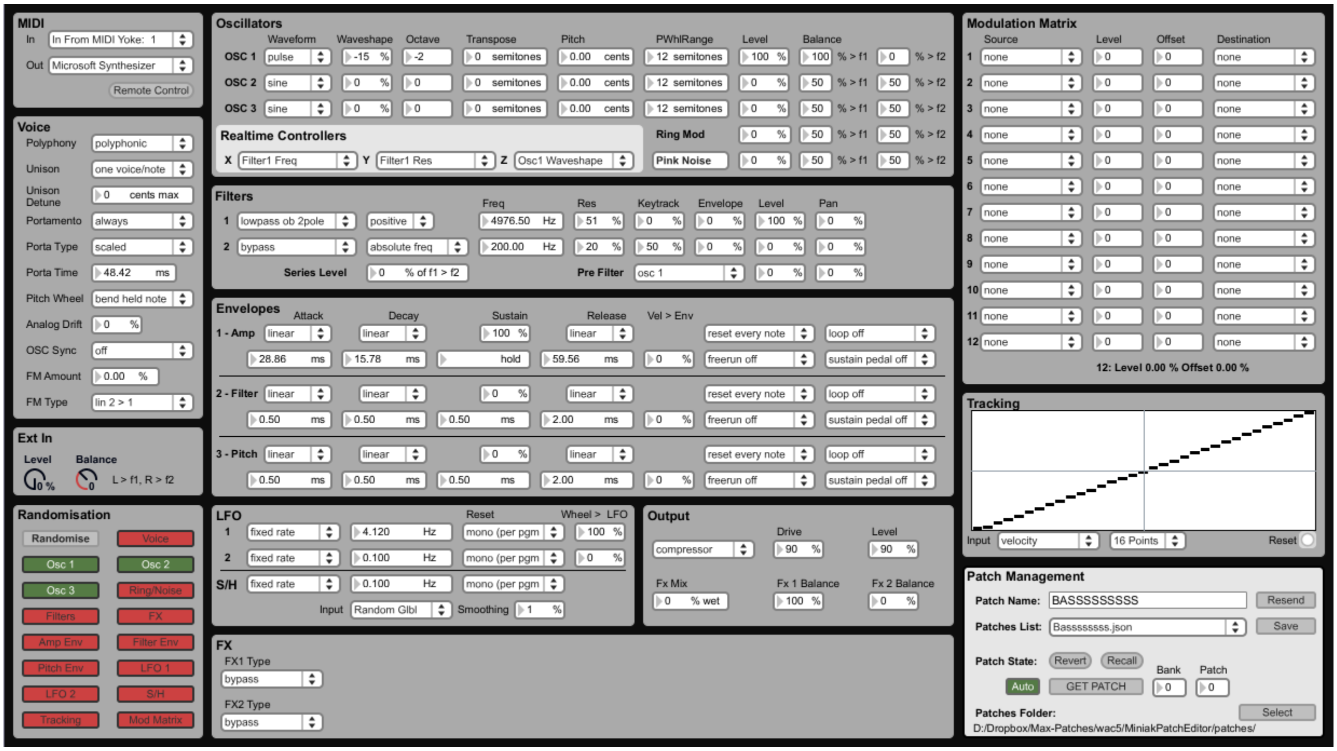
Miniak Patch Editor



MIDI
In: In From MIDI Yoke: 1
Out: Microsoft Synthesizer
Remote Control

Voice
Polyphony: polyphonic
Unison: one voice/note
Unison Detune: 0 cents max
Portamento: always
Porta Type: scaled
Porta Time: 48.42 ms
Pitch Wheel: bend held note
Analog Drift: 0 %
OSC Sync: off
FM Amount: 0.00 %
FM Type: lin 2 > 1

Ext In
Level: 0 %
Balance: 0 L > f1, R > f2

Randomisation
Randomise, Voice, Osc 1, Osc 2, Osc 3, Ring/Noise, Filters, FX, Amp Env, Filter Env, Pitch Env, LFO 1, LFO 2, S/H, Tracking, Mod Matrix

Oscillators

	Waveform	Waveshape	Octave	Transpose	Pitch	PWhlRange	Level	Balance	
OSC 1	pulse	-15 %	-2	0 semitones	0.00 cents	12 semitones	100 %	100 % > f1	0 % > f2
OSC 2	sine	0 %	0	0 semitones	0.00 cents	12 semitones	0 %	50 % > f1	50 % > f2
OSC 3	sine	0 %	0	0 semitones	0.00 cents	12 semitones	0 %	50 % > f1	50 % > f2
Ring Mod							0 %	50 % > f1	50 % > f2
Pink Noise							0 %	50 % > f1	50 % > f2

Realtime Controllers
X Filter1 Freq Y Filter1 Res Z Osc1 Waveshape

Filters

			Freq	Res	Keytrack	Envelope	Level	Pan
1	lowpass ob 2pole	positive	4976.50 Hz	51 %	0 %	0 %	100 %	0 %
2	bypass	absolute freq	200.00 Hz	20 %	50 %	0 %	0 %	0 %

Series Level 0 % of f1 > f2
Pre Filter osc 1 0 % 0 %

Envelopes

	Attack	Decay	Sustain	Release	Vel > Env		
1 - Amp	linear	linear	100 %	linear		reset every note	loop off
	28.86 ms	15.78 ms	hold	59.56 ms	0 %	freerun off	sustain pedal off
2 - Filter	linear	linear	0 %	linear		reset every note	loop off
	0.50 ms	0.50 ms	0.50 ms	2.00 ms	0 %	freerun off	sustain pedal off
3 - Pitch	linear	linear	0 %	linear		reset every note	loop off
	0.50 ms	0.50 ms	0.50 ms	2.00 ms	0 %	freerun off	sustain pedal off

LFO

			Reset	Wheel > LFO
1	fixed rate	4.120 Hz	mono (per pgm	100 %
2	fixed rate	0.100 Hz	mono (per pgm	0 %
S/H	fixed rate	0.100 Hz	mono (per pgm	

Input Random Glbl Smoothing 1 %

Output
compressor
Drive 90 %
Level 90 %
Fx Mix 0 % wet
Fx 1 Balance 100 %
Fx 2 Balance 0 %

FX
FX1 Type bypass
FX2 Type bypass

Modulation Matrix

	Source	Level	Offset	Destination
1	none	0	0	none
2	none	0	0	none
3	none	0	0	none
4	none	0	0	none
5	none	0	0	none
6	none	0	0	none
7	none	0	0	none
8	none	0	0	none
9	none	0	0	none
10	none	0	0	none
11	none	0	0	none
12	none	0	0	none

12: Level 0.00 % Offset 0.00 %

Tracking
Input velocity 16 Points Reset

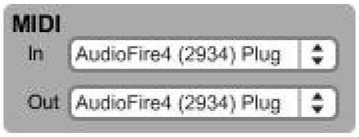
Patch Management
Patch Name: BASSSSSSSSS Resend
Patches List: Bassssssss.json Save
Patch State: Revert Recall
Auto GET PATCH Bank 0 Patch 0
Patches Folder: Select
D:/Dropbox/Max-Patches/wac5/MiniakPatchEditor/patches/

This manual explains how to use the Miniak Patch Editor application for editing and managing synthesiser patches on the Akai Miniak synthesiser. The following areas are covered:

Contents

MIDI

You can communicate with the Miniak using a USB or Firewire MIDI interface.



MIDI

In AudioFire4 (2934) Plug

Out AudioFire4 (2934) Plug

- Connect MIDI Out of your interface to MIDI In of the Miniak
- Connect MIDI In on your interface to MIDI Out of the Miniak
- For sending MIDI to the Miniak. select the MIDI Out port of your interface in Miniak Patch Editor
- For receiving MIDI from the Miniak, select the MIDI In port of your interface in Miniak Patch Editor

Once you have selected MIDI ports, they will be remembered and reused next time Miniak Patch Editor is loaded

Real-time (NRPN) And SYSEX MIDI Messages

All of the parameters that define a patch (or program) in the Miniak can be controlled in real time by sending MIDI NRPN messages to the Miniak.

Miniak Patch Editor provides a graphical interface to control every parameter of the Miniak - this is achieved by sending NRPN messages when any element in the interface is edited.

The Miniak is also capable of sending and receiving an entire patch in one go via a 'SYSEX dump'. Miniak Patch Editor is capable of receiving a SYSEX dump from the Miniak and updating the interface to reflect the patch currently loaded on the Miniak. This feature is described in more detail in the Patch Management section.

Editing Patches

The Miniak Patch Editor interface breaks down all of the available patch parameters into related groups of functionality. The value of each control element can be edited as follows.

With the mouse:

- Click a numeric element, and drag the mouse up/down while holding the button down
- Click drop down lists, and perform a second click to select a value

With the keyboard:

- Select a numeric element by clicking, then type the desired value
- Use the up/down keys to change the value of the most recently edited parameter. Tap to adjust the value by one, or hold down for rapid changes.

With your MIDI In/Out properly set up, any changes you make to elements in the Miniak Patch Editor interface will immediately cause that parameter on the Miniak to be changed.

Nb. The numeric parameters can only have 'discrete' values. Sometimes the value you type into a numeric parameter will automatically 'correct itself' to the nearest possible discrete value allowed by the Miniak.

For example, trying to enter an envelope attack time of 50ms will cause the interface to automatically correct the value to 48.44ms

Refer to the Miniak manual for reference on how the various parameters affect the synthesiser's sound.

Modulation Matrix

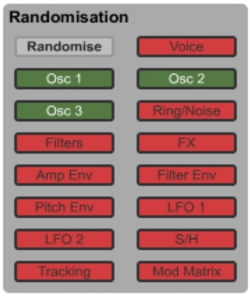
Miniak Patch Editor allows you to edit the source, level, offset and destination for all 12 of the 'modulators' available on the Miniak. Unfortunately, you must manually 'add' each modulator to the current patch on the Miniak itself before the corresponding elements in Miniak Patch Editor actually take affect.

It is worth saving a patch on the Miniak with all 12 modulators pre-enabled for using with Miniak Patch Editor.

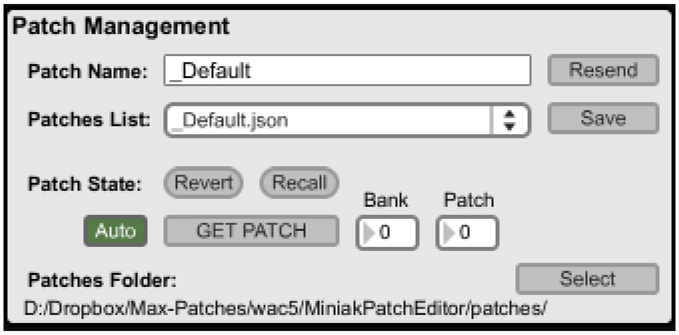
Randomisation

Random synthesis parameters can be generated using the Randomisation section of Miniak Patch Editor. The grid of buttons represent the various sections of the patch. These can be turned off (red) and on (green) for randomisation by clicking them.

When the Randomise button is clicked, only sections of the patch corresponding to a green grid buttons will be randomised.



Patch Management



Patch Management

Patch Name: _Default

Patches List: _Default.json

Patch State:

Bank 0

Patch 0

Patches Folder: D:/Dropbox/Max-Patches/wac5/MiniakPatchEditor/patches/

Loading Patches

When you first load Miniak Patch Editor you will need to select a Patches Folder by clicking the 'Select' button

- The Patches Folder selected is remembered next time you load Miniak Patch Editor.

Once a Patches Folder has been selected, the Patches List will be populated with all the patch files in that folder.

- To load a patch select it in the Patches List

The Miniak Patch Editor download includes a folder with a few example patches. To use:

- Copy/paste the folder of patches to a convenient location on your hard drive
- Press the Select button in Miniak Patch Editor
- Locate and select the folder you just created

You can change the Patches Folder at any time. This allows different folders on your computer to be used to store different collections of Miniak patches

Saving Patches

Each patch you create in Miniak Patch Editor is stored as .json file on your computer. Patches saved in the current Patches Folder immediately appear in the Patches list

To save a patch:

- Click the Save button
- Choose a location and file name in the dialogue box that appears

Comparing Patch Edits

Miniak Patch Editor allows you to switch between saved and edited versions of the current patch. Use this function to evaluate how your edited patch sounds (compared to the original) before committing your patch with a save

- Click the Revert button to return the patch to its saved state
- Click the Recall button to return the patch to its edited state

Saving A Patch To Miniak

Miniak Patch Editor does not have the ability to copy a patch to the Miniak directly via MIDI SYSEX. If you want to transfer a patch made in Miniak Patch Editor to the Miniak, the steps to take are:

- Load the patch in Miniak Patch Editor
- Confirm the Miniak's parameters have been updated via NRPN by playing some notes
- On the Miniak, start editing the currently loaded patch
- Select 'store as copy'
- Manually enter the desired patch name

Retrieving Patch Via SYSEX From Miniak

You can retrieve a patch from the Miniak using MIDI SYSEX in the following ways:

Manually from Miniak Patch Editor

- Load the patch you want to retrieve on the Miniak
- Hold down the program button until the 'bank' and 'patch' values for the loaded patch are shown
- Enter these values in the bank/patch elements in the Patch Management section of Miniak Patch Editor
- Press the 'GET PATCH' button

Automatically from Miniak Patch Editor

- Turn on 'auto patch retrieval mode' by clicking the 'auto' button in the Patch Management section until it is green
- Change patches on the Miniak – the application will automatically update to show the currently loaded patch
-

Manually from the Miniak:

- Load the desired patch
- Enter edit mode for the current patch
- Scroll to the far right, locate the 'send Sysex' option and click the data knob

After performing any of the above actions, all elements in Miniak Patch Editor will be updated to reflect their value in the patch retrieved from the Miniak.

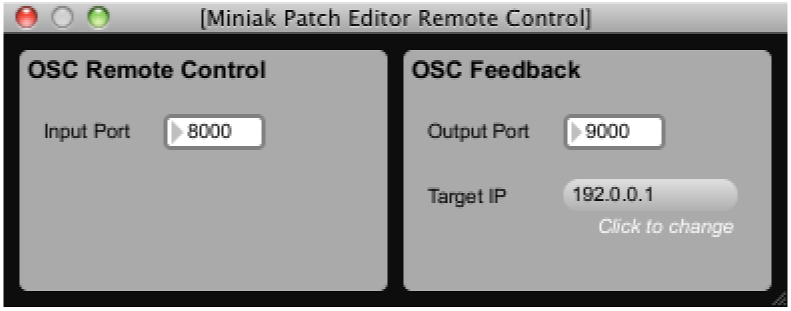
Patch Names

When you retrieve a patch from the Miniak, the Patch Name is also retrieved and displayed within Miniak Patch Editor.

Editing the Patch Name in Miniak Patch Editor has no affect on the name of the currently loaded patch on the Miniak. This name, however, is stored and recalled within the .json patch files.

OSC Interface

Miniak Patch Editor includes a bi-directional Open Sound Control (OSC) interface – it is accessed via the 'Remote Control' button in the application.



[Miniak Patch Editor Remote Control]

OSC Remote Control

Input Port 8000

OSC Feedback

Output Port 9000

Target IP 192.0.0.1

The interface includes an 'OSC server' that listens and responds to incoming OSC messages. This allows any parameter in the patch (and hence any parameter on the Miniak synthesiser) to be edited in realtime from another OSC aware application.

For example, sending the following OSC message to Miniak Patch Editor will set the waveshape to maximum for oscillator 1:

- `/osc/1/Waveshape 100`

Miniak Patch Editor also automatically reports any parameter changes via OSC. These are transmitted by the 'OSC client' included in the OSC interface. The messages transmitted can be used to 'sync' an external application with the patch being edited in Miniak Patch Editor

Miniak Patch Editor includes a template for the iPad application TouchOSC that has been written to allow full realtime control of the Miniak Patch Editor application.

Configuring Miniak Patch Editor to use OSC

OSC messages are transmitted between applications over computer networks using the UDP protocol, with an OSC client sending messages, and an OSC server receiving them. Both the client and server in Miniak Patch Editor need to be configured to use specific network ports; this configuration is done by clicking the 'Remote Control' button. Here you can configure

- The input port used by the server (i.e. the 'OSC Remote Control' section)
- The output port used by the client (i.e. the 'OSC Feedback' section)
- The IP address of the computer to which the OSC client sends messages

All of these settings are automatically stored and recalled by Miniak Patch Editor

Nb. You may find the server in Miniak Patch Editor will not be able to 'bind' to a specific network – this is usually because another application is already using it. In this case, simply select a different port.

Using the Miniak Patch Editor TouchOSC Template

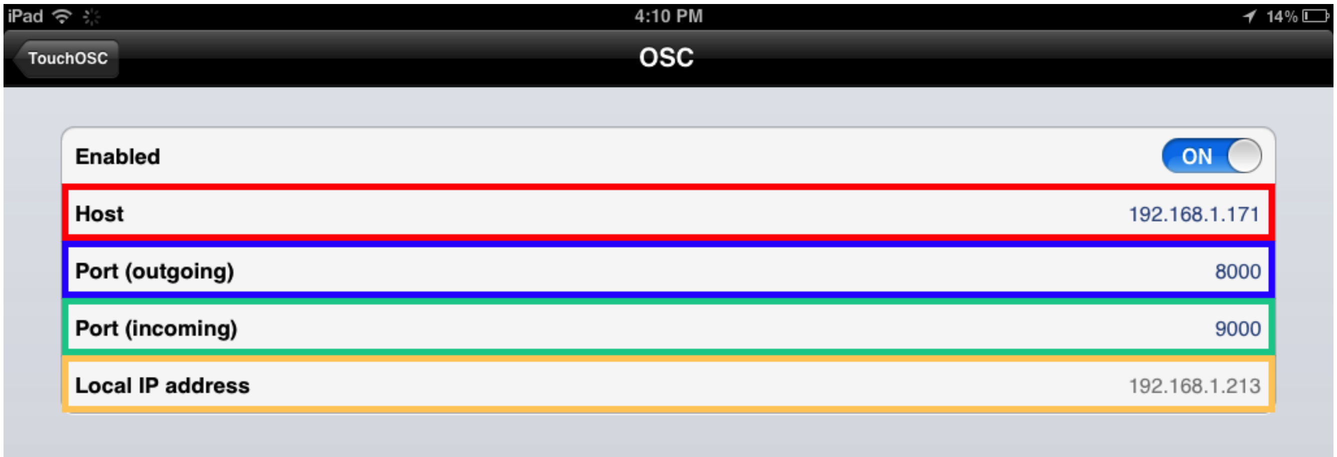
Miniak Patch Editor users who also have an iPad and the TouchOSC application may enjoy editing parameters on the Miniak using the included TouchOSC template. Note that this template is not a standalone solution for programming the Miniak and must be used in conjunction with Miniak Patch Editor.

Nb. Users who do not own an iPad/TouchOSC should still refer to this section for understanding the concepts that allow Miniak Patch Editor to be used with other OSC aware applications.

After transferring the Miniak Patch Editor TouchOSC template onto your iPad (this process is well-documented by Hexler, the authors of TouchOSC on their website), the two applications must have their OSC interfaces configured to use complimentary network ports

Configuring TouchOSC

In TouchOSC, configuration is performed via the “OSC Connections page” accessible from the home screen.



Enabled ON

Host 192.168.1.171

Port (outgoing) 8000

Port (incoming) 9000

Local IP address 192.168.1.213

The TouchOSC “OSC Connections” page

Enabled: This switch should be set to 'ON'.

Host: Enter the IP address of the computer running Miniak Patch Editor. Note the IP address displayed above is for illustrative purposes only; your IP address will be different.

Port (outgoing): This gives the network port that TouchOSC will send parameter changes to Miniak Patch Editor over.

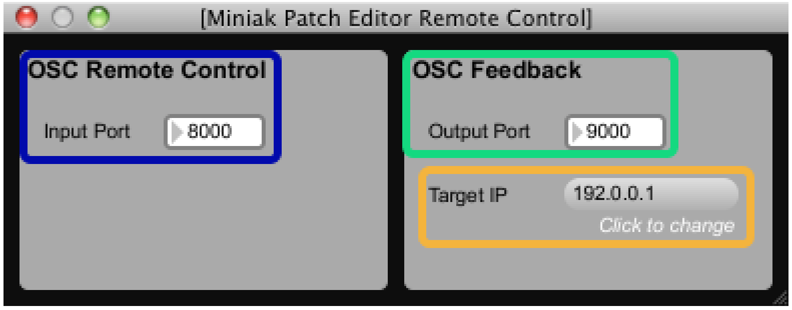
Port (incoming): This gives the network port across which TouchOSC will receive parameter changes from Miniak Patch Editor.

Nb. Miniak Patch Editor uses default network ports of 8000 and 9000; these port numbers will work for most users.

Local IP address: This field displays the IP address of your iPad

Configuring Miniak Patch Editor

Configure Miniak Patch Editor to compliment the settings you have configured in TouchOSC.



[Miniak Patch Editor Remote Control]

OSC Remote Control

Input Port: 8000

OSC Feedback

Output Port: 9000

Target IP: 192.0.0.1

OSC Remote Control Port: This gives the network port across which Miniak Patch Editor will listen for OSC messages being sent from your iPad and TouchOSC. It should be the same as the ***Port (outgoing)*** value set in TouchOSC.

OSC Feedback Port: This gives the network port on which Miniak Patch Editor will send OSC messages to TouchOSC on your iPad. It should be the same as the ***Port (incoming)*** value set in TouchOSC.

Target IP: Click the button to enter your iPad's IP address, as shown by the ***Local IP address*** field in TouchOSC.

With the networking between the two applications configured you should see the following:

- Any parameter changes in Miniak Patch Editor are reflected in TouchOSC
- Any changes made in TouchOSC template are reflected in both the Miniak Patch Editor user-interface, and in the Miniak synthesiser

Miniak Patch Editor
Authored by Will Crossland
Comments/queries/bugs willycwillydo@gmail.com

TouchOSC Template
Authored by Adam Neddo
adam.neddo@gmail.com

Appendix A: The Miniak Patch Editor TouchOSC Template In Detail

The TouchOSC interface includes 16 pages of virtual faders, rotaries, and buttons for editing almost all of the Miniak's parameters.

- Pages 1-7 and 16 deal with the Miniak's oscillators, filters, envelopes, modulation sources, and voicing options
- Pages 8-15 control 8 of the Miniak's 12 modulation routes.

Syncing TouchOSC to Miniak Patch Editor

When you first load the interface, TouchOSC will be out of sync with the Miniak Patch Editor (and therefore your Miniak). All buttons will appear inactive and all the rotaries and faders will be set to 0.

As you edit parameters in Miniak Patch Editor, OSC messages will be transmitted and the corresponding controls in the TouchOSC interface will update. This means "syncing" should not cause an issue when you are creating/editing a new patch from an "initialized" state.

For tweaking and inspecting existing patches, it's best to bring TouchOSC in sync with the loaded patch in Miniak Patch Editor (and hence in sync with the Miniak). To do this:

- Click the "Resend" button under Patch Management in the Miniak Patch Editor

Nb. Miniak programs are comprised of many different parameters and values, all of which are output via OSC when loading/resending a patch - TouchOSC is sometimes unable to process all the OSC messages sent when this happens. If, after clicking "Resend", the TouchOSC interface doesn't update completely (or at all), it may be necessary to click it again several times in rapid succession. Note that TouchOSC is reliably responsive to changes in single parameters in Miniak Patch Editor.

About the Interface

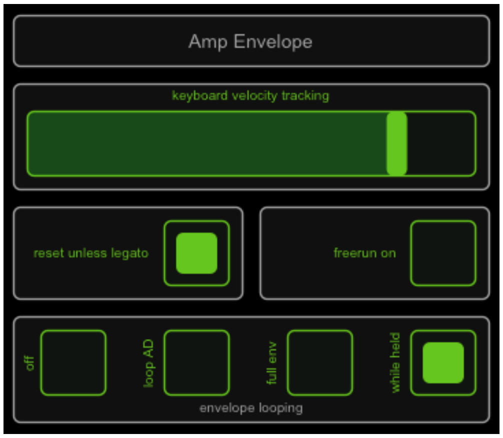
Each page within the interface deals primarily with one aspect of the Miniak's synthesis engine. Interface elements have been colour-coded both to help you orient yourself within the interface, and to aid in locating specific modulation sources and destinations among the many options.

In general, the interface favours the usability and precision of faders over rotaries. Each of the Miniak's core sound generating and shaping parameters is editable with faders and buttons.

Where space permits, smaller rotaries controlling parameters complementary to the primary focus of a page have been included. Frequency, resonance, and level controls for Filter 1 and Filter 2 are included on the Oscillator pages for instance. These complementary controls can make programming easier by reducing the amount of page switching you have to do, but are not meant as a replacement for the more precise controls found elsewhere in the interface.

Buttons come in two varieties: radio and toggle. Radio buttons allow you to select one option from a list of many, while toggle buttons allow you to turn a single parameter on or off.

Toggle buttons appear as a single button within the white box that contains the interface element. Radio buttons, on the other hand, appear as a collection of buttons within a single white box.



Two toggle buttons and a set of radio buttons that control the amp envelope.

Customizing the TouchOSC Template

Care has been taken in the design of the TouchOSC template to create a useful and usable programming interface for Miniak owners of all stripes. Be that as it may, it is very likely once the initial joy of having all the Miniak's parameters at your fingertips wears off, you will have ideas about how the interface could be improved to better serve your individual programming style and sound design work-flow.

To modify the Miniak Patch Editor TouchOSC template download the free TouchOSC Editor from Hexler (http://hexler.net/software/touchosc)

The provided template provides an ideal starting point for creating your own interface, as the hard work of carefully entering many dozens of OSC addresses and value ranges into interface elements is already done! Using the provided template as a starting point makes creating one of your own is easy. Like all software, however, the TouchOSC Editor has some quirks to be mindful of while creating your template.

Save a copy!

Unfortunately it's not possible to have two templates open simultaneously in the TouchOSC editor. To ensure the provided template remains in tact (so you can retain a working reference version) make sure to save a copy of the original template before you start experimenting with your own modifications. Having the original on-hand to copy/paste pre-configured interface elements from is very useful.

Pages are your friend

Most of the pages in the provided template are tightly packed with buttons and faders.

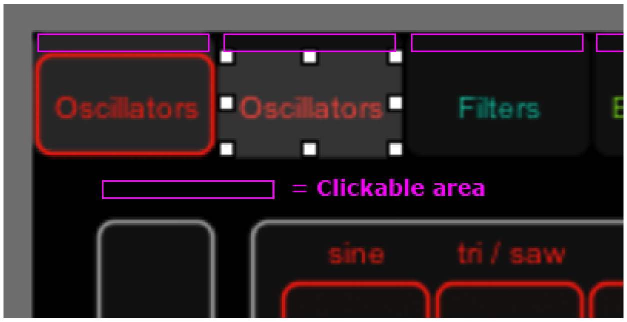
Instead of trying to work within the existing pages, you may find it easier to create a new page within the template. You can then copy and paste UI elements into your new page from the existing pages. When you're satisfied with your new interface, you can make it wholly your own by deleting the original pages.

Changing pages

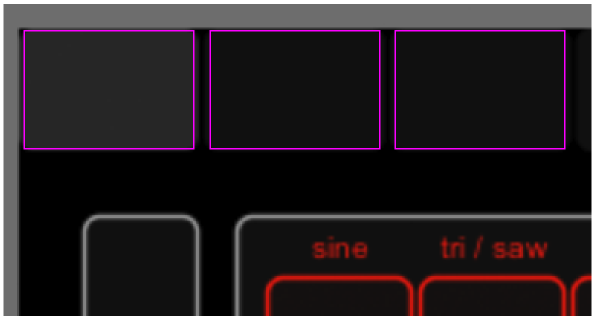
The pages of an interface are accessed in the TouchOSC Editor by clicking the tabs at the top of the interface. You can label the various tabs using the “Label” UI object.

During template editing, when trying to select a tab, however, you may find yourself selecting the label elements, instead of navigating to the page as intended. As the labels have no effect on the functionality of the tab, you can make your life easier by removing them when editing the template.

You can add the labels back in as the final modification made to the template. This will ensure the tabs are labelled when the template is transferred to your iPad. When running on the iPad, the label elements are not 'selected' when you try and interact with the tabs.



*Click-able area **with** tab labels*



*Click-able area **without** tab labels*

With labeled tabs the click-able area available in the editor is tiny. It can be frustrating trying to click inside this when navigating between different pages of the interface. Whilst editing, delete these labels with abandon!

Appendix B: Complete Miniak Patch Editor OSC Protocol

All messages a bi-directional. Incoming messages update the corresponding element. Any changes to elements are output via OSC.

Example message
Set the AnalogDrift for the current voice to 'half' by sending the following OSC message to Miniak Patch Editor:

- /voice/AnalogDrift 50

Message range
The protocol below describes the range of excepted values for each message. In the case of the AnalogDrift parameter, minimum and maximum values of 0 and 100 are expected

Note that you can also supply a 'normalised' value for any parameter by prefixing the OSC address with '/normalised' – the value provided will automatically be scaled between the parameters true minimum and maximum, e.g. to set the AnalogDrift parameter to half, send the message:

- /normalised/voice/AnalogDrift 0.5

OSC messages

Oscillators

Oscillator number, X = 1 - 3

- /osc/{X}/Waveform 0-2
- /osc/{X}/Waveshape -100-100
- /osc/{X}/Octave -3-3
- /osc/{X}/Transpose -7-7
- /osc/{X}/Pitch -999-999
- /osc/{X}/PWhlRange 0-12
- /osc/{X}/Level 0-100
- /osc/{X}/Balance -50-50

Other Noise Sources

- /pre/RingModLevel 0-100
- /pre/NoiseLevel 0-100
- /pre/RingModBalance -50-50
- /pre/NoiseBalance -50-50

External Audio

- /ext/Level 0-100
- /ext/Balance -100-100

Filters

- /filter/SeriesLevel 0-100
- /filter/1/Type 0-20
- /filter/1/Frequency 0-1023
- /filter/1/Resonance 0-100
- /filter/1/Keytrack -100-200
- /filter/1/EnvAmount -100-100
- /filter/1/Sign 0-1
- /filter/1/Level 0-100
- /filter/1/Pan -100-100

- /filter/2/Offset 0-20
- /filter/2/Type 0-20
- /filter/2/Frequency/Absolute 0-1023
- /filter/2/Frequency/Relative -400-400
- /filter/2/Resonance 0-100
- /filter/2/Keytrack -100-200
- /filter/2/EnvAmount -100-100
- /filter/2/Level 0-100
- /filter/2/Pan -100-100

- /filter/PreFilterLevel 0-100
- /filter/PreFilterPan -100-100
- /filter/PreFilterSource 0-6

Nb. Certain filters only support a max frequency of 920

Amplitude Envelope

- /env/1/AttackTime 0-255
- /env/1/AttackSlope 0-2
- /env/1/DecayTime 0-255
- /env/1/DecaySlope 0-2
- /env/1/SustainTime 0-256
- /env/1/SustainLevel 0-100
- /env/1/ReleaseTime 0-256
- /env/1/ReleaseSlope 0-2
- /env/1/VelToEnv 0-100
- /env/1/Reset 0-1
- /env/1/Freerun 0-1
- /env/1/Loop 0-3
- /env/1/SustainPedal 0-1

Filter/Pitch Envelopes

Envelope number, X = 2 - 3

- /env/{X}/AttackTime 0-255
- /env/{X}/AttackSlope 0-2
- /env/{X}/DecayTime 0-255
- /env/{X}/DecaySlope 0-2
- /env/{X}/SustainTime 0-256
- /env/{X}/SustainLevel -100-100
- /env/{X}/ReleaseTime 0-256
- /env/{X}/ReleaseSlope 0-2
- /env/{X}/VelToEnv 0-100
- /env/{X}/Reset 0-1
- /env/{X}/Freerun 0-1
- /env/{X}/Loop 0-3
- /env/{X}/SustainPedal 0-1

Synthesiser Voice

- /voice/Polyphony 0-1
- /voice/Unison 0-3
- /voice/UnisonDetune 0-100
- /voice/Portamento 0-2
- /voice/PortaType 0-3
- /voice/PortaTime 0-127
- /voice/PitchWheel 0-1
- /voice/AnalogDrift 0-100
- /voice/OSCSync 0-4
- /voice/FMAmount 0-1000
- /voice/FMType 0-5

Output

- /out/DriveType 0-6
- /out/DriveLevel 0-100
- /out/ProgramLevel 0-100
- /out/FxMix -50-50
- /out/FxBalance -50-50

Effects

- /fx/Type/1 0-6
- /fx/1/A -100-100
- /fx/1/B 0-100
- /fx/1/C 0-127
- /fx/1/D -100-100
- /fx/1/E 0-3
- /fx/1/F 0-5
- /fx/1/G 0-100
- /fx/1/H 0-24

- /fx/Type/2 0-6
- /fx/2/A -100-680
- /fx/2/B 0-100
- /fx/2/C 0-127
- /fx/2/D -100-100
- /fx/2/E 0-24

LFOs

LFO number, X = 1 - 2

- /lfo/{X}/TempoSync 0-1
- /lfo/{X}/Rate/Absolute 0-1023
- /lfo/{X}/Rate/Synced 0-24
- /lfo/{X}/Reset 0-6
- /lfo/{X}/M1WheelToLfo 0-100

Sample & Hold

- /s-h/TempoSync 0-1
- /s-h/Rate/Absolute 0-1023
- /s-h/Rate/Synced 0-24
- /s-h/Reset 0-6
- /s-h/Input 0-35
- /s-h/Smoothing 1-100

Tracking

Tracking point, X = -16 - 16

- /tracking/Input 0-35
- /tracking/NumPoints 0-1
- /tracking/{X} -100-100

Modulation Matrix

Modulator number, X = 1 - 12

- /mod/{X}/Source 0-37
- /mod/{X}/Destination 0-77
- /mod/{X}/Level -1000-1000
- /mod/{X}/Offset -1000-1000

Controller

- /controller/X 0-219
- /controller/Y 0-219
- /controller/Z 0-219