Woodpressor

WIMS

Woodman's Immaculate Maple Syrup Studio

support@woodmansimmaculatemaplesyrupstudio.be

Algorithms and code : Wim Cliquet (aka Woodman)
UI design and graphics : Marnic Reekmans
Testing : Roel De Bruyne, Sander Cliquet
Presets : Win Conway

1.What

The Woodpressor is a fairly standard compressor with familiar controls like "Threshold", "Attack", "Release", "Ratio" and "Makeup" but also has some extra features not found commonly on other compressors :

• Adaptive Threshold : threshold is automatically adopting to the current signal which can be very useful on high dynamic vocals with very loud and very quiet parts.

• Non-Linear Release : release curve can be changed in the Advanced Settings ; very useful on drums

• Auto Gain : makes the compressed signal sound at the same level as the original which allows to really judge on the compression (and not be mislead by the known "louder sounds better")

• Max Makeup : automatically sets the makeup gain calculated from the Threshold to a maximum level (which can be set in the Advanced Settings)

• Supports multi-channel (surround, 3D) sum mode (other compressors can often only be used in multi-mono mode when the number of channels > stereo)
In this case the weight of each channel in the sum can be set (allows to disable LFE driving the compression, have more weight from the Center (voice) channel, etc)

• Has a Tube saturation control and a separate more aggressive distortion control.

• Includes a convenient filter which can be applied on the analysed signal.

1.1 New

v1.1
- Has User Presets load/save
- Has Side chain send/receive

v1.2
- UI can be zoomed in small host windows (iOS)

v1.3
- Users presets can be stored in iCloud Drive (when enabled)

v1.4
- User presets can now be selected via Midi Program Changes.

v1.5
- improved Tube distortion, added Class A and Class AB controls

v1.6
- MacOS plugins now do resize by scaling (smaller windows)

v1.7
- Added Brick-wall Limiter
- Added Clip Led
- Added Max dB Out value

v1.8
- Factory presets can now be copied to User presets
- Added more presets

v1.9
- Added Midi side chain : received note-on velocities are used to determine the compressor gain reduction. This allows for example to have a midi track behave like a drum side chain track to create pumping effects.

v1.10 (iOS)
- Added AUv3 multi-bus (side chain) support

v1.11
- Optimised for the M1 arm64 cpu in the new Macs (MacOS)
- Fixed a potential bug resulting in invalid output values in the non-linear release section causing subsequent plugins to crash/fail.

v1.12 (MacOS)
Improved immersive sound support (Weights panel) :
- Channel names are now displayed.
- Added Input Format selection (7.1 or 5.1.2 ; 5.1.4 or 7.1.2)
- Added 4-led input signal VU meter for each channel.
- Holding Shift Key when dragging a slider, updates all channel weights.
- Max number of channels on VST is now 14 (Auro 13.1)

v1.14
- Added linked groups : linked Woodpressors inserted on different tracks will calculate the Gain Reduction on a weighted sum of all the channels of all the tracks.
- Also the main compressor parameters can be linked.

v1.15
- Added Mac AAX plugin support for the new Protools bus widths (7.1.4, 7.1.6, 9.1.6)

1.2 Bug fixes

v1.1
- UI (rotaries) are now showing automation values
- Filter "Listen" when side chain is enabled now listens to the side chain audio

v1.2
- side chain now works for Cubasis2 (iOS)

v1.3
- AUv3 now works when running in Auria (Pro) (iOS)
- when zoomed in, panning now also works when Advanced panel is open. (iOS)

v1.4
- fixed a bug in reading/showing iCloud user presets when more than 1 Woodpressor plugin was used in the host app (DAW).

v1.6
- fixed gain calculation when Mix was set to negative amount and Tube distort was on.

v1.7
- fixed small dependency from Tube Class A amount on Distort amount
- BPFilter Listen does not add the Makeup gain any longer (could cause clipping)

v1.8
- fixed User preset subfolders (iOS)
- fixed automation recording (MacOS)

2. Main window

Individual controls are explained below.

Resizing the plugin window (smaller only) scales the UI and saves the new size in the plugin state.

The metering shows gain reductions up to 20 dB but the maximum GR since playing was started is also shown (is reset when playing is stopped and started again)

When the plugin is inserted on a track with more than 2 channels, an extra button ("W" from weights) in the header bar will become visible which allows to set channel weights in an extra panel similar to the Advanced panel.

You have pressed the Question-mark button already as you are reading this manual.

2.1 Presets

Factory/User presets can normally be set via the DAW specific popup / controls. Those presets will be saved in a specific format and location dependant on the DAW.

User presets can also be set via Woodpressor's own popup in the header bar.

The preset.json files are saved in your iCloud Drive (when enabled) or else in the app's local folder: ~/Library/Application Support/Woodpressor/userPresets (~ is the user's home dir).
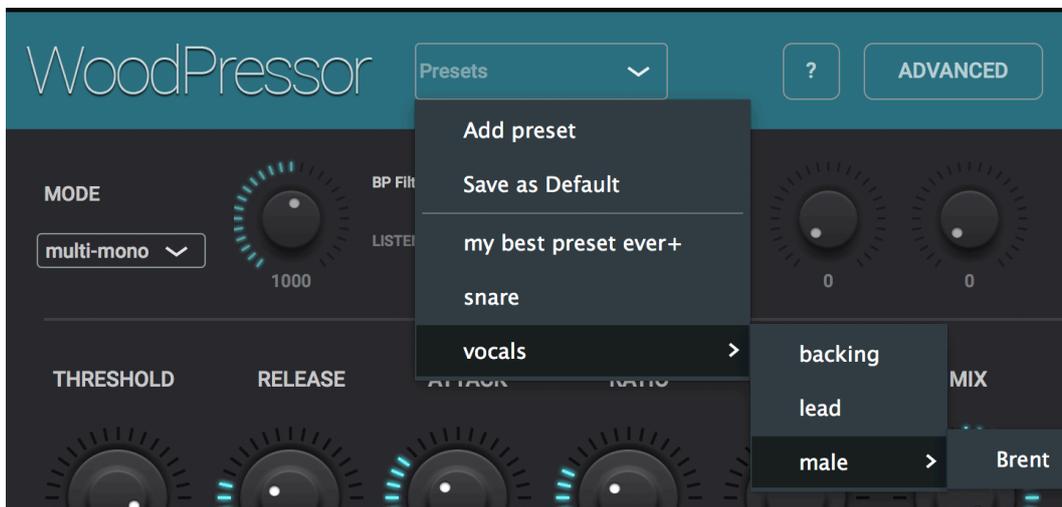
When saved to iCloud Drive the presets are automatically available (and synced) to all devices and all DAW's running Woodpressor and are obviously backed-up as well.

When iCloud Drive is enabled, previously local saved presets will also be shown in the preset popup with ".local" appended to their name. And when for some reason a new preset still has to be written to the local folder, this can be done by appending ".local" to the name typed in the text edit box.

When a preset is selected and any parameter is changed afterwards, the name of the preset will be marked with a * at the beginning and end to indicate the settings are now different than those from the saved preset. When this preset is re-saved the * 's will disappear again.

Groups (drums, Vocals, …) can be created by typing the group name followed by a ":" (colon character) followed by the preset name. Multi level groups are possible as well on OSX.

The current selected preset can be removed by selecting "remove" from the popup however NO "Are you sure" warnings/popups are given. (I am sure you are sure).

The User presets can also be selected by a Midi Program Change. In the Advanced panel the Midi channel and Program Change mode can be set :
- mode "Index" : program change number is the index in the preset list
- mode "Name" : add ".midiXY" to the preset name to select it with program change XY. (e.g. the preset with name "snaredrum.midi3" will be selected by program change 3.

3. Advanced Panel and Channel Weights Panel

The Advanced panel can be made visible by pressing the "Advanced" button.

The Channel Weights Panel is shown when pressing the "W" button. This button is only visible when the plugin is inserted on a track with more than 2 channels or when group linking is on.

4. Controls

4.1 Threshold

0 dB to -50 dB

Signals above this value will be compressed.

4.1.1 Adaptive Threshold button

When switched on the Threshold value will adopt itself to the current signal.
The value will start from the Threshold rotary value and go down for more quiet parts to a minimum value of -60 dB.
This can be very useful for high dynamic vocal tracks containing both very load parts and very quiet parts.
This button also enables 3 more controls in the Advanced settings panel :

4.1.2 Adaptive amount (Advanced panel)

0 … 1 : 0 is effectively the same as switching off adaptive T, 1 yields max adaptation.

4.1.3 Adaptive gain (Advanced panel)

0 … 1

In a conventional compressor the quiet parts (far below the Threshold) will increase in loudness due to the makeup gain (set to compensate the compression in the louder parts). However with adaptive threshold also the quiet parts will be compressed and hence won't increase (as much) in loudness anymore. Therefore the adaptive threshold will apply a relative gain to the quiet parts to compensate for the compression. The relative gain can be controlled with this rotary.

4.1.4 Adaptive Lookahead (Advanced panel)

0 ms … 1000 ms

Defines the time window (future and past) used to determine the average loudness in that region. When setting this too short (on a vocal) , it can lead to over compression as each small pauze or breathing will be seen as a quiet part …

4.2 Attack

0 ms … 50 ms (milliseconds)

Compression will reach it's max gain reduction after this time.
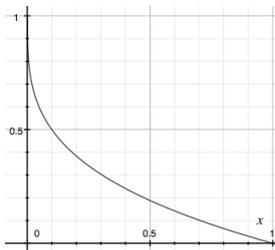
4.3 Release

5 ms … 4000 ms

When the signal drops below the threshold again, the gain reduction will start decreasing and reaches zero (no more compression) after this time.
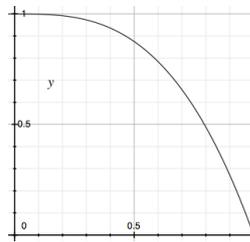
4.3.1 Non-Linear (Release) button

When the Non-Linear Release button is on, the shape of the release curve can be set in the Advanced panel with the "Non-Lin Release" rotary

4.3.2 "Non-Lin Release" rotary (Advanced panel)

-100 … 100 (zero is same as linear release)

   -100 : drops fast

   +100 : holds

4.4 Ratio

1 … 10

As usual defines the slope of the compression curve.

4.5 Makeup

-30 dB … +30 dB

Normally used to compensate for the loudness level drop caused by the compression.

Disabled when "Max Makeup" button is on.

When "Auto Gain" is on this control is still active to allow an offset in gain relative from the calculated Auto Gain.

4.5.1 "Max Makeup" button

When on Woodpressor will calculate the necessary gain to map 0 dB input to a specified max level (set in the Advanced panel) dependent on the Threshold value and the Ratio.

4.5.2 "Auto Gain" button

Woodpressor will automatically calculate the makeup gain dependent on the original signal and the compressed signal to make them sound about the same in loudness.

This allows to listen and judge on the compression only without being mislead by a makeup gain which would make the compressed signal sound louder and hence "better".

4.5.3 "Auto Gain" rotary (Advanced panel)

-100% … +100%

allows to define a relative bias on the calculated auto gain level : below zero the gain will be lower, above zero it will be higher. Apposed to the Makeup Gain rotary which is an absolute gain, this one is relative : if the calculated auto gain would be zero (signal not compressed) the resulting gain remains zero.

4.5.4 "Max Makeup" rotary (Advanced panel)

-30 dB … 0 dB

Sets the dB output level to which 0dB input will be mapped

4.6 Limiter buttons

When applying a positive gain makeup (usually the case) and having peaks in the original signal not far below 0dB, it is very likely to get an output signal above 0dB, especially with an attack time > zero.

4.6.1 Makeup Limiter button

With this button on, Woodpressor will increase the GR dependent on those peaks to make sure the output does not exceed 0dB. As this is done before the Tube distortion section it is still possible to get values just above 0dB.
As this limiter is working in the compressor section it uses the same release setting as the compressor.

4.6.2 Brick-wall Limiter button

This limiter is at the end of all processing and will ensure no values will exceed -0.1 dB.
The limiter will try to preserve the waveform as much as possible and has a separate release control (in Advanced Settings). It also has a fixed small lookahead of 100 samples.
When this limiter is active (meaning limiting values over -0.1 dB) a yellow led will light up.

4.6.3 Clip led

When the brick-wall limiter is off, this (red) light will go on when a sample value exceeds 0dB. The led will be reset when the transport is restarted or when the area around the clip led is touched.

4.6.4 Maximum dB Output Value

Just as the Clip led this will be reset when the transport is restarted or when the area around the clip led is touched.

4.7 Mix

-100% … +100%

Allows parallel compression

Value set to zero has the same effect as bypassing (except that the compressor is still working and showing the metering)

Negative values are subtracting the compressed signal from the original : can be useful to remove the background spill from a snare drum or other instrument.

Double clicking on the Mix rotary will jump alternatively to 100% and 0%.

4.8 BP Filter On

Applies a filter on the analysed signal. The gain reduction is still applied on the complete signal.

The filter type and Q factor (for band-pass and notch filter) can be set in the Advanced panel.

4.8.1 BP Filter Frequency

50 Hz … 20 kHz

Sets the center (band-pass or notch) or cutoff (high-pass or low-pass) frequency.

4.8.2 "Listen" button

When on the plugin output is just the filtered original signal.
No makeup gain is applied to avoid clipping (as of v1.7)

4.8.3 "Q" rotary (Advanced panel)

0.1 … 10

4.8.4 Filter Type (Advanced panel)

Type can be set to band-pass, low-pass, high-pass and notch

4.9 Tube-Distort On

Enables both a tube-like saturation effect rotary and a more heavy distortion rotary.

4.9.1 Tube Class A rotary : 0 … 100%

Adds mainly even harmonics of the original signal, which are perceived as pleasing.

4.9.1 Tube Class AB rotary : 0 … 100%

Adds only odd harmonics of the original signal

4.9.3 Distortion amount rotary : 0 … 100%

Adds more higher harmonics sounding more "metallic"

4.10 Side Chain

Can be selected in the Compressor Mode popup.
Each DAW will also have some specific way to select the side chain audio which will be routed to Woodpressor.

The GR (gain reduction) is calculated from the side chain audio and not from the track audio on which Woodpressor is inserted.

4.11 Midi Side Chain

Can be selected in the Compressor Mode popup.

When Woodpressor receives midi note-on commands the velocity of the note (0 .. 127) is used to calculate the gain reduction. A value of 127 would correspond with a 0 dB (loud !) signal.

This allows to control the compression from a midi track without having to use the (audio) send/receive side chain mechanism.
This way no send plugin is needed and normally there should be less latency (as in the audio case additional plugins inserted before Woodpressor could add to the latency).

4.12 Midi Receive from DAW button (Advanced)

Normally Woodpressor listens for external midi commands (sent by devices or apps outside the DAW).

However if you want to receive midi commands generated by or inside the DAW (internal keyboard, midi track on which Woodpressor is inserted, …), set this to on. You still may have to do additional midi routing in the DAW.

4.13 Group Linking

Several Woodpressors inserted on different tracks can be linked into a group.

All Woodpressors in the group will have the same GR (Gain Reduction) calculated by a weighted sum off all the channels of all the tracks.
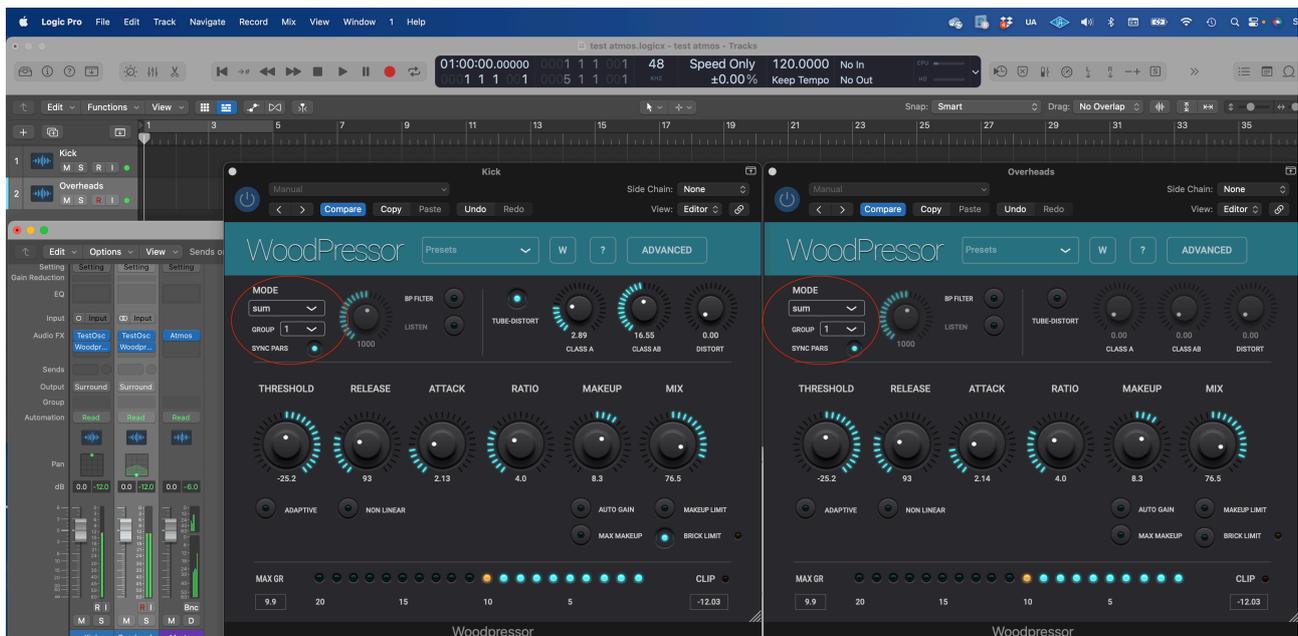
The linking effect is similar as first routing all the tracks to a bus and then inserting a bus compressor. But when it is not possible or convenient to route all those tracks to 1 bus, linking can be used.

This is especially the case in surround and 3D mixing when tracks are set to be an object (Auro-3D, Dolby Atmos).
The object audio with panning data is sent to an external renderer or to a dedicated renderer plugin or is exported to file (ADM, …).
Of course each object track can be compressed on it's own but a group of objects (drum tracks, ..) can not be compressed by a bus compressor.
When inserting a Woodpressor on all of the object tracks and linking them in the same group, "bus" compression becomes possible.

Linking is different from side-chaining : in side-chain compression the GR is ONLY calculated by the side chain audio and not by the track audio on which the compressor is inserted.

However linking can be set to have the same effect as side chain compression where the side chain audio can come from more than 1 track :
- set the weight on the compression track to zero (no GR from the track audio itself).
- switch off "Parameter Linking"
- set the Threshold on the side chains to zero (no compression on the side chains)

4.13.1 Linking Group dropdown

Sets the linking group.
Set to Off to disable linking.

4.13.2 Sync Parameters checkbox

When linking is on, this will also link or sync the main compressor parameters.
Changing the Threshold on 1 Woodpressor will set the same value on the others in the same group.

Parameters linked :
- Threshold
- Attack
- Release
- Ratio
- MakeUp Gain
- Mix

4.13.3 Weights

When linking is on the weights button and panel will become active even when inserted on a mono or stereo track.
The weight factors are multiplied with the track audio before it is added to the total sum of all the channels on all the tracks.

5. Running on iOS (iPad, iPhone)

The Woodpressor app supports IAA (Inter App Audio) which allows audio host apps (supporting IAA) to use the Woodpressor.
Without a host app the use case for the Woodpressor standalone app could be to use your iOS device as a "hardware compressor" sending and receiving audio via the mic/headphone connector or via some audio docking station.

The Woodpressor app also contains the AUv3 audio unit plugin. Host apps using the AUv3 plugin will present the Woodpressor UI in their own window which usually can be resized. The Woodpressor UI will scale to follow the resizing.

The number of channels will normally be limited to stereo.

5.1 Presets

Presets can be loaded/saved via Woodpressor's preset popup.
The preset.json files are saved in iCloud Drive when enabled or else in the app's local Documents folder.
When saved to iCloud Drive the presets are automatically available (and synced) to all devices running Woodpressor and are obviously backed-up as well.

When iCloud Drive is enabled, previously local saved presets will also be shown in the preset popup with ".local" appended to their name. And when for some reason a new preset still has to be written to the local Documents, this can be done by appending ".local" to the name typed in the text edit box.

To Enable iCloud Drive you should be signed-in in iCloud (normally the case when you also want Contacts, Calendars, Mail, etc to be synced to iCloud) and the iCloud Drive switch should be on. Under iCloud Drive all apps using iCloud Drive are listed and obviously Woodpressor should be on as well (which it is by default).

Preset groups are possible by typing the group name followed by a ":" (colon character) followed by the preset name.

Presets for the AUv3 plugin can also be provided by the host app or can be saved/loaded via Woodpressor's popup as described above.

The User presets can also be selected by a Midi Program Change. In the Advanced panel the Midi channel and Program Change mode can be set :

- mode "Index" : program change number is the index in the preset list
- mode "Name" : add ".midiXY" to the preset name to select it with program change XY. (e.g. the preset with name "snaredrum.midi3" will be selected by program change 3. This method is preferred as the selection will not change when presets are added or removed.
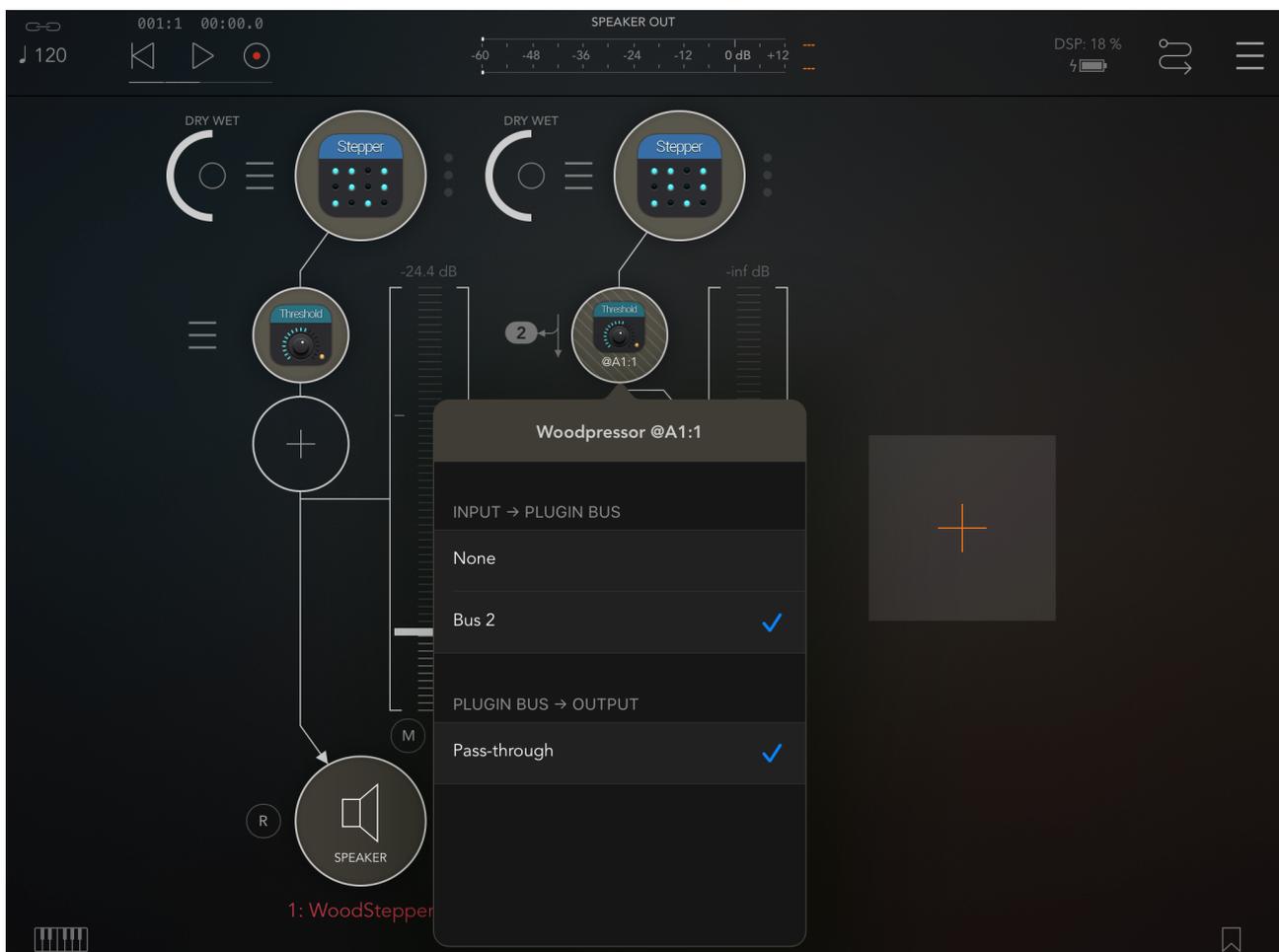
5.2 DAW Side Chain

Most DAW's allow to send audio from another track to the side chain input of Woodpressor on another track.
In Woodpressor you have to set the Mode to "side" to use this side audio to calculate the compression amount.

In v1.10 this is now also supported for AUv3 on iOS which only recently implemented this side chain (or more general multi-bus) functionality.

In AUM on iOS for example it looks like below : the second track is sending its audio to the side chain input of Woodpressor on the first track. Note that the Woodpressor seen in the second track is actually the same as the one in the first track.
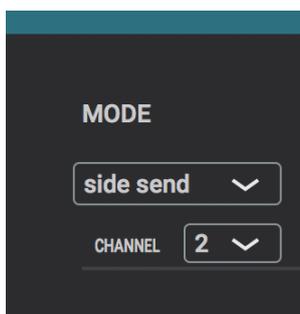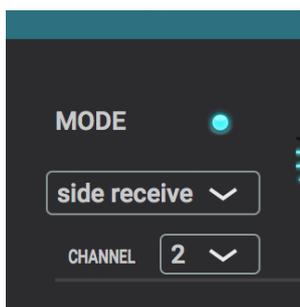
5.3 Woodpressor Side Chain

On iOS not many hosts are currently (before Woodpressor v1.10) supporting a side chain mechanism.
Therefore Woodpressor AUv3 has its own side send/receive mechanism.

On the track you want to use as side chain (Bass drum for example), insert a Woodpressor and select compressor mode "side chain send". An extra popup will become visible in which you can select a side channel number (1..8).

On the track you want to compress (Bass guitar for example) you insert a Woodpressor in which the mode is set to "side chain receive". Obviously select the same side channel number here.

The audio from the side chain track (Base drum …) will now be sent to the receiving Woodpressor (Bass guitar) and be used as compression analysis signal which determines the Gain Reduction used on that track's audio.

The receiving Woodpressor will show an extra led just above the mode popup.
When not lid, no audio from the side chain is received :
- check if the send Woodpressor has the same channel
- check if there is audio on that track (hosts will often not call the plugin's processing when no audio is present).

When blue, audio is received and completely in sync.
When orange, audio is received but different track latencies cause the side chain signal to be shifted in time compared to the receiving track audio.
When this happens and is giving bad results, try to get the same latency on both tracks by having the same number and types of plugins on each track as well have the 2 Woodpressors at the same relative plugin position (last plugin for example).

Different receiving Woodpressors can receive from the same send channel.

In side chain receive mode, the side chain audio can be heard by switching on the BP Filter and switch on the "Listen" button.

5.4 UI Zoom

Especially when used as AUv3 plugin in a host app, it can happen that the window in which the Woodpressor plugin is presented is too small (and sometimes can't be resized)

Pressing the "Woodpressor" logo (top left) will zoom in 3 steps to a maximum size.
Next press will cycle back to the un-zoomed state.

When zoomed the UI can be panned by dragging in any spot which is not a control.

6. Running on MacOS

The standalone Woodpressor app downloaded from the Mac App Store can be used as such but mainly acts as the license for all Woodpressor plugins (AAX , AU , VST, VST3).

This means there is no limit to the number of Macs on which you can run Woodpressor (as long as the standalone app is in the Applications folder).

Due to Mac App sandbox security, you have to download the plugin(s) installer from my website.
The installer will copy the plugins to the appropriate plugin folder :
- for AAX : /Library/Application Support/Avid/Audio/Plug-Ins
- for AU   : /Library/Audio/Plug-Ins/Components
- for VST : /Library/Audio/Plug-Ins/VST
- for VST3 : /Library/Audio/Plug-Ins/VST3

When the standalone app is not present, the plugins will run in trial mode : every 60s the audio will be silent for 2s.