empress effects

user manual

Thank you for purchasing the Empress Buffer+ Stereo. This pedal was designed to be the complete I/O interface for your pedalboard while maintaining the highest fidelity of your guitar signal.

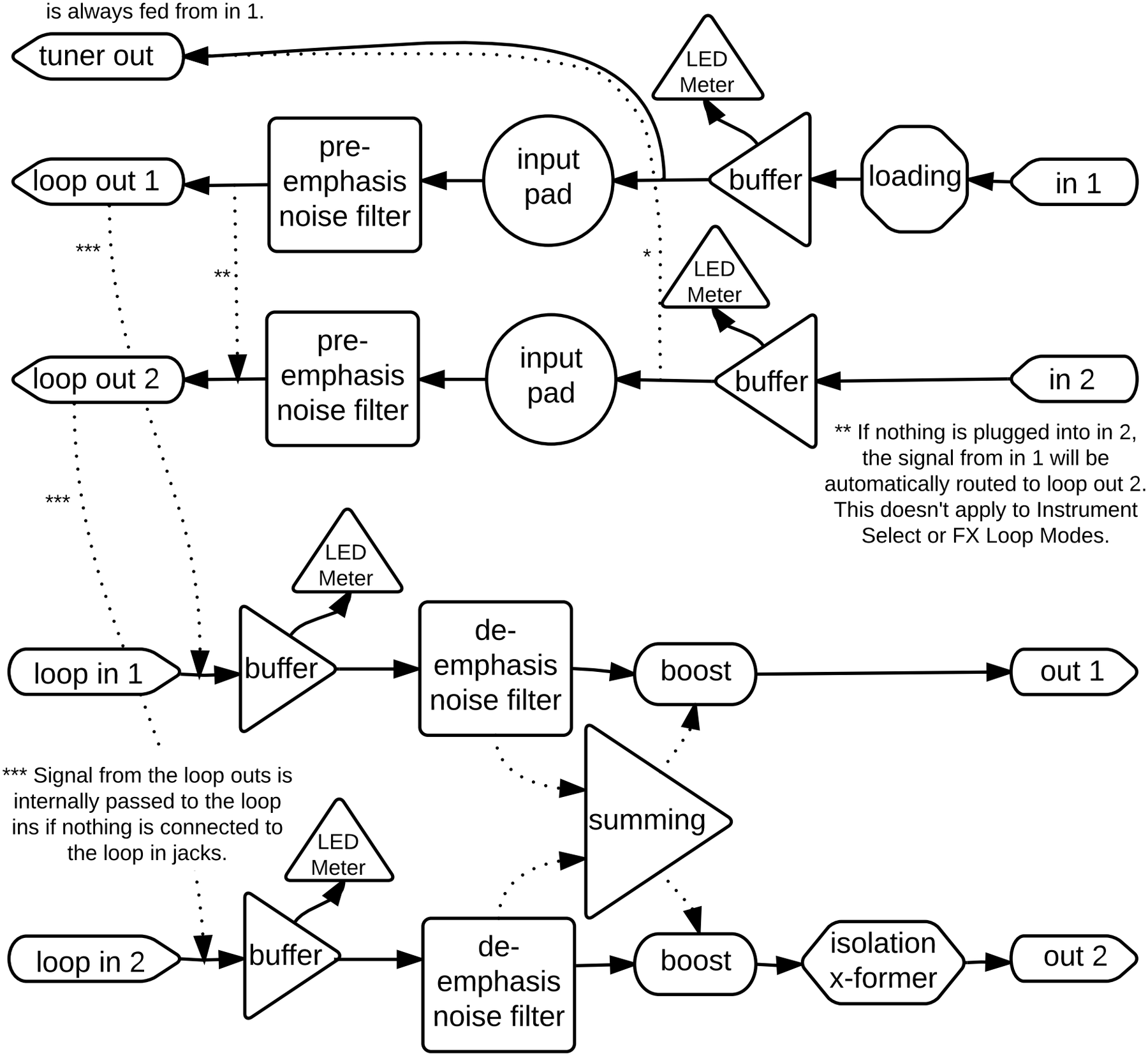
We've kept all the features of our Buffer+, such as the foot-switchable boost, input pad, noise filters, and variable input loading, and have added a ton of additional features such as input meters and clip level indicators, AB/AY switching, external switch control, and of course, full stereo in/out connectivity.

On top of all that, configurable signal routing ensures that the Buffer+ Stereo will handle just about any rig you can throw at it. So before you plug in, read The Initial Setup guide to ensure your Buffer+ Stereo is ready to rock!

- Cody Gilchrist, lead designer.

* in instrument select modes, the tuner out will be fed from the selected input, otherwise it is always fed from in 1.

Buffer+ Stereo Simplified Circuit



** If nothing is plugged into in 2, the signal from in 1 will be automatically routed to loop out 2. This doesn't apply to Instrument Select or FX Loop Modes.

*** Signal from the loop outs is internally passed to the loop ins if nothing is connected to the loop in jacks.

Controls

input pads: pads the input by either 6dB or 12dB. This can be useful for padding a very hot signal from an fx loop or active instrument. It can also be useful for matching levels from different instruments (ie. passive and active pickups, or single coil and humbucking guitars).

stomp function: sets the function of the stomp switch. In the boost position, the stomp switch will toggle the boost circuit on and off. In AB position the stomp switch will toggle the active output between **out 1** and **out 2**. In the AY position the stomp switch will toggle the active output between **out 1** and both **out 1** and **out 2**.

**note: some modes do not incorporate all of the different stomp functions. In those cases the toggle switch will not have any effect on the stomp function.*

boost: sets the amount of boost to be applied when the boost is engaged. Ranges from 0 to +30dB.

input LEDs: illuminate green when signal is present. If the signal gets too hot and clips the input, a red clip indicator LED will illuminate and hold for 2 seconds.

stompswitch: function assigned by the stomp function toggle swith. Can engage/disengage the boost, switch between A and Y, or A and B. Hold for 1 second to mute out 1 and out 2 for silent tuning.

at a Glance

noise filter: helps eliminate certain types of noise from your signal path, especially white noise and hiss generated from digital pedals. It will reduce this noise on any pedal that is inside its dedicated loop.
For stereo noise reduction, make sure to set both the noise filter switches to the same setting. This is also true for any operating mode in which the signal is being sent out of **loop out 1** but returning into **loop in 2**, such as the FX Loop Modes 11 and 12.

Note that when using the noise filter with distortion and overdrive pedals in the loop, you might notice a change in the high frequency response. If this is the case, it can usually be corrected by some gentle EQ, or you may opt to put your drive pedals before the buffer+ stereo.

input 1 loading: varies the load seen by your guitar pickups at **in 1**. Turning the knob fully clockwise increases the load and allows the full frequency range of your guitar to pass through. As you turn the knob counter-clockwise you'll begin loading down your guitar, changing the response of the pickups and rolling off some high frequencies.

out 2 polarity: inverts the polarity of the signal from **out 2**. This can be useful if you have an effect that inverts polarity, or if you have stereo amps widely spaced.

output LEDs: indicate which outputs are active.

Initial Setup / Startup Configuration

The Startup Configuration is where you'll set the Buffer+ Stereo's operating mode, choosing from 12 available modes. Here, you can also configure an external momentary switch to either activate the boost circuit (on/off) or to instantly mute the output for silent tuning.

To enter Startup Configuration, connect power to the pedal while holding down the stomp switch. The blue boost LED will flash quickly to let you know you've entered Startup Configuration. The current mode will now be displayed via the signal indicator LEDs. Pressing the stomp switch will scroll up to the next available mode. As you scroll through the available modes, the signal indicator LEDs will light sequentially to show you which mode will be selected upon exiting Startup Configuration.

For example, Mode 1 starts with the green **in 1** LED lit. When you press the stomp switch the **in 1** LED will change to orange, and you are now able to select Mode 2. Press it again, the **in 1** LED will

change to red, and you are now able to select Mode 3. Press it again and the **in 2** LED will be lit green, and you are now able to select Mode 4 etc. This pattern continues until you reach Mode 12 and then starts over again at Mode 1.

To configure an external switch (momentary - normally open), use the **stomp function** toggle switch. Set it to the left position (Boost) to use an external switch as a boost. Set it to the right position (AY) to use an external switch as an instant silent tuning switch. The middle position (AB) is for no external switch. The red "tuner on" LED will flash each time you change the switch position to show you it has registered a change.

To save your settings and exit Startup Configuration, hold down the stomp switch for 2 seconds. The blue boost LED will flash quickly, followed by the corresponding mode LED to acknowledge your selection. The Buffer+ Stereo will now enter your selected mode every time it starts up, unless you change it again by going back into the Startup Configuration.

Mode 1 - Un-summed Loop Ins

This is the standard operating mode for a stereo setup. In this mode, **loop in 1** and **loop in 2** are sent to **out 1** and **out 2** respectively.

A wet/dry rig can be created by using a mono effects chain returning to **loop in 1** and leaving **in 2** and **loop in 2** disconnected. this will route **in 1** directly to **out 2**. Amp 1 will be wet, amp 2 will be dry.

Mode 2 - Summed Loop Ins

This mode uses summing to take stereo effects and bring them back to a mono output. Perhaps the most useful case for this mode would be for someone who sometimes runs a stereo rig, but also plays gigs with a mono rig. You could leave your pedalboard connected in a stereo configuration and just switch over to mode 2 for gigs with only 1 amp.

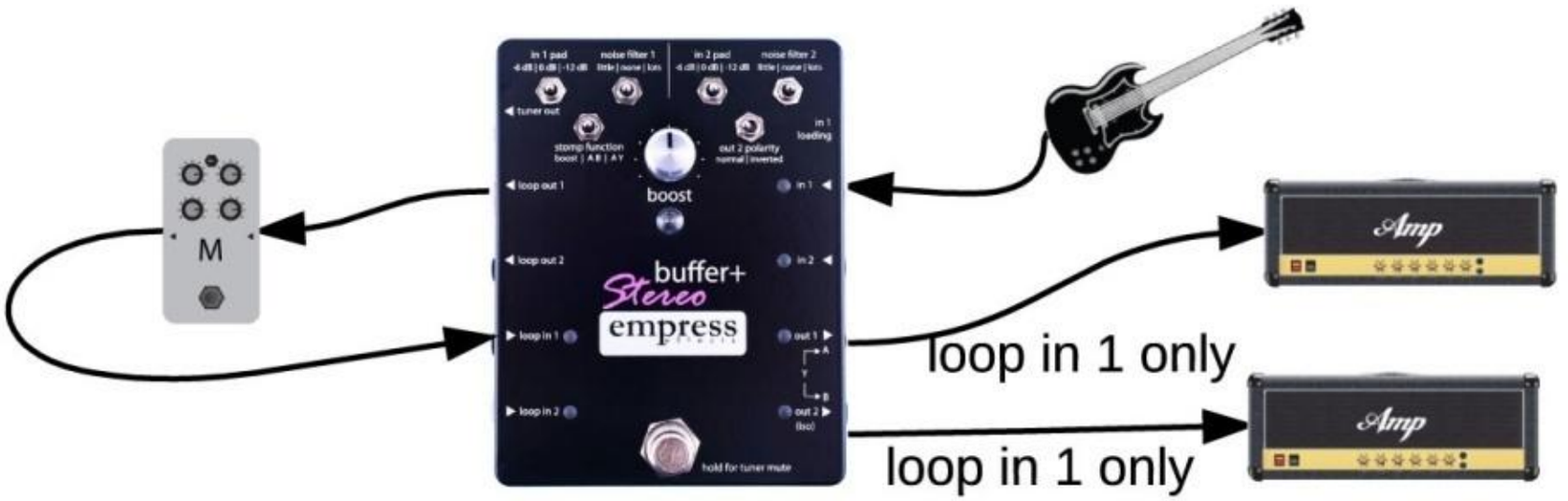
In this mode, **loop in 1** and **loop in 2** are sent to both **out 1** and **out 2**. The signals are summed internally.

Mode 3 - Loop In 1 Only

This mode is designed for a mono effects chain feeding 2 amps.

In this mode, **loop in 1** is sent to both **out 1** and **out 2**. **loop in 2** cannot be used.

This mode is for using a mono in/mono out effects chain and sending the signal to two amps. This mode is necessary so that the dry signal, which would normally show up at **loop in 2** when nothing is connected to it, does not get to the output.



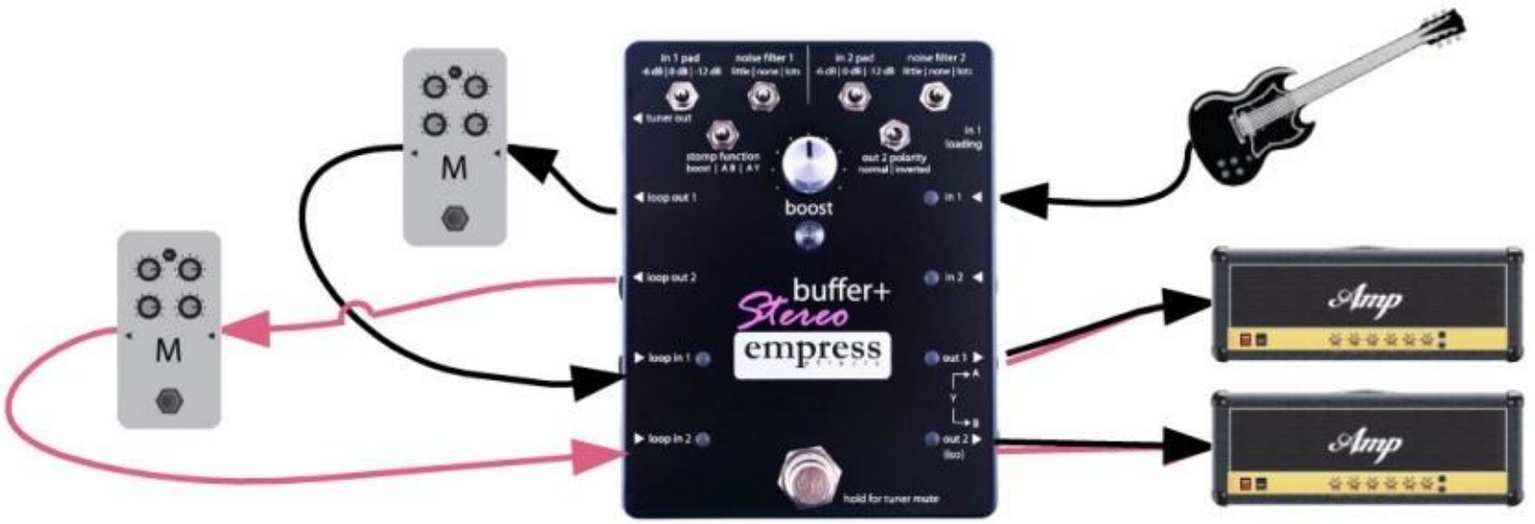
Mode 4 - Unsummed/Summed Loop Ins Combination

In this mode, when the **stomp function** toggle switch is set to AY, in the A state, **loop in 1** and **loop in 2** are summed and sent to **out 1**. In the Y state, **loop in 1** and **loop in 2** are sent to **out 1** and **out 2** respectively, and are therefore not summed.

If the **stomp function** toggle is set to boost, **loop in 1** and **loop in 2** are summed and sent to both **out 1** and **out 2**, just as they are in Mode 2. If the **stomp function** toggle is set to AB, **loop in 1** and **loop in 2** are sent to **out 1** and **out 2** respectively, just as they are in Mode 1.

Mode 5 - Loop Select

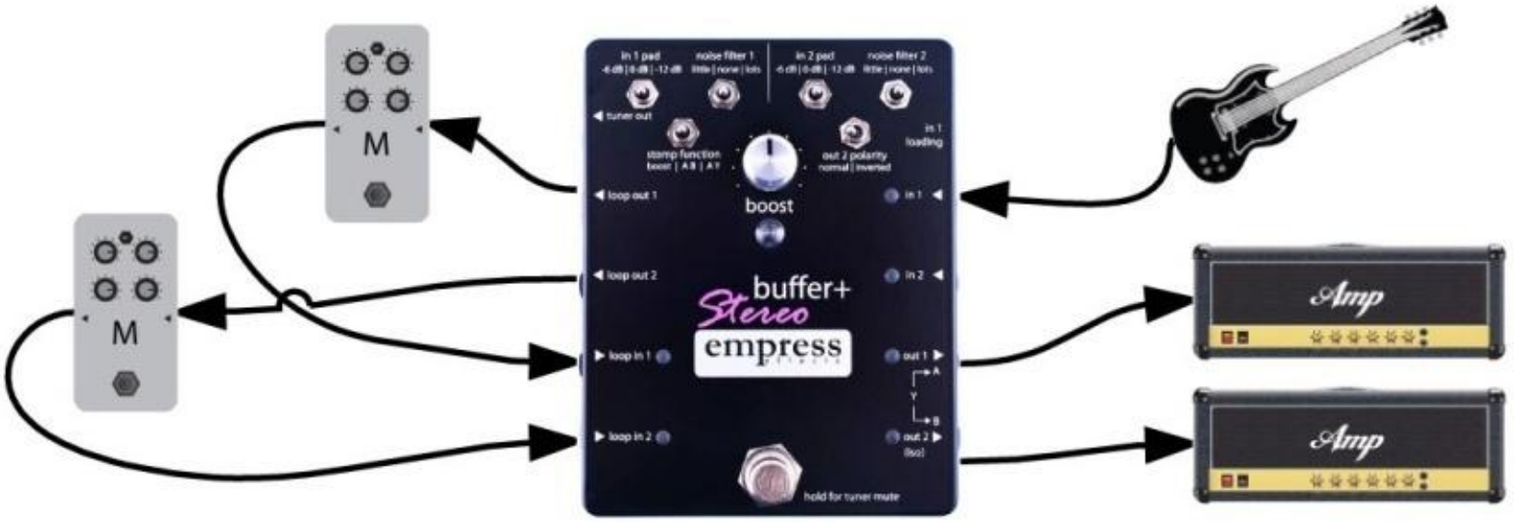
This mode allows you to select between **loop in 1** and **loop in 2**. When the **stomp function** toggle switch is set to AB, in the A state, **loop in 1** is sent to both **out 1** and **out 2**. In the B state, **loop in 2** is sent to both **out 1** and **out 2**. When the **stomp function** toggle switch is set to AY, in the A state, **loop in 1** is sent to both **out 1** and **out 2**. In the Y state, **loop in 1** and **loop in 2** are summed and sent to both **out 1** and **out 2**. If the **stomp function** toggle is set to boost, **loop in 1** and **loop in 2** are summed and sent to both **out 1** and **out 2**.



Mode 6 - Loop Summing Select

This mode allows you to switch between two states. In the first state, **loop in 1** and **loop in 2** are not summed, and are sent to **out 1** and **out 2** respectively. In the second state, **loop in 1** and **loop in 2** are summed and sent to both **out 1** and **out 2**.

- The **stomp function** toggle switch is not used.
- The white output indicator LEDs are used to indicate which state you're in. When they are lit, the loop ins are summed.



Mode 7 - Instrument Select, mono return to both outputs

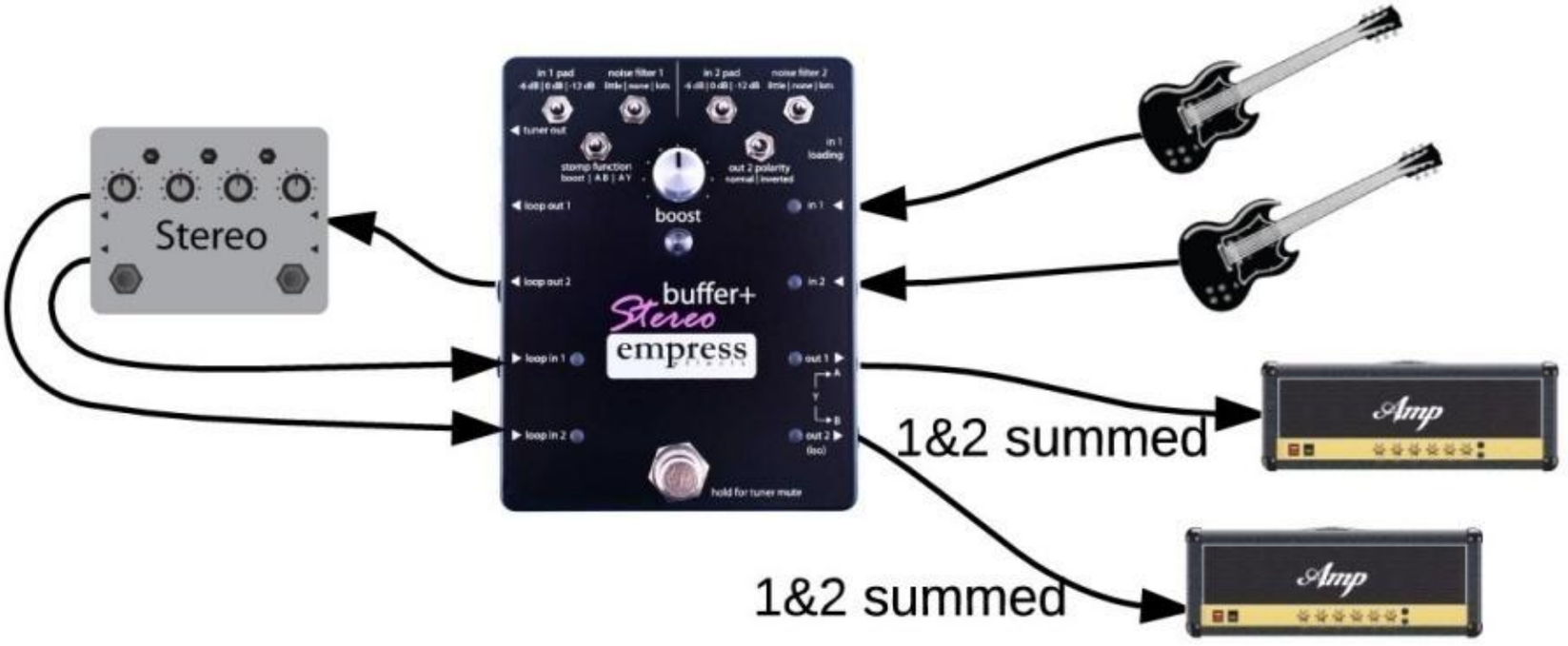
This mode allows you to have two separate instruments plugged into **in 1** and **in 2**, and use the stomp switch to switch between them. In this mode, **loop in 2** is sent to both outputs.

- The **stomp function** toggle switch is not used.
- A red LED will illuminate on either **in 1** or **in 2** which represents the inactive input.

Mode 8 - Instrument Select, stereo return and summed loops

This mode allows you to have two separate instruments plugged into **in 1** and **in 2**, and use the stomp switch to switch between them. In this mode, **loop in 1** and **loop in 2** are summed and sent to both outputs.

- The **stomp function** toggle switch is not used.
- A red LED will illuminate on either **in 1** or **in 2** which represents the inactive input.



Mode 9 - Instrument Select, stereo return and un-summed Loops

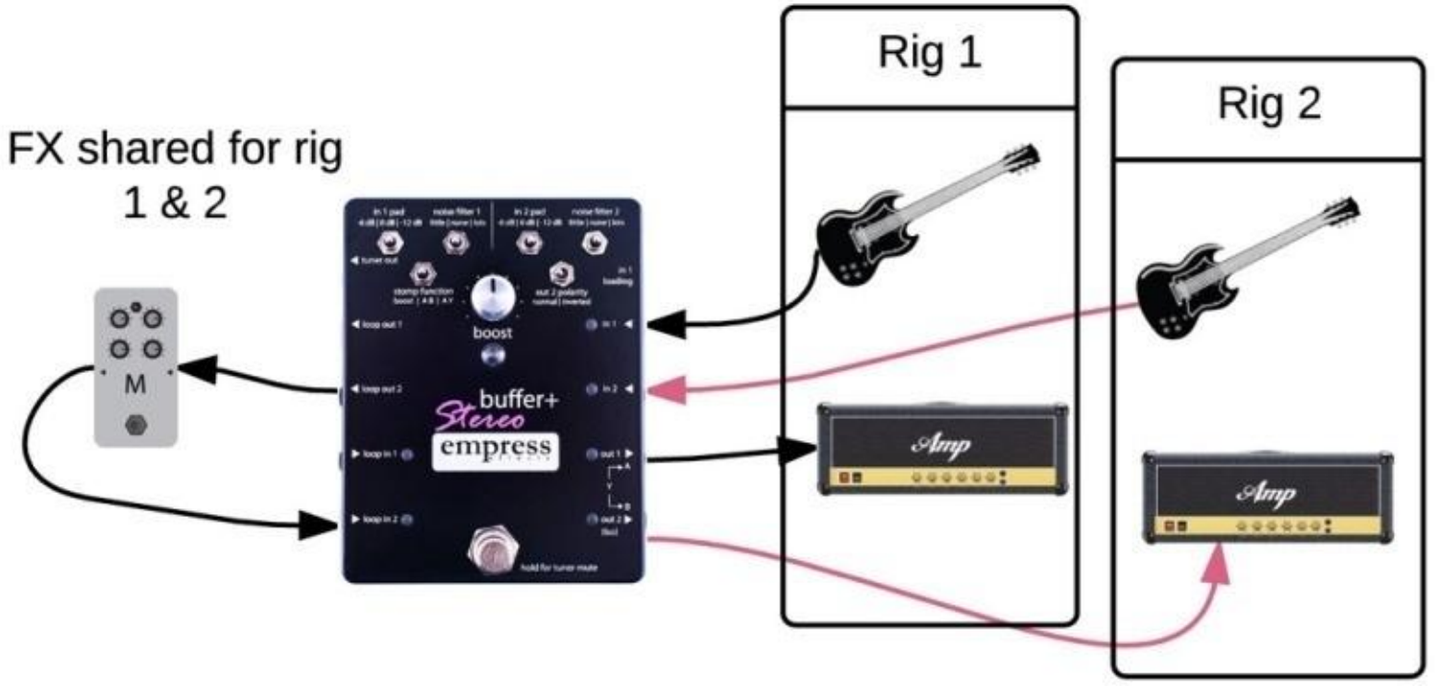
This mode allows you to have two separate instruments plugged into **in 1** and **in 2**, and use the stomp switch to toggle between them. In this mode, **loop in 1** and **loop in 2** are sent to **out 1** and **out 2** respectively, and are not summed.

- The **stomp function** toggle switch is not used.
- A red LED will illuminate on either **in 1** or **in 2** which represents the inactive input.

Mode 10 - Instrument Select - separate rigs, shared effects

This mode allows you to connect two separate rigs (for example, an electric guitar and amplifier to **in 1** and **out 1** respectively, and an acoustic guitar and PA system to **in 2** and **out 2** respectively) and a single mono effects chain, and use the stomp switch to select which rig is active. The effects chain will be used by whichever rig is active.

- The **stomp function** toggle switch is not used.
- A red LED will illuminate on either **in 1** or **in 2** which represents the inactive input.



Modes 11 & 12 - FX Loop

Mode 11 (boost at amp input)

This mode allows you to buffer an effects chain in front of your amp, as well as in the amp's fx loop.

When the **stomp function** toggle is set to **boost**, the fx loop is always engaged and the boost can be toggled on/off with the stomp switch. The boost is applied to the amp's input.

When the **stomp function** toggle is set to **AY**, in the A state, the amp fx loop is bypassed. In the Y state, the amp fx loop is engaged.

notes:

- In order to avoid ground loops, the effects connected to **loop out 1** must return to **loop in 2** and be sent from **out 2** into the amplifiers input. The amp's fx send will then go into **in 2** and out of **loop out 2** to the fx loop effects chain. From there you'll come back in **loop in 1** and then send **out 1** to the amplifiers fx return.

- The **AB** position of the **stomp function** toggle switch is not used.

- Both **noise filters** must be set the same for effective noise filtering.

Mode 12 (boost at amp's FX loop return)

This mode functions exactly the same as Mode 11, with the only difference being that the boost is applied to the amplifiers fx return as opposed to the preamp input.

Silent Tuning: The **tuner out** can be used for silent tuning by holding the stomp switch down for about one second. This will mute the signal being sent from **out 1** and **out 2**. The boost LED will illuminate red to indicate that you are in silent tuning mode. Press the stomp switch again to exit silent tuning mode. The Buffer+ Stereo will return to whichever state it was in prior to entering silent tuning mode.

You may also activate silent tuning instantly via an external switch.

External Switch: The Buffer+ Stereo can be configured to use an external switch to either engage the boost circuit on/off, or to instantly enter silent tuning without having to hold the onboard stomp switch. The switch can be configured at startup in Startup Configuration, and must be a momentary (non-latching) normally open switch. See *Startup Configuration* for a full explanation on how to set it up.

Legal Stuff

FCC Compliance

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules

Powering the Buffer+ Stereo

Go to www.empresseffects.com/power for a full list of compatible power supplies.

Please Note: The Empress Buffer+ Stereo requires at least 150mA of current to function properly. Any power supply rated at 9V DC, supplying negative tip polarity () and at least 150mA of current should work.

Troubleshooting

I'm not getting any sound out of either out 1 or out 2

- Make sure silent tuning isn't engaged (see *Silent Tuning*)

- Try only plugging in: guitar → in 1 & out 1 → amp

If you get signal to your amp, it's likely a pedal or patch cord in the loop that isn't passing signal. You can also watch the **loop in** LEDs to see if they are receiving signal.

The sound is dull and lacking in treble

- Double check that the **in 1 loading** trim pot isn't turned all the way down. This would load down your guitar quite heavily and roll off a lot of high end.

- This could also be the case if you're using an overdrive or distortion pedal in the loop, and have the **noise filter** turned on. In this situation, you may want to put your gain pedals before the Buffer+ Stereo, or just use a bit of eq in the loop to bring back the treble.

Boost won't turn on in AB or AY mode

- The Buffer+ Stereo is probably configured to accept an external boost switch. If you are not using an external switch, see *Startup Configuration* to disable the external switch.

The noise filter is making my signal noisier and/or brighter!

- Some modes require both **noise filter** switches to be set the same. Try setting both **noise filter** switches to the same setting and see if that resolves it.

Specifications

Input Impedance 1:	10kΩ - 1MΩ
Input Impedance 2:	1MΩ
Output Impedance 1:	47Ω
Output Impedance 2:	600Ω
Frequency Response (-3dB) :	20Hz - 38kHz
THD:	0.02%
Noise:	-104dB
Input Voltage:	9VDC 
Required Current:	150mA
Power Input Connector:	2.1mm Barrel Connector
Height (enclosure only):	1.5”
Height (including controls):	2”
Length:	4.5”
Width:	3.5”
Weight:	12.5oz