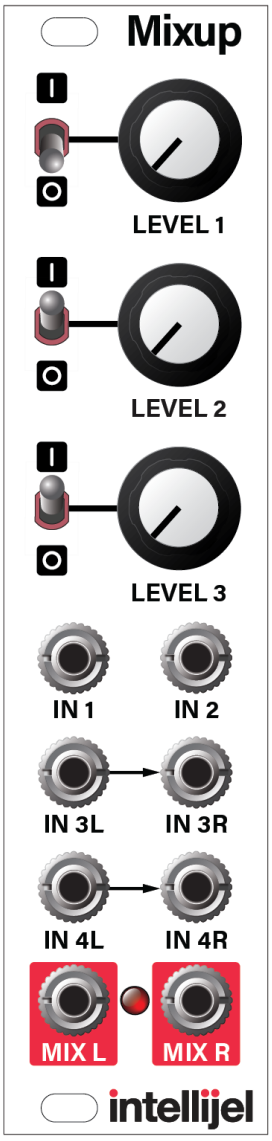
intellijel

Mixup

Chainable Stereo Audio Utility Mixer



Manual (English)
Revision: 2023.01.19

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COMPLIANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Intellijel Designs, Inc. could void the user's authority to operate the equipment.

Any digital equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This device meets the requirements of the following standards and directives:

EMC: 2014/30/EU
EN55032:2015 ; EN55103-2:2009 (EN55024) ; EN61000-3-2 ; EN61000-3-3

Low Voltage: 2014/35/EU
EN 60065:2002+A1:2006+A11:2008+A2:2010+A12:2011

RoHS2: 2011/65/EU

WEEE: 2012/19/EU

INSTALLATION

Intellijel Eurorack modules are designed to be used with a Eurorack-compatible case and power supply. We recommend you use Intellijel cases and power supplies.

Before installing a new module in your case, you must ensure your power supply has a free power header and sufficient available capacity to power the module:

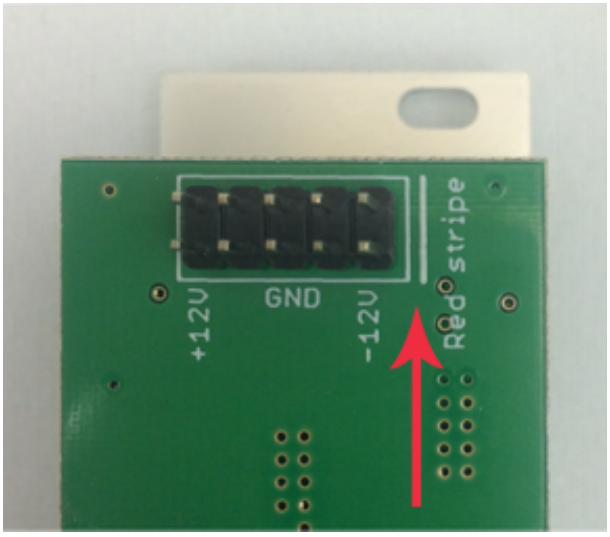
- Sum up the specified +12V current draw for all modules, including the new one. Do the same for the -12 V and +5V current draw. The current draw will be specified in the manufacturer's technical specifications for each module.
- Compare each of the sums to specifications for your case's power supply.
- Only proceed with installation if none of the values exceeds the power supply's specifications. Otherwise you must remove modules to free up capacity or upgrade your power supply.

You will also need to ensure your case has enough free space (hp) to fit the new module. To prevent screws or other debris from falling into the case and shorting any electrical contacts, do not leave gaps between adjacent modules, and cover all unused areas with blank panels. Similarly, do not use open frames or any other enclosure that exposes the backside of any module or the power distribution board.

You can use a tool like ModularGrid to assist in your planning. Failure to adequately power your modules may result in damage to your modules or power supply. If you are unsure, please contact us before proceeding.

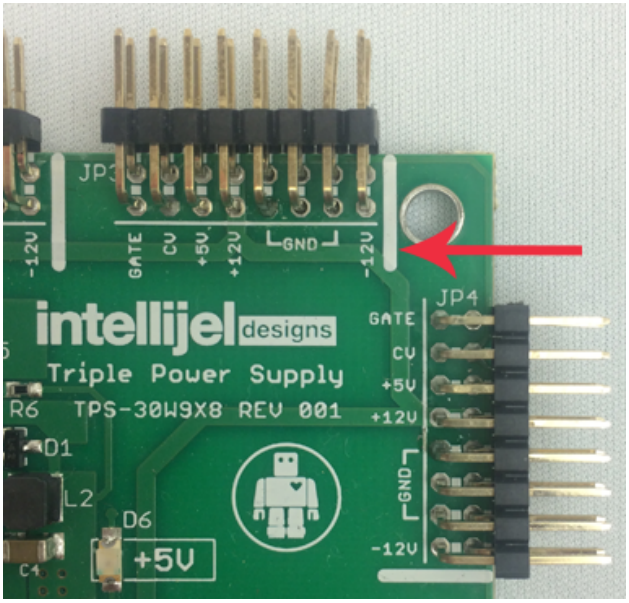
Installing Your Module

When installing or removing a module from your case always turn off the power to the case and disconnect the power cable. Failure to do so may result in serious injury or equipment damage.



Ensure the 10-pin connector on the power cable is connected correctly to the module before proceeding. The red stripe on the cable must line up with the -12V pins on the module's power connector. The pins are indicated with the label -12V, a white stripe next to the connector, the words "red stripe", or some combination of those indicators. Sometimes the connectors are shrouded, ensuring the cable can only be oriented in one direction.

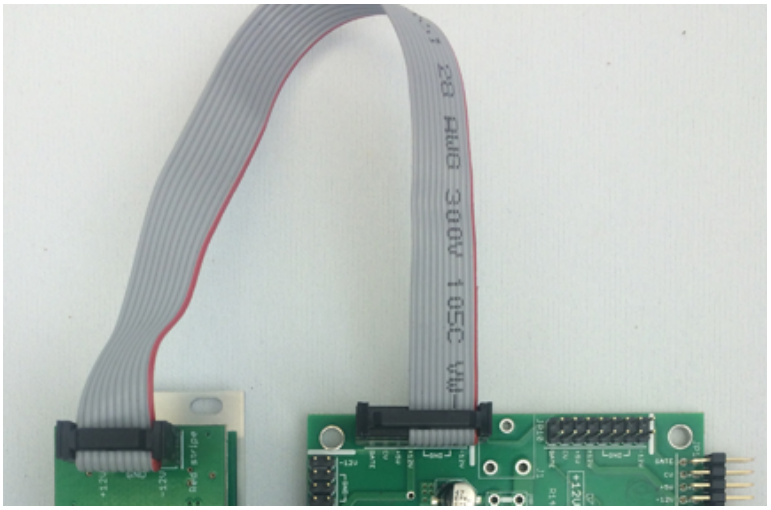
Most modules will come with the cable already connected but it is good to double check the orientation. Be aware that some modules may have headers that serve other purposes so ensure the cable is connected to the right one.



The other end of the cable, with a 16-pin connector, connects to the power bus board of your Eurorack case. Ensure the red stripe on the cable lines up with the -12V pins on the bus board. On Intellijel power supplies the pins are labelled with the label "-12V" and a thick white stripe. Sometimes the connectors are shrouded, ensuring the cable can only be oriented in one direction.

If you are using another manufacturer's power supply, check their documentation for instructions.

Once connected, the cabling between the module and power supply should resemble the picture below:



Before reconnecting power and turning on your modular system, double check that the ribbon cable is fully seated on both ends and that all the pins are correctly aligned. If the pins are misaligned in any direction or the ribbon is backwards you can cause damage to your module, power supply, or other modules.

After you have confirmed all the connections, you can reconnect the power cable and turn on your modular system. You should immediately check that all your modules have powered on and are functioning correctly. If you notice any anomalies, turn your system off right away and check your cabling again for mistakes.

OVERVIEW

Mixup is a versatile, expandable audio mixer for eurorack format. It has six front panel inputs and two outputs. Inputs 1 and 2 are single-channel mono inputs, each with its own mute switch and level control; Input 3 is a dual-channel stereo input with a shared mute and level control; and input 4 is an auxiliary unity-gain, non-mutable stereo input.

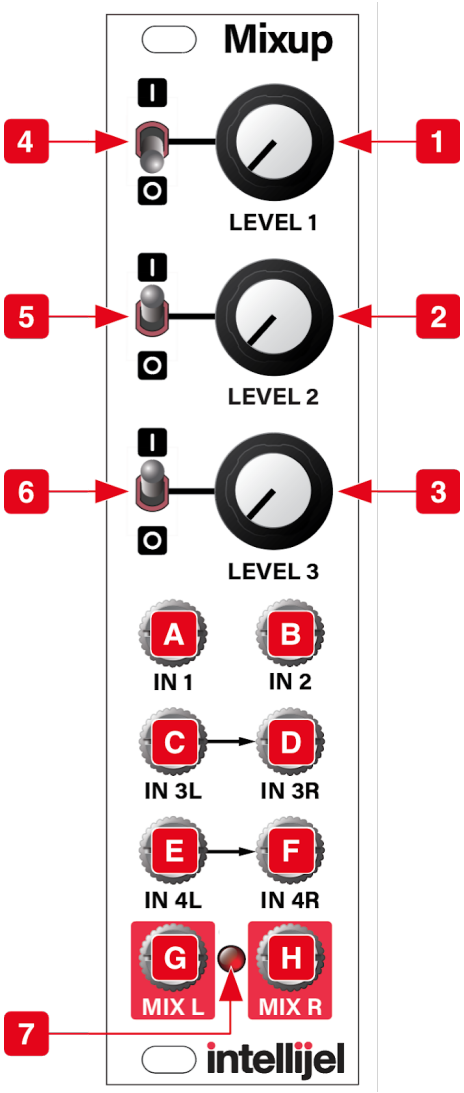
Using the 3-pin Link connectors on the back panel, you can chain multiple Mixups together in series, giving you the ability to mix together even more inputs, or to create sub-mixes for routing around larger systems. You can even use the Intellijel Stereo Mix 1U and XY IO 1U modules in these back-panel chains. Using these same Link cables, you can connect Mixup directly to the ¼" audio jacks on an Intellijel Palette Case, a 7U case with 2nd-generation Audio Jacks Board, an Outs module, or a v2 Headphones 1U.

Because Mixup is designed specifically for audio (and not for CV mixing), it's AC-coupled (which reduces the potential for 'pops' when muting and unmuting audio), and it uses audio-grade, logarithmic attenuators for a smooth, even response across the entire volume range.

FRONT PANEL

The front panel consists of a number of Control elements (switches, knobs, and an LED), plus several input and output jacks. These are described below.

Controls



[1] LEVEL 1 - This attenuator reduces the **IN 1** mono audio level sent to both **MIX** outputs.

[2] LEVEL 2 - This attenuator reduces the **IN 2** mono audio level sent to both **MIX** outputs.

[3] LEVEL 3 - This attenuator reduces the **IN 3L** and **IN 3R** stereo audio level sent to the **MIX** outputs.

[4] MUTE 1 - In the down position, this switch mutes **IN 1** — removing it from the **MIX** outputs.

[5] MUTE 2 - In the down position, this switch mutes **IN 2** — removing it from the **MIX** outputs.

[6] MUTE 3 - In the down position, this switch mutes both **IN 3L** and **IN 3R** — removing them from the **MIX** outputs.

[7] CLIP LED - This LED lights when the sum of all the inputs (from the front panel jacks plus the rear panel serial bus) causes either side of the stereo **MIX** output to clip. Obviously, the more inputs you feed into Mixup (or the more Mixups you feed into each other), the greater the potential to overdrive the Mix bus. So if the CLIP LED lights, consider reducing the various **LEVEL** knobs to maintain a clean, unclipped output.

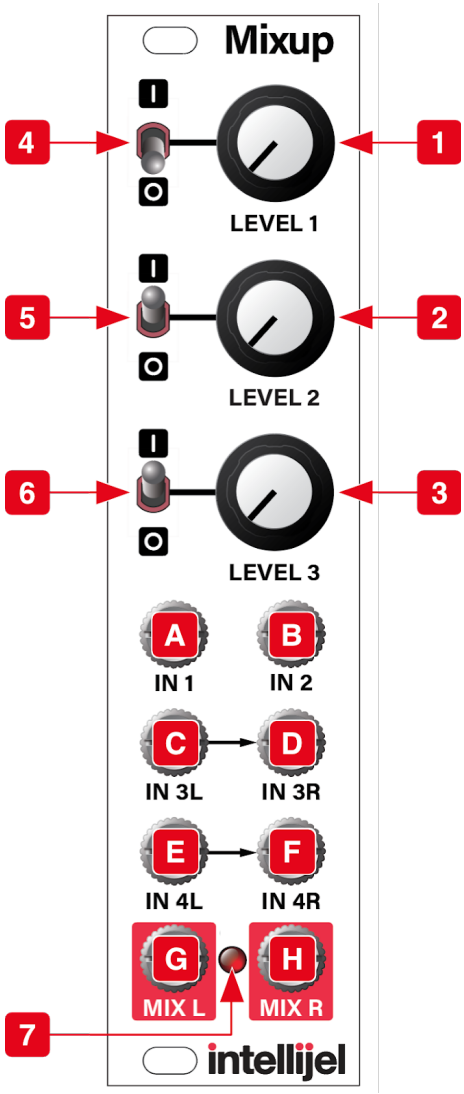
Inputs & Outputs

[A] IN 1 - Mono audio input 1. Mixup routes the audio from **IN 1** to both the **MIX L** and **MIX R** outputs. It can be muted with the **MUTE 1** switch, and its audio level is determined by the **LEVEL 1** knob.

[B] IN 2 - Mono audio input 2. Mixup routes the audio from **IN 2** to both the **MIX L** and **MIX R** outputs. It can be muted with the **MUTE 2** switch, and its audio level is determined by the **LEVEL 2** knob.

[C] IN 3L - This is the left side of stereo audio input 3. Mixup routes the audio from **IN 3L** to the **MIX L** output. It can be muted (along with **IN 3R**) using the **MUTE 3** switch, and its audio level

(along with **IN 3R**) is determined by the **LEVEL 3** knob. If nothing is plugged into **IN 3R**, then **IN 3L** acts like a mono input, and Mixup routes its signal to both the **MIX L** and **MIX R** outputs.



[D] IN 3R - This is the right side of stereo audio input 3. Mixup routes the audio from **IN 3R** to the **MIX R** output. It can be muted (along with **IN 3L**) using the **MUTE 3** switch, and its audio level (also along with **IN 3L**) is determined by the **LEVEL 3** knob. If you wish to use input 3 for mono instead of stereo, simply plug a mono signal into the **IN 3L** jack, and leave the **IN 3R** jack unconnected.

[E] IN 4L - This is the left side of stereo audio input 4. Mixup routes audio directly from **IN 4L** to the **MIX L** output, and has neither a mute switch nor a level knob. If nothing is plugged into **IN 4R**, then **IN 4L** acts like a mono input — appearing at both the **MIX L** and **MIX R** outputs.

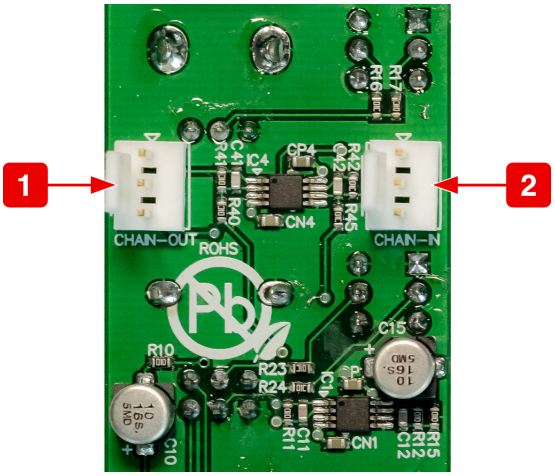
[F] IN 4R - This is the right side of stereo audio input 4. Mixup routes audio directly from **IN 4R** to the **MIX R** output, and has neither a mute switch nor a level knob. If you wish to use input 4 for mono instead of stereo, simply plug a mono signal into the **IN 4L** jack, and leave the **IN 4R** jack unconnected.

[G] MIX L - This is the mixed audio output of all audio on Mixup's left bus. This includes audio from **IN 1**, **IN 2**, **IN 3L**, **IN 4L**, plus all left-channel audio from other Mixups you might connected to its back panel **CHAIN-IN** connector.

[H] MIX R - This is the mixed audio output of all audio on Mixup's right bus. This includes audio from **IN 1**, **IN 2**, **IN 3R** (or **IN 3L** if **IN 3R** is not connected), **IN 4R** (or **IN 4L** if **IN 4R** is not connected), plus all right-channel audio from other Mixups you might connect to its back panel **CHAIN-IN** connector.

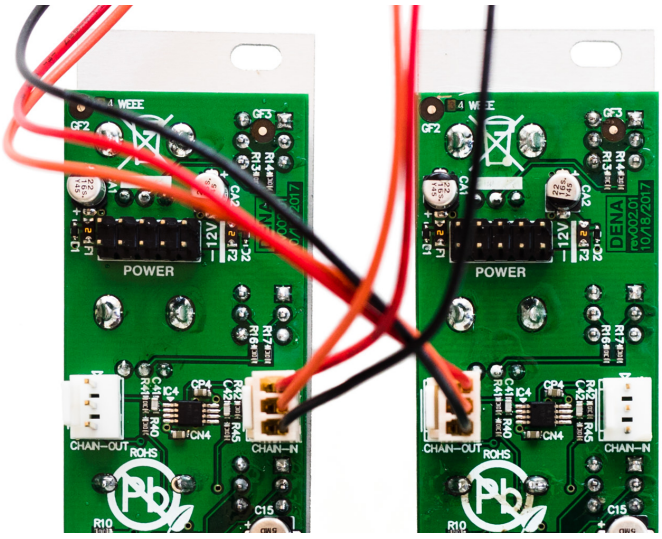
BACK PANEL

Each Mixup module features a pair of rear panel connectors, which enable you to serially connect multiple Mixups to create a larger mixer with more inputs, or to connect Mixup directly to the ¼" jacks on a compatible Intellijel case, an Outs module, or a v2 Headphones 1U.



[1] CHAIN-OUT - This connector taps into the Left and Right **MIX** bus outputs. Use the supplied link cable to connect the **CHAIN-OUT** of one Mixup to the **CHAIN-IN** connector on another compatible module (such as another Mixup; a Stereo Mix 1U; an Outs module; or a v2 Headphones 1U).

[2] CHAIN-IN - This connector adds another pair of inputs directly to the Left and Right **MIX** bus. Use the supplied link cable to connect the **CHAIN-IN** of one Mixup to the **CHAIN-OUT** connector on another compatible module (such as another Mixup or a Stereo Mix 1U). The **CHAIN-IN** connector is essentially another input, much like "Input 4."



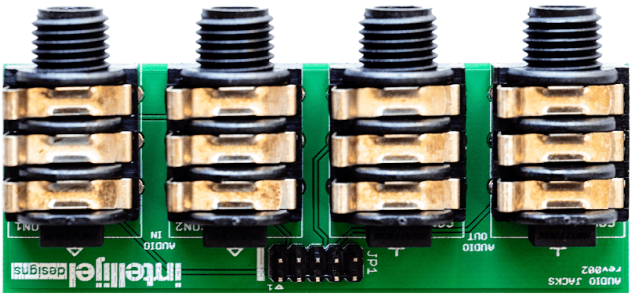
The following sections illustrate a few of the many possible device connections offered by the back panel's pair of 3-pin LINK connectors.

***IMPORTANT**: Never use the 3-wire Link cable to directly connect a **Mixup** module to an Intellijel **Pedal I/O** module. Although both modules use this same cable/connector — they serve different purposes and carry different signals.*

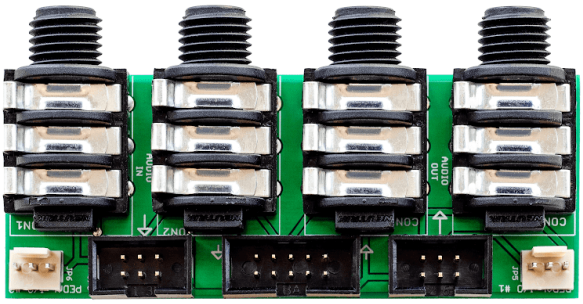
Connecting Mixup Directly to the Audio Jacks on your 7U Case

If you have a 2nd generation Audio Jacks board installed in your Intellijel 7U Performance Case, you can connect one or two Mixups directly to these jacks. This connection method does not work with a 1st generation Audio Jacks board, though you can purchase and easily install a 2nd generation board in your case.

You can distinguish 1st generation boards (included with cases built before early 2019) by the single connector along the bottom of the Audio Jacks board. 2nd generation boards have a large shrouded header flanked by two smaller shrouded headers, flanked by two link connectors.

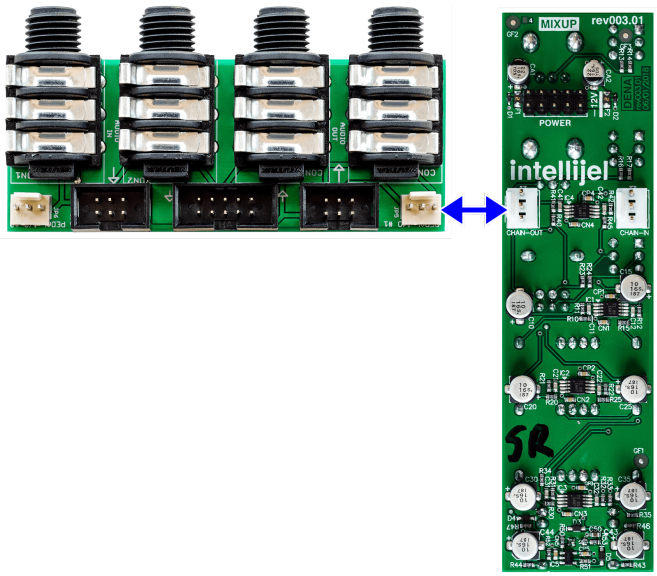


1st GENERATION AUDIO JACKS



2nd GENERATION AUDIO JACKS

To Connect the Mixup to a 2nd Generation Audio Jacks board:

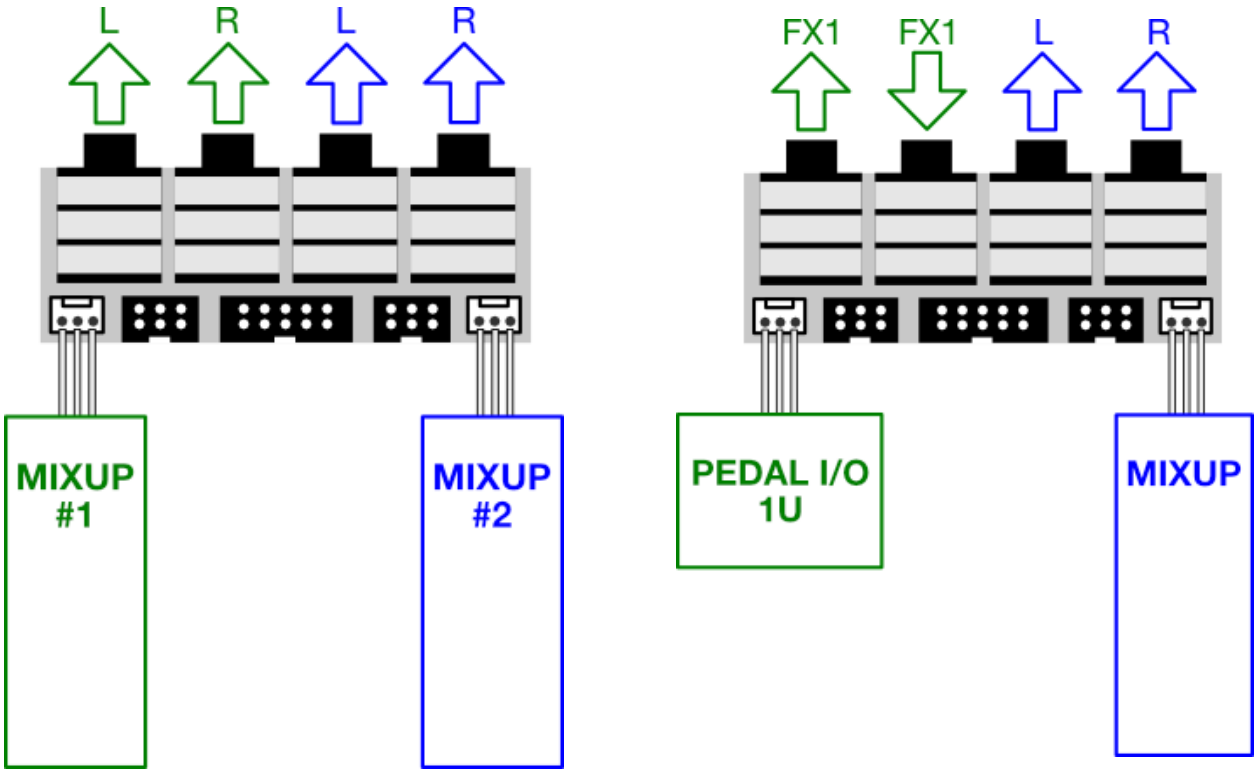


1. Connect one end of the supplied 3-wire Lnk cable into the **CHAIN-OUT** on your Mixup.
2. Connect the other end to either of the two 3-pin Link connectors on the Audio Jacks board. The left connector uses the two left jacks for L/R Stereo outputs, while the right connector uses the two right jacks.

   In this scenario, the audio jacks work as unbalanced outputs.

NOTE: The output is an unattenuated modular signal level. Most pro audio devices are capable of handling these hotter signal levels without issue. If you're connecting your modular synth to consumer-grade audio gear (or if you're running balanced audio cables), Intellijel recommends using something like the Audio I/O module, or the dedicated Stereo Out 1U and Stereo In 1U modules.

You can connect up to two Stereo Mix 1U's to the Audio Jacks Board, or you can even combine one with another 3-pin Link product (such as a Pedal I/O 1U).



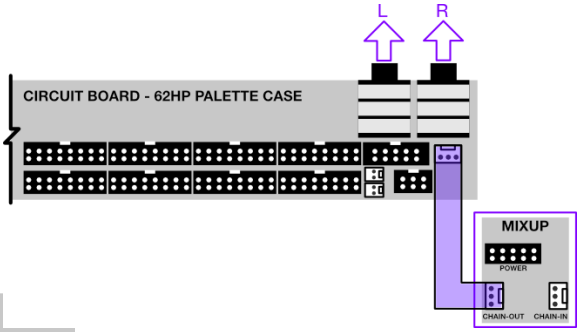
Similarly, you can connect a Mixup's **CHAIN-IN** connector to either of the two 3-pin connectors on the Audio Jacks board and feed external audio from the corresponding jacks into the Mixup bus.

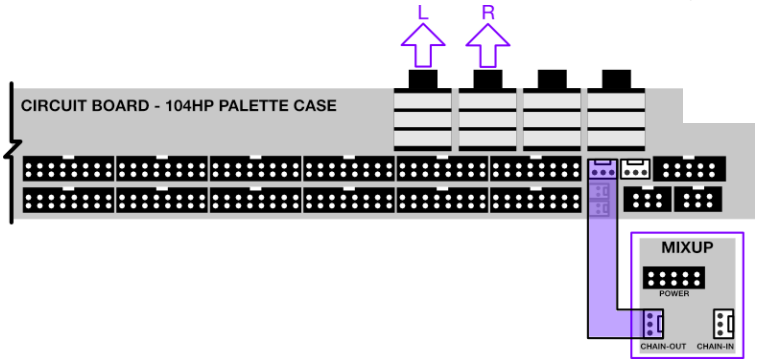
Connecting Mixup Directly to the Audio Jacks on your Palette Case

If you have an Intellijel Palette case, you can connect Mixup directly to its ¼" audio jacks. You can choose whether you want the ¼" jacks to send audio out of Mixup, or into it.

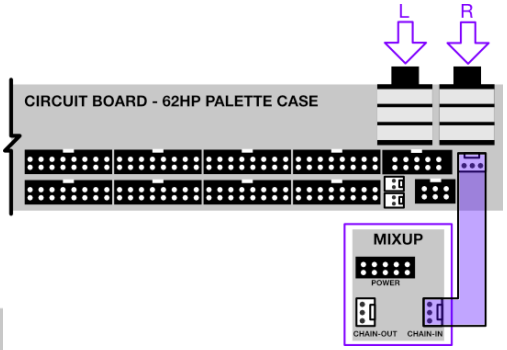
NOTE: In this configuration, audio is an unattenuated modular signal level. Most pro audio devices are capable of handling these hotter signal levels without issue. If you're connecting your modular synth to consumer-grade audio gear (or if you're running balanced audio cables), Intellijel recommends using something like the Audio I/O module, or the dedicated Stereo Out 1U and Stereo In 1U modules.

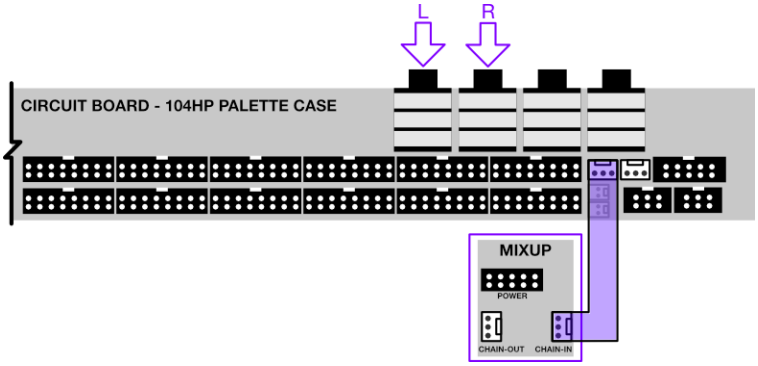
- To send audio directly *from* Mixup to the ¼" audio jacks on the Palette, connect the 3-wire link cable (provided with your Mixup module) between Mixup's **CHAIN-OUT** connector and the single 3-pin Link connector on your Palette 62, or to one of the two Link connectors on the Palette 104 (depending on which pair of jacks you wish to use).





- To send audio directly *into* Mixup from the ¼" audio jacks on the Palette, connect the 3-wire link cable (provided with your Mixup module) between Mixup's **CHAIN-IN** connector and the 3-pin Link connector on your Palette 62, or to one of the two Link connector on the Palette 104 (depending on which pair of jacks you wish to use).





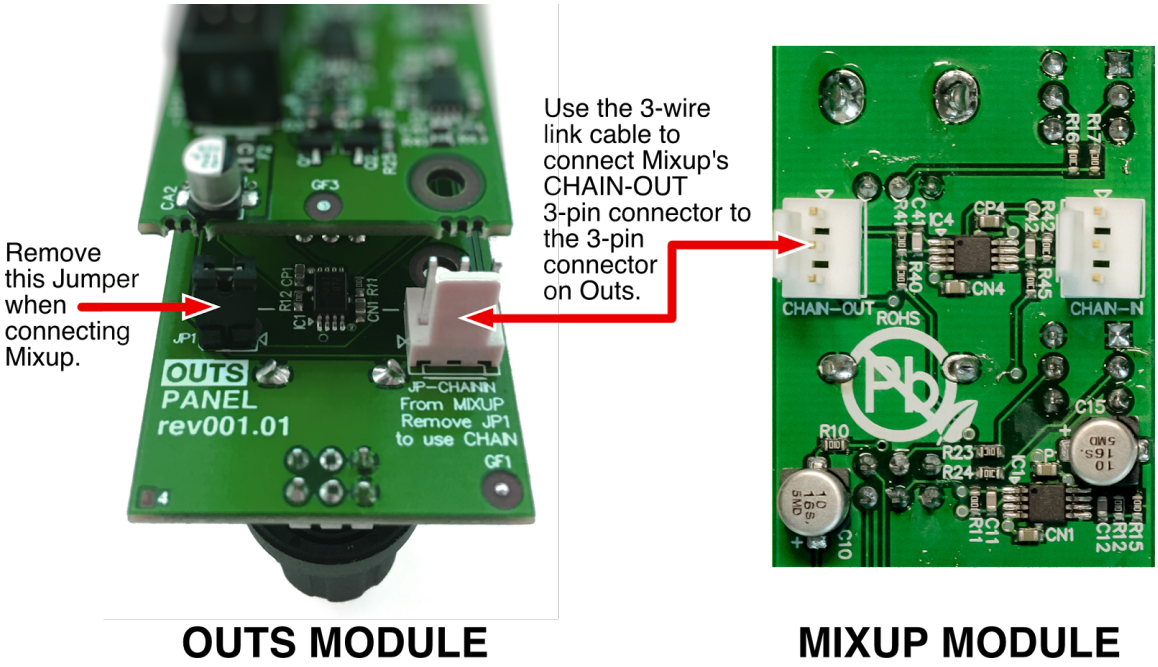
Connecting Mixup to an Intellijel Outs Module

If you own an Intellijel Outs module, you can connect it directly to the Mixup using the included link cable. To do so:

1. Using the 3-wire link cable provided with your Mixup module, connect one end of it to the **CHAIN-OUT** 3-pin connector on Mixup, and the other end to the 3-pin connector on the Outs module.

2. **IMPORTANT!** On the back of the Outs module, **remove the JP1 jumper connector and put it in a safe place**.

   This jumper is what normals the Outs module's Left input to its Right input. Since the Mixup module has its own Left-to-Right normaling, 3-pin Link connections require removal of this jumper to achieve expected operation and optimum sonic fidelity.



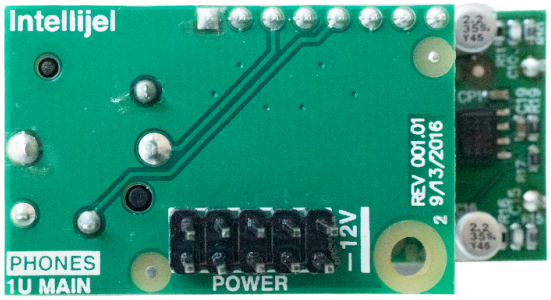
Mixup's **MIX L** and **MIX R** outputs are now sent directly to the left and right inputs on your Outs module without patching the front panels.

Connecting Mixup to a v2 Headphones 1U Module

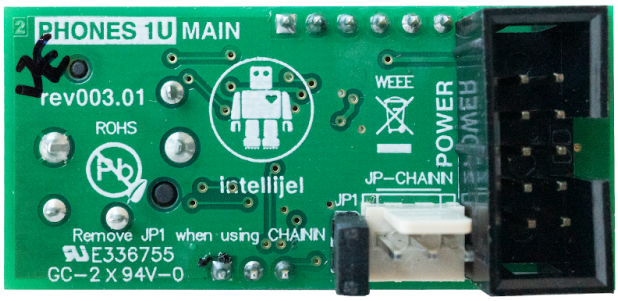
If you own an Intellijel Headphones 1U module (version 2 only), you can connect it directly to the Mixup using the included link cable. To do so:

1. Confirm you have a “version 2” Headphones 1U module.

   Version 2 modules, in production since August 2019, have a 3-pin Link connecter and a jumper on the rear panel. Version 1 modules do not.



VERSION 1 variations have only a single power connector on the rear panel



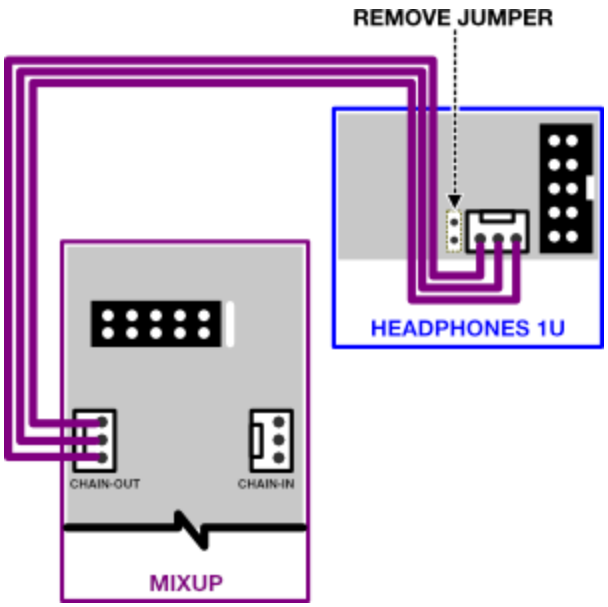
VERSION 2 has power, plus a 3-pin Link Connector (and normaling jumper) on the rear panel

2. Using the included 3-wire link cable, connect one end of it to the **CHAIN-OUT** 3-pin connector on Mixup, and the other end to the 3-pin input connector on the Headphones 1U module.

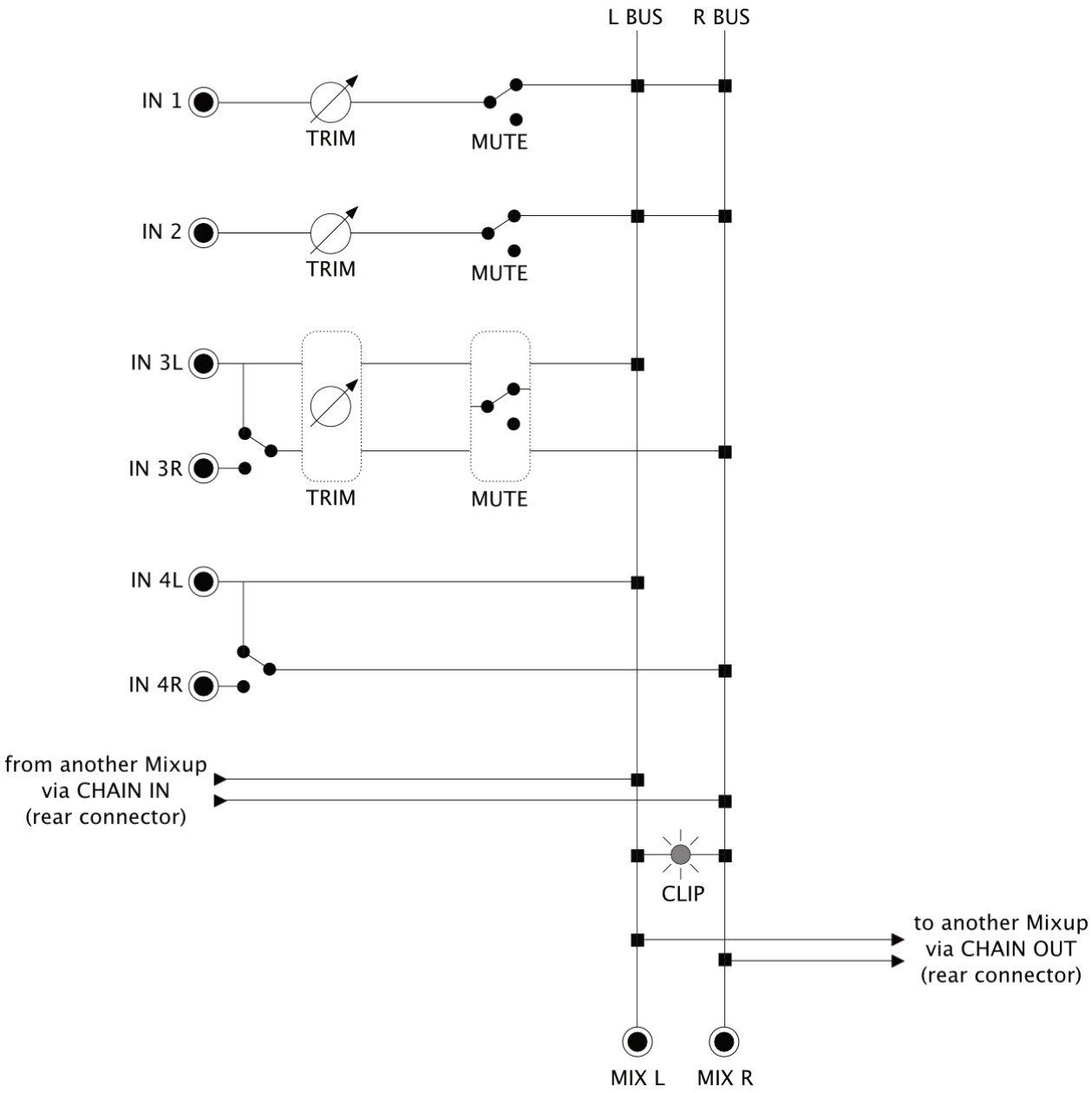
3. **IMPORTANT!** On the back of the Headphones 1U module, **remove the JP1 jumper connector and put it in a safe place**.

   This jumper is what normals the Headphones 1U module’s Left input to its Right input. Since the Mixup module has its own Left-to-Right normaling, 3-pin Link connections require removal of this jumper to achieve expected operation and optimum sonic fidelity.

4. Mixup’s **MIX L** and **MIX R** outputs are now duplicated directly to the left and right inputs on your Headphones 1U module without patching the front panels.



ARCHITECTURE



TECHNICAL SPECIFICATIONS

Width	6 hp
Maximum Depth	29 mm
Current Draw	15 mA @ +12V 16 mA @ -12V