

XFADE 1U

Stereo Crossfader

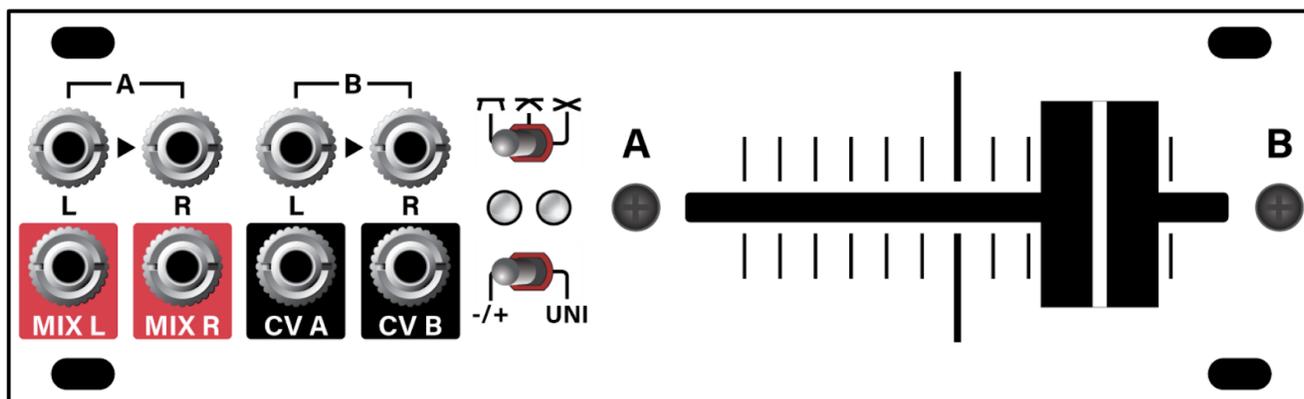


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COMPLIANCE



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

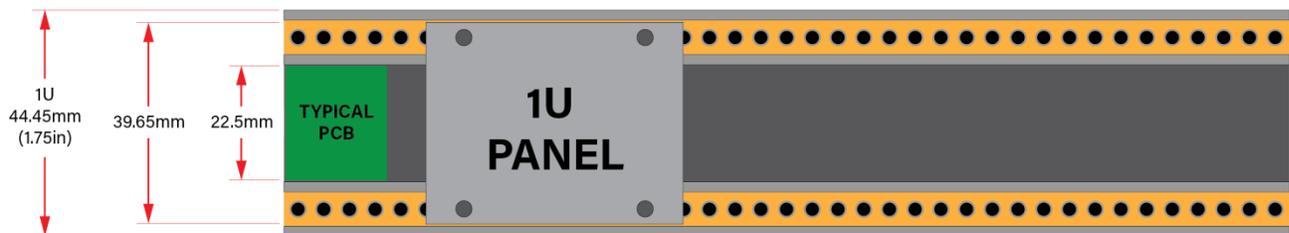
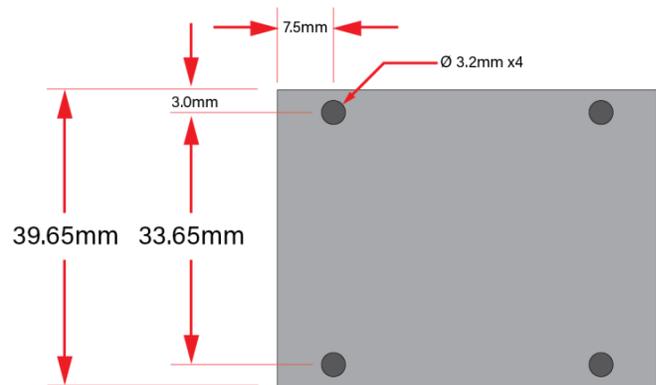
Low Voltage: 2014/35/EU
EN 60065:2002+A1:2006+A11:2008+A2:2010+A12:2011

RoHS2: 2011/65/EU

WEEE: 2012/19/EU

INSTALLATION

This module is designed for use within an Intellijel-standard 1U row, such as contained within the Intellijel Palette, or 4U and 7U Eurorack cases. Intellijel's 1U specification is derived from the Eurorack mechanical specification set by Doepfer that is designed to support the use of lipped rails within industry standard rack heights.



Before You Start

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, 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. Some modules have shrouded headers to prevent accidental reversal.

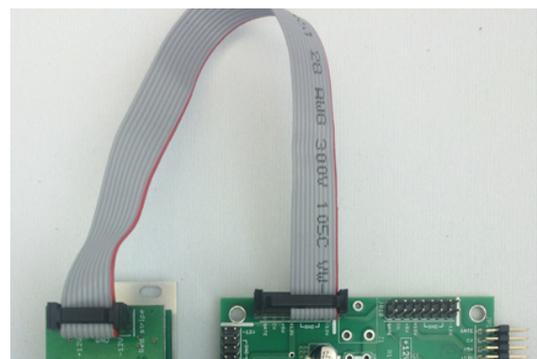
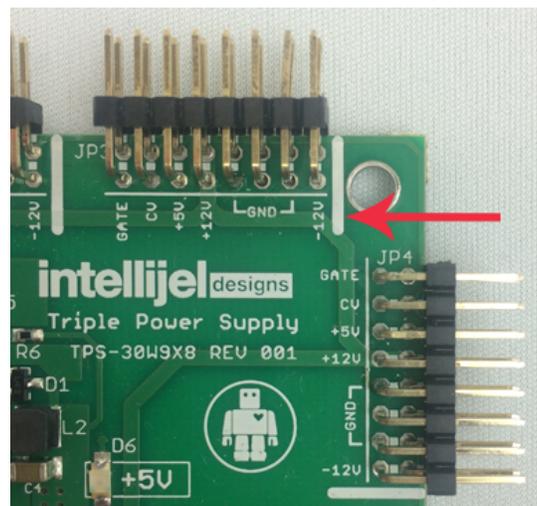
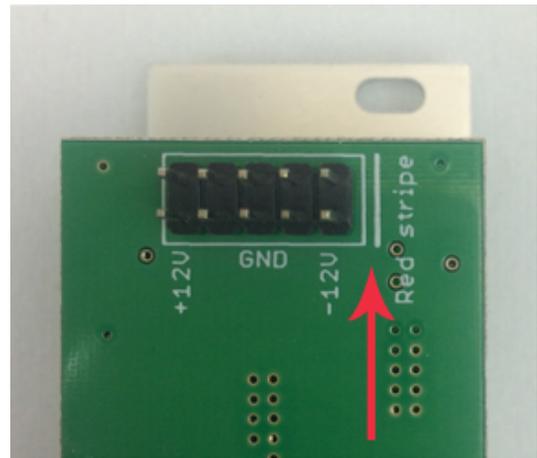
Most modules will come with the cable already connected, but it is good to double check the orientation. Be aware that some modules may have headers that serve other purposes so ensure the cable is connected to the correct one.

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 labeled with "-12V" and/or a thick white stripe, while others have shrouded headers to prevent accidental reversal:

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

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

XFADE 1U is a classic DJ-style stereo crossfader, with a few extra tricks up its sleeve. It has an “A” side with L+R inputs; and a “B” side, also with L+R inputs. The Crossfader blends the two signals together — crossfading one into the other depending on the position of the slider and the selected XFADE Shape. The blended output appears at the MIX L and MIX R output jacks.

In addition, XFADE 1U can be used as a modulation source for controlling other modules, since the crossfader also outputs control voltages from the CV A and CV B jacks. A switch determines whether these voltages are unipolar (crossfading from 0V to 5V; and 5V to 0V), or bipolar (crossfading from -5V to +5V; and +5V to -5V). The two LEDs indicate the polarity and relative levels of the CV A and CV B signals.

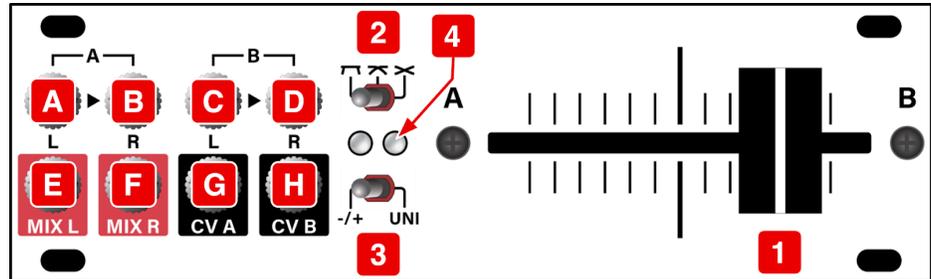
XFADE 1U uses a precision Innofader™ crossfader, with moving capacitance technology for smooth and precise control.

FRONT PANEL

Inputs

[A] “A” L IN - LEFT input for the “A” side of the crossfader.

[B] “A” R IN - RIGHT input for the “A” side of the crossfader. If nothing is plugged into this jack, then the input of the “A” L IN **[A]** jack is normalled to it.



[C] “B” L IN - LEFT input for the “B” side of the crossfader.

[D] “B” R IN - RIGHT input for the “B” side of the crossfader. If nothing is plugged into this jack, then the input of the “B” L IN **[C]** jack is normalled to it.

Outputs

[E] **MIX L Out** - The blended (mixed) LEFT output of the “A” side and “B” side LEFT inputs. The amount of each input present in the mix is determined by the position of the **Crossfader [1]** and the selected **XFADE Shape [2]**.

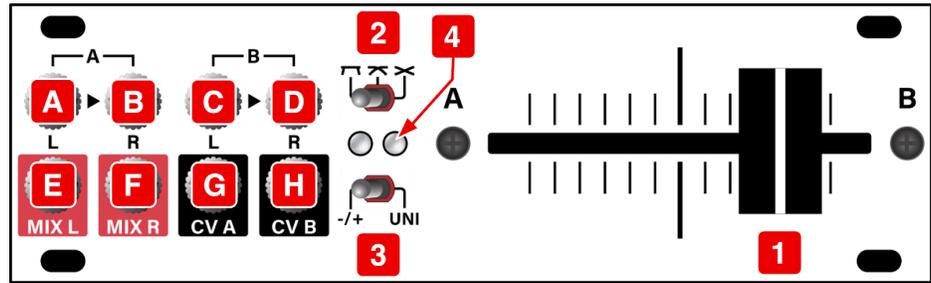
[F] **MIX R Out** - The blended (mixed) RIGHT output of the “A” side and “B” side RIGHT inputs. The amount of each input present in the mix is determined by the position of the **Crossfader [1]** and the selected **XFADE Shape [2]**.

[G] **CV A Out** - Outputs a voltage that corresponds to the position of the **Crossfader [1]** relative to the “A” side. The actual voltage is determined by 1) how close the crossfader is to the “A” side; 2) the selected **XFADE Shape [2]**; and 3) the **Polarity [3]** switch.

[H] **CV B Out** - Outputs a voltage that corresponds to the position of the **Crossfader [1]** relative to the “B” side. The actual voltage is determined by 1) how close the crossfader is to the “B” side; 2) the selected **XFADE Shape [2]**; and 3) the **Polarity [3]** switch.

Controls

- [1] **Crossfader** - Sets the relative balance between the signal appearing at the “A” side L/R [A/B] inputs and the signal appearing at the “B” side L/R [C/D] inputs, sending the blended signals to the MIX L [E] and MIX R [F] outputs.

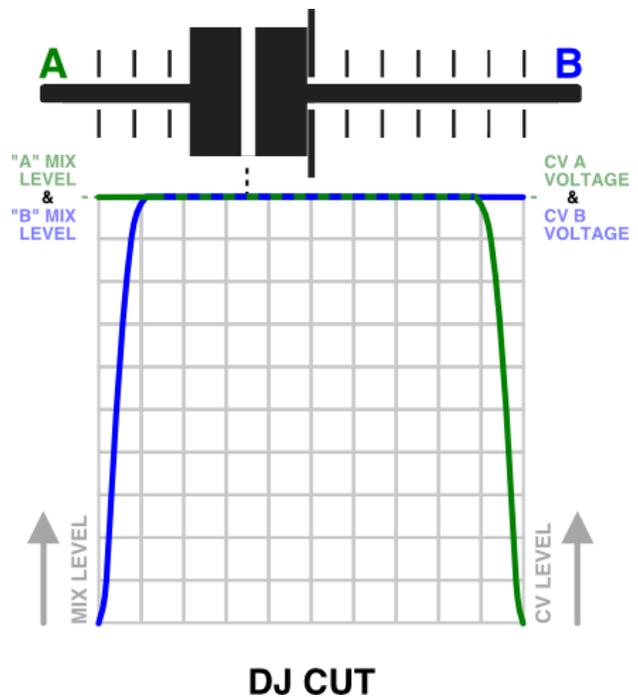


inputs, sending the blended signals to the MIX L [E] and MIX R [F] outputs.

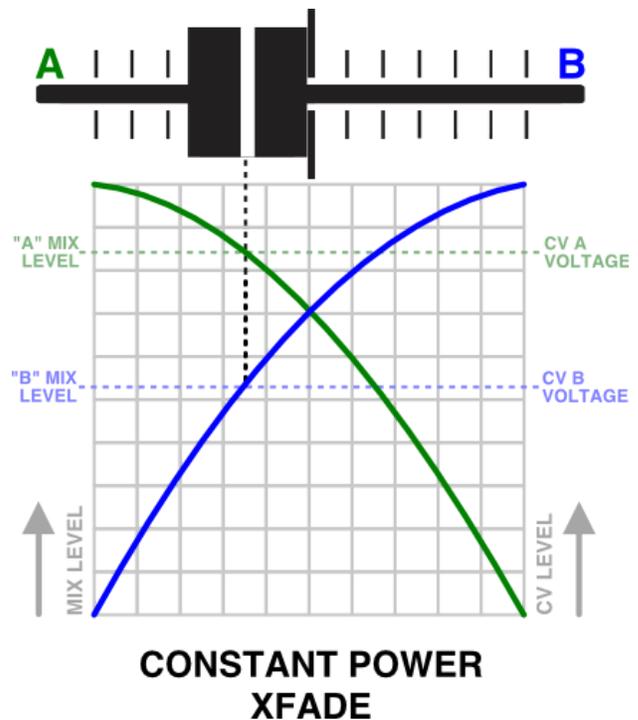
Additionally, the crossfader determines control voltage levels sent out the CV A [G] and CV B [H] jacks. The closer the fader is to the “A” side, the greater the absolute voltage sent out CV A and the less sent out CV B. Similarly, the closer the fader is to the “B” side, the greater the absolute voltage sent out CV B, and the less sent out CV A. The way in which one voltage crossfades into the other is set by the XFADE Shape [2] switch. The Polarity Switch [3] sets whether the voltages crossfade between 0V and 5V (“UNI” position) or between -5V and +5V (“-/+” position).

- [2] **XFADE Shape Switch** - Sets the XFADE shape, which determines exactly how the “A” side crossfades into the “B” side as you move the crossfader. There are three positions:

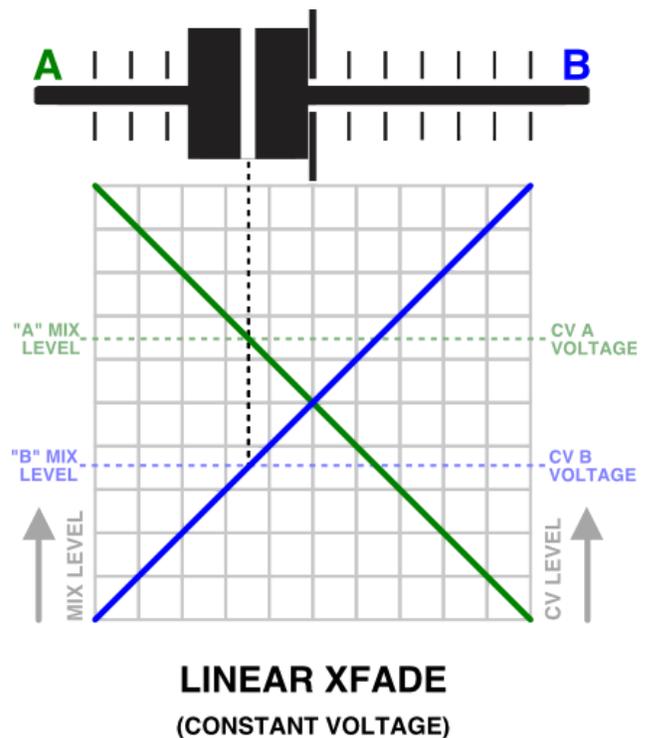
- **DJ CUT** (left position): This shape is used to instantly cut (or add) a signal to the mix. As the crossfader moves left-to-right, the level present from the “A” side stays at max, until it’s about 95% to the right, at which point it quickly decreases. Meanwhile, the “B” side level quickly increases to its maximum about 5% into the crossfade; where it stays for the remainder of the fade. Throughout most of the middle range, both the “A” side and “B” side levels are at their maximum.



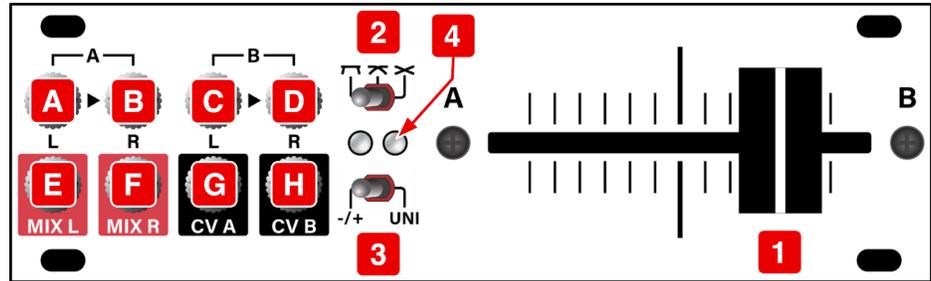
- CONSTANT POWER** (middle position): As the crossfader moves left-to-right, the level present from the “A” side decreases in amplitude as the level present from the “B” side increases in amplitude. In the middle, both the “A” side and “B” side levels are reduced by 3dB, ensuring the output retains a constant level summation.



- LINEAR** (right position): As the crossfader moves left-to-right, the level present from the “A” side linearly decreases in amplitude as the level present from the “B” side linearly increases in amplitude. In the middle, “A” side levels and “B” side levels are both cut by 50%.



[3] Polarity Switch -
Sets whether the voltages sent from **CV A [G]** and **CV B [H]** are Unipolar or Bipolar:



- **UNI (UP)** : In this position, the voltage sent out CV A or CV B is +5V at the maximum level, and 0V at the minimum level.
- **-/+ (DOWN)** : In this position, the voltage sent out CV A or CV B is +5V at the maximum level, and -5V at the minimum level.

[4] LEDs - These indicate the amount and polarity of the voltage sent out **CV A [G]** (left LED) and **CV B [H]** (right LED) jacks. **Green** indicates a positive voltage, while **red** indicates negative. The brightness of the LED reflects the absolute voltage level.

BACK PANEL

Aside from the usual power connector, the back panel also contains a 3-pin Link connector, and each XFADE 1U module ships with one 3-pin Link cable. Use this to connect XFADE 1U's MIX output to the input of a compatible, 3-pin equipped Intellijel module (such as a **Mixup**), or to the 3-pin Link connector that feeds the output jacks on your Intellijel **7U** or **Palette** case. See those manuals for more information. Using the 3-pin Link cable negates the need to patch the **MIX L Out [E]** and **MIX R Out [F]** jacks to your Mixup or audio output module via the front panel.

IMPORTANT: *Never use the 3-wire Link cable to directly connect a XFADE 1U module to an Intellijel **Pedal I/O** module. Although both modules use this same cable/connector — they serve different purposes and carry different signals.*

TECHNICAL SPECIFICATIONS

Width	26 hp
Maximum Depth	38 mm
Current Draw	48 mA @ +12V 41 mA @ -12V