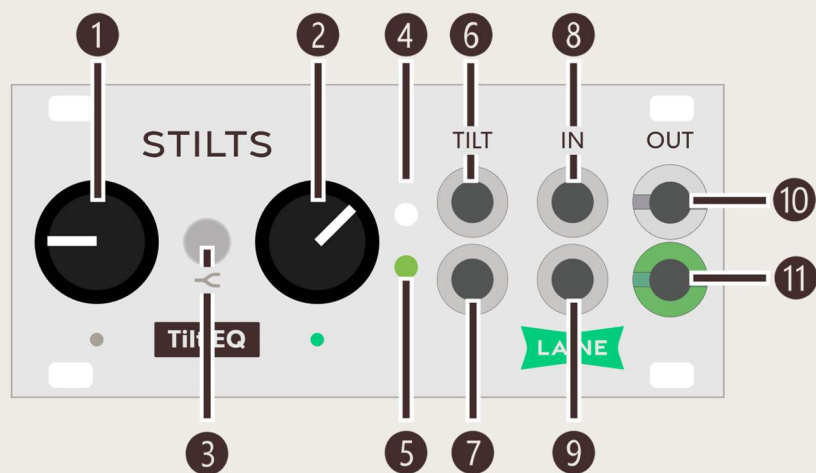


STILTS

Dual VC Tilt/High Shelf Equaliser



Designed in the Intellijel 1U format for Eurorack modular systems.

User Manual

Revision 20/12/23

Thank you for purchasing this dual Equaliser module from Laine. We hope it soon becomes the go-to tone shaping tool in your 1U row.

Overview

Stilts provides two channels of single control filtering, with tilt or high shelf topologies. It can be switched seamlessly between these two styles of EQ.

Tilt: Boost low frequencies while also cutting highs, or boost high frequencies whilst also cutting lows.

Baxandall High Shelf: A gentle high frequency gain shelf allowing boosting or cutting whilst leaving the mid-range and bass frequencies untouched.

Use the tilt and high shelf to perform a variety of mixing and sound design duties ranging from subtle, non-resonant brightness and clarity adjustments to low-end rumble removal, boosted low pass filtering and sweep EQ.

Each channel's fully analogue signal path comprises several multi-band active filters that are summed and mixed through a VCA. These active filter networks are tuned to provide a transparent response with controls at the centre position, whilst also allowing for smooth adjustment on low and high frequency bands.

Operation

In the default tilt mode (Mode Switch in the raised position) turning a control knob clockwise simultaneously boosts treble and cuts bass. Turning anti-clockwise boosts bass and cuts treble. These boosts and cuts pivot around the mid-range in the 800Hz region. With the control knob at 12 o'clock the frequency response is neutral.

With Baxandall high-shelf mode enabled, turning the control knob clockwise past 12 o'clock introduces a gentle high shelf EQ weighted around the upper mid-range in the 1kHz region. Turning the control knob anti-clockwise results in a wide high shelf cut with subtle bass and mid-range adjustments.

The signal paths of both channels are identical, and depending on how they are routed externally, the channels can be configured as dual independent filters, or as a stereo-in, stereo-out filter with each output panned left and right. Patching the output of CH1 to CH2 runs the filters in series and allows for pronounced sound shaping and band pass responses.

Each channel provides up to +/- 8dB of low and high-frequency gain control, summing into a low noise VCA output stage. Hot input signals over 15VPP are saturated by active Zener diode clipping at the input buffer.

The boost and cut controls are CV responsive to input signals of 0-8V. Turn the control knobs fully anti-clockwise to allow full CV control of the filter gain range.

Front Panel

1 2 CH 1, CH 2 Control

These potentiometers control the frequency response of the equaliser channel. Turn anti-clockwise for full CV control.

3 Mode Switch

The latching switch is used to select EQ topologies for both channels. Tilt (with the Mode Switch in the raised position) and Baxandall High Shelf (with the Mode Switch latched down)

4 5 CH 1, CH 2 Audio Level LEDs

The clear LED represents CH1 audio input signals, the green LED displays CH 2.

6 7 CH 1, CH 2 CV Input

These CV input jacks are responsive to signals ranging from 0 to 8V and show an input impedance of 100k. Turn the channel's control knob fully anti-clockwise for full CV control through the jack inputs. With no jack patched, CH 2 is normalised to the CH 1 CV input.

8 9 CH 1, CH 2 Audio Input

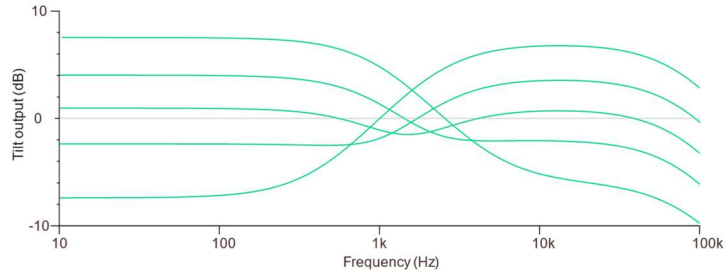
The AC-coupled input jacks will begin to clip with input signals over 15VPP. They show an input impedance of 100k. With no jack patched, CH 2 is normalised to the CH 1 Audio input.

10 11 CH 1, CH 2 Audio Output

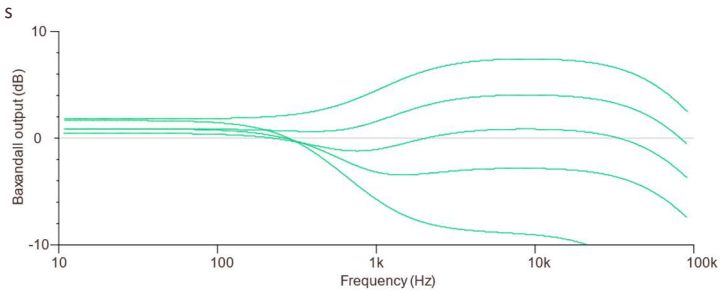
These output audio signals for CH1 and CH2. With the control knob in the central position the output signal will match the signal level at the audio inputs.

Typical Response Graphs

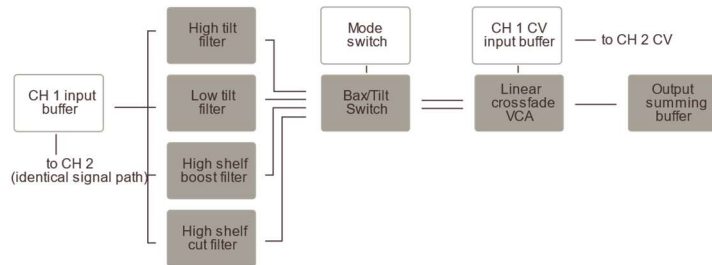
Tilt EQ Response



Baxandall High Shelf Response



Signal Flow Diagram



Specifications

- Intellijel 1U format
- Width 18HP
- Depth 32mm
- Power requirements ~60mA +12V ~58mA -12V
- Control voltage range 0-8V
- Impedance: Input 100K Output 1K

Standards Compliance

This device complies with international EMC and Safety Standards when installed in a fully compliant rack. It has been assembled and tested in the United Kingdom.

UKCA

UK Electrical Equipment (Safety) Regulations 2016 (SI 2016/1101) UK Electromagnetic Compatibility Regulations 2016 (SI 2016/1091.) The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS2) 2011/65/EU.

CE

EU Low Voltage directive (LVD) 2014/35/EU, EU Electromagnetic Compatibility directive (EMC) 2014/30/EU. The Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS2) 2011/65/EU.

FCC

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference,
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Electromagnetic Compatibility

BS EN 55032:2015, Class B. BS EN 55035:2017.

Electrical Safety

BS EN 62368-1:2014 + A11:2017, EN 62368-1:2014 + A11:2017, CSA CAN/CSA-C22.2 NO. 62368-1 2nd Ed, 2014.

Environmental Temperature

Operating: +1 to 30°C.

Storage: -20 to 50°C.



Warranty

Laine warrants this product to be free of defects in materials or construction for a period of one year from the date of purchase (proof of purchase or invoice is required.)

Defects resulting from incorrect power supply voltages over or under 12V, abuse of the product, removing knobs, changing face plates, or any other causes determined by Laine to be the fault of the user are not covered by this warranty, and normal service charges will apply. During the warranty period, any defective products will be repaired or replaced, at the discretion of Laine, on a return-to-Laine basis with the customer paying the shipping cost to Laine.

Laine implies and accepts no responsibility for harm to person or apparatus caused through the operation of this product.

Product Support Contact

Please contact jack@laine.uk with any questions, return requests and comments.

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