Quad Quantizer

4 – Channel CV Quantizer

Manual revision 28/01/2020

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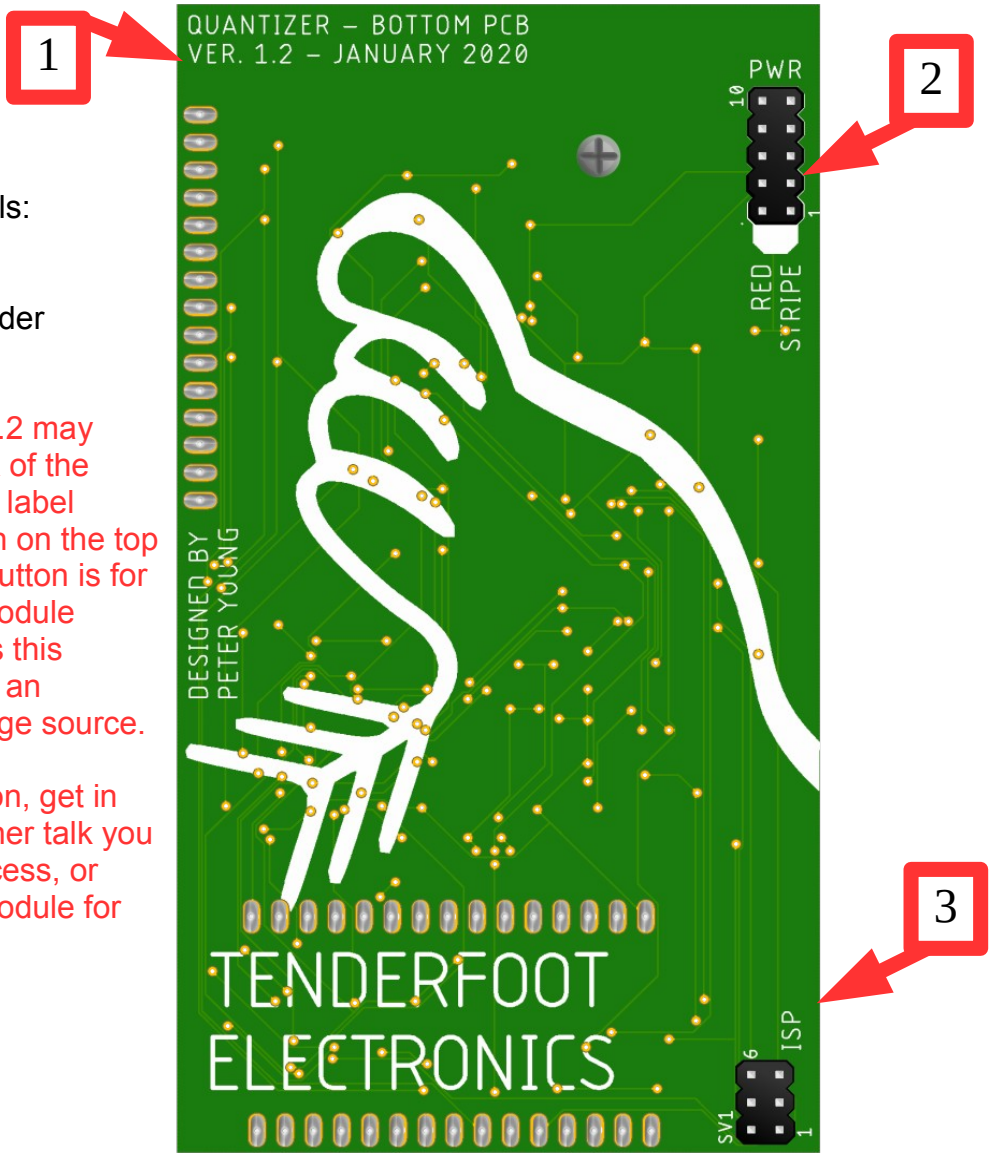
Overview

The Quad Quantizer is a 4-channel CV quantizer with custom note selection, preset scales, and selectable keys. For each channel, there is a CV input, trigger input, CV output, and trigger output.

The back of the module



The rear of the module reveals:
(1) the PCB version
(2) the power header
(3) the ISP programming header

IMPORTANT
PCB revisions prior to VER 1.2 may also have a label on the back of the board saying “calibrate”. This label points to a small tactile switch on the top side of the lower PCB. This button is for factory use to calibrate the module before shipping. Do not press this button as calibration requires an accurate volt meter and voltage source.

If you have pressed this button, get in touch with us and we can either talk you through the recalibration process, or arrange to recalibrate your module for you.

Installation

Tenderfoot Electronics modules are designed to be used with a Eurorack-compatible case and power supply. Before installing a new module into your case, please ensure that your power supply and case have sufficient space and available capacity to power the module.

The Quad Quantizer draws current from the +12V and -12V rails, and has an onboard 5V regulator for any circuitry which requires it, so can be used in cases without a 5V rail.

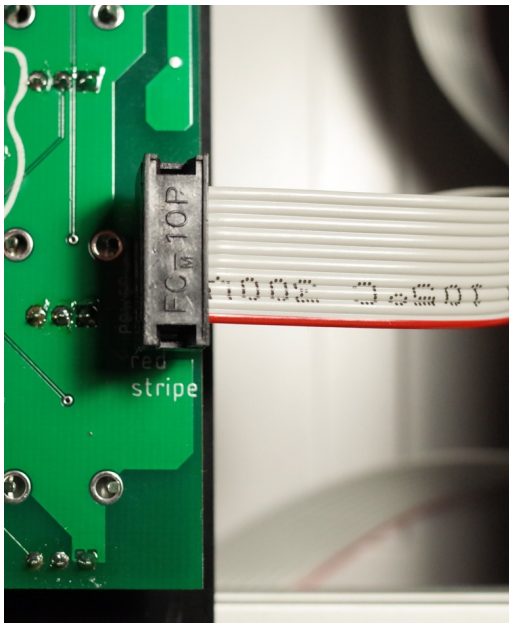
Failure to adequately power your modules may result in damage to your modules or power supply. If you are unsure, please contact us before proceeding.

Before installing or removing a module from your rack, ensure that you turn off the power supply for the case. If a module is removed or installed while the rack power supply is switched on, it could cause serious damage to either the module, or power supply, or both.

Connecting the power cable to the module:

When connecting the ribbon cable to the back of the module, make sure you attach it to the 10-pin header that is labelled “PWR” towards the upper-right side of the PCB. Connecting the power cable to the ISP header will irreparably damage the module

The power header is labelled at one end with a bold stripe, and the words “red stripe”. Align the red stripe on the ribbon cable with the “red stripe” label on the PCB.



Once the cable is attached to the module, connect the 16-pin end of the cable to your case's power supply, again ensuring the red stripe lines up with that of the power supply PCB.

Using the included screws, screw the module on to your rails, power up, and enjoy! If at any time you notice irregularities in the operation of the module, turn off the case and inspect all connections and cables.

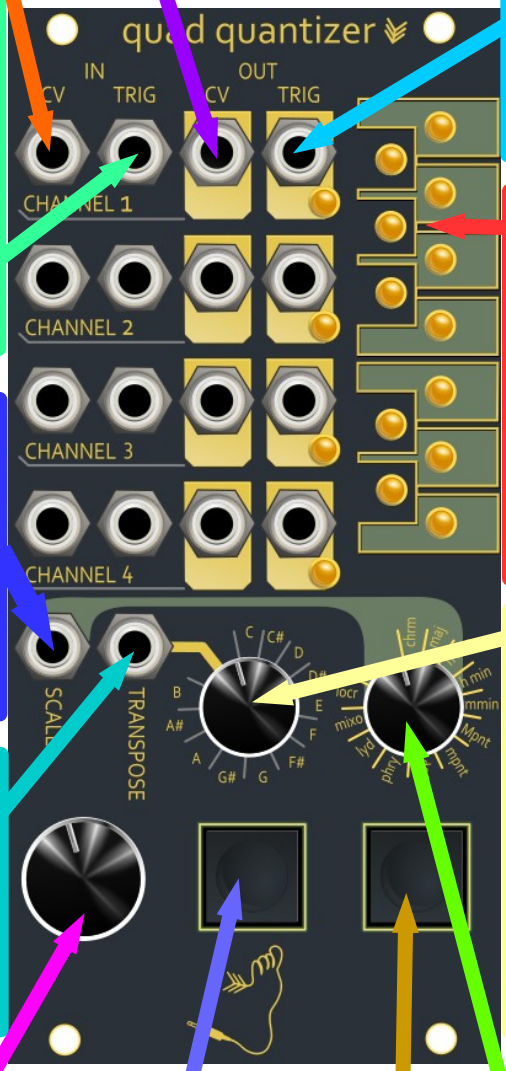
Panel Layout

CV IN
Insert the control voltages that you wish to quantize into the CV IN. The first jack for each channel is the CV IN.

CV OUT
The quantized CV from the module will emerge from the third jack of each channel. This will typically be patched to a 1V/oct input on a VCO.

TRIG OUT
The trigger output will produce a trigger signal each time the CV output changes value. Each time a trigger is generated, the associated LED indicator will illuminate. This output will typically be patched to the trigger / gate input of your envelope generator.

TRIG IN
Leaving this unpatched will allow continuous quantizing of the CV input. Sending a trigger to this input will sample and hold the current CV IN. Once unpatched, the continuous sampling mode will resume after 5 seconds.



Note Display
The LED display is laid out in the shape of a piano and shows which notes the CV inputs are currently being quantized to. The cursor position for custom note selection is marked by a blinking of the LED of the currently selected note.

SCALE CV IN
This CV input allows the automation of changes to the scale that each channel is being quantized to. <u>Remember to turn the scale dial clockwise to allow CV through.</u>

Key Dial
The current scale and notes selected on the quantizer can be transposed to a different key using this dial. When using the TRANSPOSE CV input jack, this dial becomes an attenuator, and therefore needs to be turned clockwise to allow any CV to pass through it.

TRANSPOSE CV IN
This CV input allows the automation of changes to the key that each channel is being quantized to. <u>Remember to turn the key dial clockwise to allow CV through.</u>

Encoder
Turning the encoder moves the cursor up or down the LED note display. The currently selected note is shown by a blinking of the associated LED.

Button 1
Button 1 adds and removes notes to the current quantization scale.

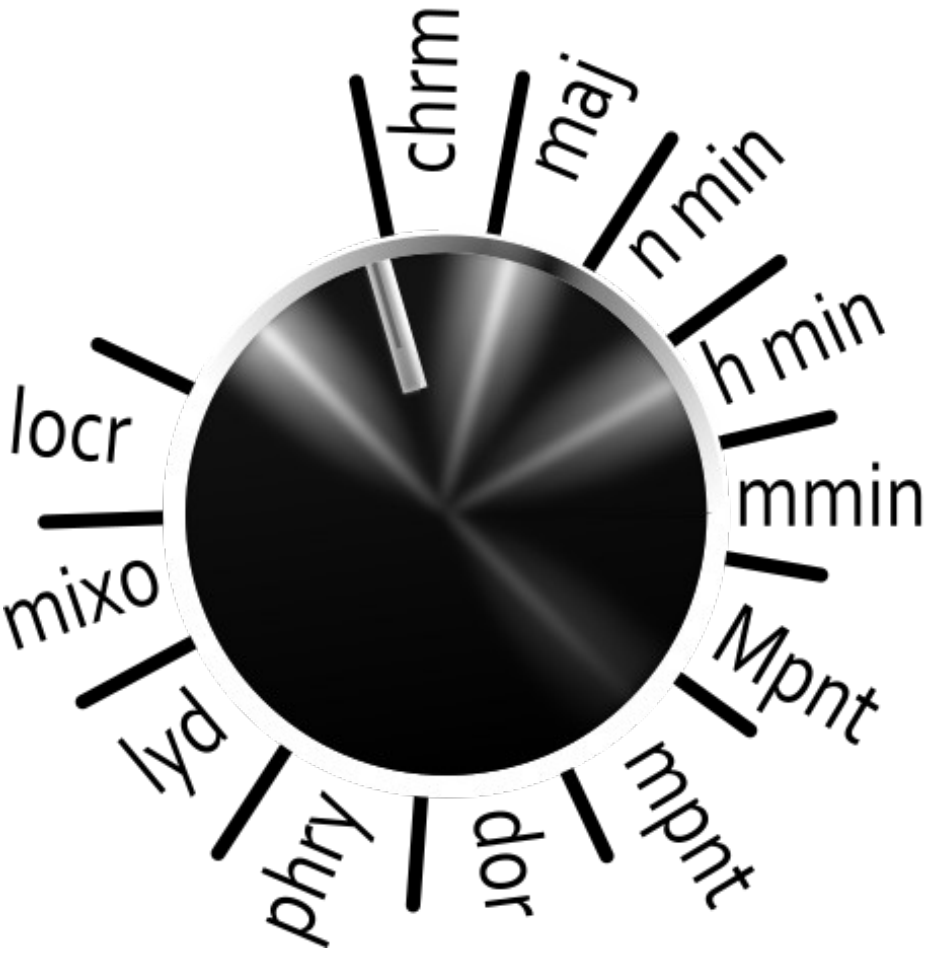
Button 2
Button 2 has three main functions. For a full explanation, read on to the next page.

Scale Dial
There are 12 pre-programmed scales in the Quad Quantizer. This dial selects which of those scales is activated. When using the SCALE CV input jack, this dial becomes an attenuator, and therefore needs to be turned clockwise to allow any CV to pass through it.

Scale dial

The Quad Quantizer has 12 preset scales that are selectable via the scale dial.

Note, that when using the SCALE CV input jack, the dial will become an attenuator. In order to allow CV from the SCALE CV nput jack to enter the module, you must turn the scale dial clockwise. We recommend turning it all the way to “locr” and then rolling it back if the CV needs attenuating.



The 12 preset scales are indicated as follows:

1. “chrm” - Chromatic Scale
2. “maj” - Major Scale
3. “n min” - Natual Minor Scale
4. “h min” - Harmonic Minor Scale
5. “mmin” - Melodic Minor Scale
6. “Mpnt” - Major Pentatonic Scale
7. “mpnt” - Minor Pentatonic Scale
8. “dor” - Dorian Mode
9. “phry” - Phrygian Mode
10. “lyd” - Lydian Mode
11. “mixo” - Mixolydian Mode
12. “locr” - Locrian Mode

Functions of BUTTON 2

Button 2 has three main features:

Quick Press <0.5 seconds
A momentary press of the button toggles between the panel settings and the scale saved in the quick memory. All of the note LEDS will blink once per second while in the quick memory mode as an indicator of which mode you are in. Whilst in quick memory mode, any changes to the scale or key dials or associated CV inputs will not be registered. This can be useful if you wish to manually change to another key or scale without scrolling though all of the intermediary scales and keys.

Medium press 0.5 to 3 seconds
Pressing the button for between 0.5 and 3 seconds saves the currently selected notes to the quick memory. Confirmation that you have saved the current settings to quick memory is shown in the form of a single blink of all of the display LEDS.

Long press > 3 seconds
Holding the button for over 3 seconds clears the current note selection and stops all quantization. This is shown by a double blink of the LEDS.

IMPORTANT THINGS TO NOTE AND REMEMBER

1. When using either the SCALE or TRANSPOSE CV inputs, remember to turn the associated dial clockwise, as it will be acting as an attenuator.

2. Do not press the hidden tactile button on the top side of the lower PCB (labelled “calibrate” on PCB revisions before VER1.2) as this is the calibration button intended for our own factory use only. If you have pressed this and have access to an accurate volt meter, get in touch and we can walk you through the calibration procedure. If you do not have access to a volt meter, we will happily recalibrate your module for you at our factory, but are unable to cover postage fees for returning the module back to Taiwan to do so.

3. As always, make sure you plug the power cable on to the correct header pins, and line up the red stripe with the white marking on the PCB silkscreen.

4. Have fun with the module, and if you have any questions or issues regarding it, don't hesitate to get in touch with us at **tenderfootelectronics@gmail.com** !