

QUAID GIGASLOPE - Operation Manual

ALM047

Version 0.6

Firmware 100

February 02 2026

Contents

1	INTRODUCTION	3
2	FEATURE LIST	3
3	TECHNICAL SPECIFICATIONS	4
4	CORE OPERATION	5
4.1	Panel Layout	5
4.2	Getting Started	5
4.2.1	Basic Setup Examples	7
5	REFERENCE	9
5.1	Slope Controls	9
5.1.1	Type	9
5.1.2	Start and End Stages	9
5.1.3	Quantiser	10
5.1.4	Sustain	10
5.1.5	Reset	10
5.1.6	Output Range (+/-)	10
5.1.7	EOC (End of Cycle)	11
5.1.8	EOS (End of Slope)	11
5.2	Stages	12
5.2.1	Level Slider	12
5.2.2	Time	12
5.2.3	Curve	12
5.3	Trigger Inputs	13
5.4	Slope Outputs	13
5.5	Trigger Outputs	13
5.6	CV Assignment and Controls	14
5.6.1	Stage Level	14
5.6.2	Stage Time	14
5.6.3	Reset	14
5.6.4	Quantiser	14

5.7	AXON-1 & AXON-2	15
6	LIMITED WARRANTY	16
7	SUPPORT	16
8	APPENDIX	17
8.1	Firmware Update	17
8.2	V/Oct Calibration	17
8.3	Factory Reset	17
8.4	AXON-1	18
8.5	AXON-2	18

I INTRODUCTION

The QUAID GIGASLOPE is a four-channel multi-mode modulator, with each channel outputting a variable staged slope that can act as a complex envelope, flexible LFO, or step sequence.

Each slope can contain up to 13 stages, which may be independent or overlap with other stages. Slopes can be triggered or run freely, with both manual and CV control over each stage's level, duration, and curve. The output range of each slope can be set and optionally quantised to musical scales. Trigger outputs are available at the end of each stage and at the completion of a slope.

The QUAID GIGASLOPE builds on our earlier Megaslope module, expanding the idea of a hands-on, menu-free, jam-friendly complex modulator. With four channels, it easily covers standard envelope duties, quantised sequencing, and LFO tasks, , while its design also encourages more experimental use through overlapping slopes, self-modulation and cross-channel interaction, leading to more distinctive, unexpected, and improvised results.

2 FEATURE LIST

- Quad multimode modulator with complex Envelope, LFO and Step Sequencer modes.
- 13 modulation stages shared or split between slopes.
- Per stage dedicated Level, Time and Curve controls.
- Per slope Quantiser with 19 different scales.
- Selectable output ranges of $\pm 5V$, 0-5V or 0-2.5V.
- Assignable 'EOC' (End of Cycle) or 'EOS' (End of Stage) trigger outputs.
- 4 freely assignable CV inputs.
- AXON CV expander support for 4 additional CV inputs.
- Fun, performance oriented interface, well suited for happy accidents.
- All states preserved across power cycles.
- USB-C for quick and easy 'drag and drop' firmware updates
- Skiff friendly with reverse power protection.
- 2 Year Warranty.
- Made in England.

3 TECHNICAL SPECIFICATIONS

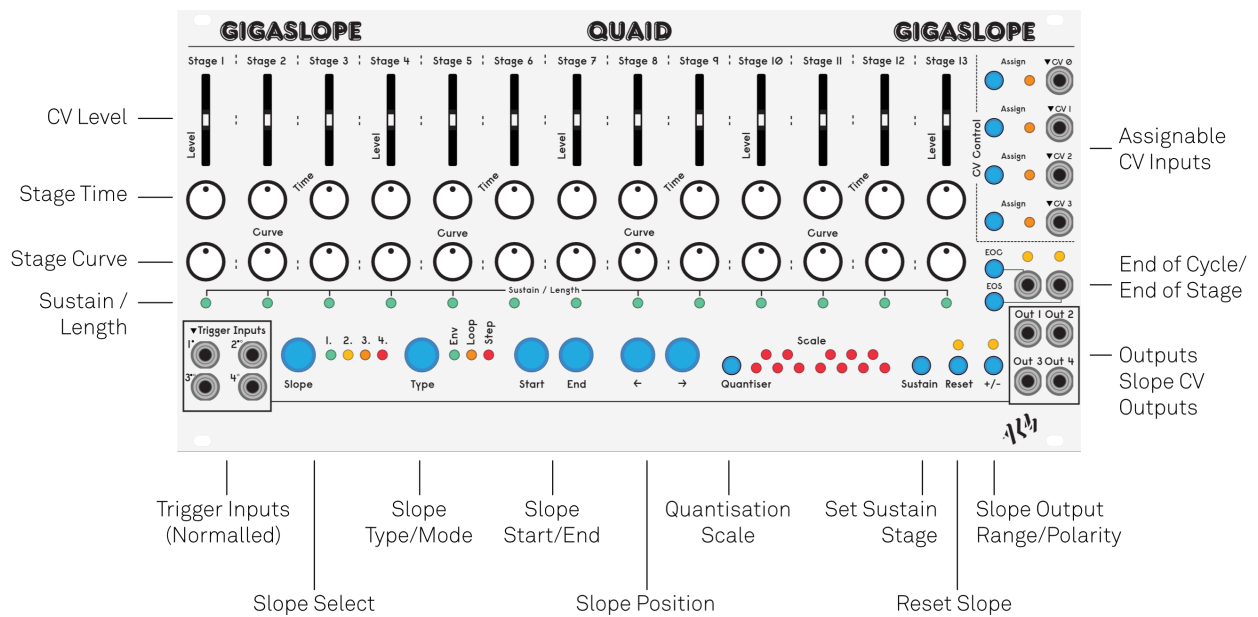
→ Size: 52HP

→ Power: +12V 380mA / -12V 30mA

→ Depth: 32mm (approx)

4 CORE OPERATION

4.1 Panel Layout



4.2 Getting Started

The QUAID GIGASLOPE has 4 'slopes', each of which can operate as one of 3 slope 'types': a triggered Envelope (*Env*), a free running LFO (*Loop*), or a clocked Step Sequencer (*Step*). Each slope produces a varying output voltage moving across a set number of chained together stages. Pressing the *Slope* button changes the selected slope, and pressing the *Type* button selects that slope's mode (both indicated by associated LED). Each of the three types behave as follows:

- *Env* outputs a 'one-shot' slope in response to a trigger or gate sent to the slope's associated *Trigger Input*. This can be used to produce anything from classic AD or ADSR envelopes to more complex triggered rising and falling shapes.
- *Loop* outputs a slope similar to *Env*, but is free running and restarts automatically when the final stage ends, resulting in continuous LFO style modulation which can be freely shaped using the stage controls.
- *Step* outputs a sequence of stepped voltages. Sending a trigger/gate to the trigger input will advance the sequence to the next stage, and the sequence will automatically restart once the last stage is reached.

Holding the *Start* or *End* buttons and using the ← and → buttons will set the currently selected slope's range/length (indicated by the *Length/Sustain* LEDs) out of the 13 shared stages of the QUAID GIGASLOPE. Pressing ← or → without holding any other buttons will offset the stage range without changing the number of active stages, allowing the four slopes to overlap or be completely independent.

Each of the 13 stages has a *Level* slider to set the maximum output CV the stage will reach, and an associated *Time* knob to set the length of time it will take to reach that level. The stage's *Curve* knob sets the shape the changing voltage takes, from logarithmic (fully CCW) to linear (12 o'clock) to exponential (fully CW). The slope's current level is produced as a voltage from its associated CV output. Each of the 13 stage's controls will affect any slopes that have that stage active, regardless of which slope is currently selected.

The voltage range of a slope's CV output can be set with the +/- button to better accommodate the CV destination. By default the slope outputs range from 0-5V, pressing the button once sets the slope to a bipolar -5V to +5V range and holding the button sets the slope to a half level 0-2.5V range (LED will flash to indicate this).

Pressing the *Quantiser* button repeatedly cycles through the internal musical scales (represented by the red LEDs) to lock the stages output CV to discrete tonal values.

Pressing the End of Cycle (*EOC*) and End of Slope (*EOS*) buttons will toggle the respective trigger outputs on and off for the currently selected slope. *EOC* triggers every time any active stage ends, and *EOS* triggers only when the last active stage ends.

Trigger inputs are normalised which means that if a trigger input is patched into Trigger Input 1 but not any others, then Trigger Input 1 will also trigger slope 2 → 3 → 4. Patching a trigger into Trigger Input 3 will break the normalisation at that point, so Trigger Input 1 triggers slopes 1 → 2, and Trigger Input 3 triggers slopes 3 → 4.

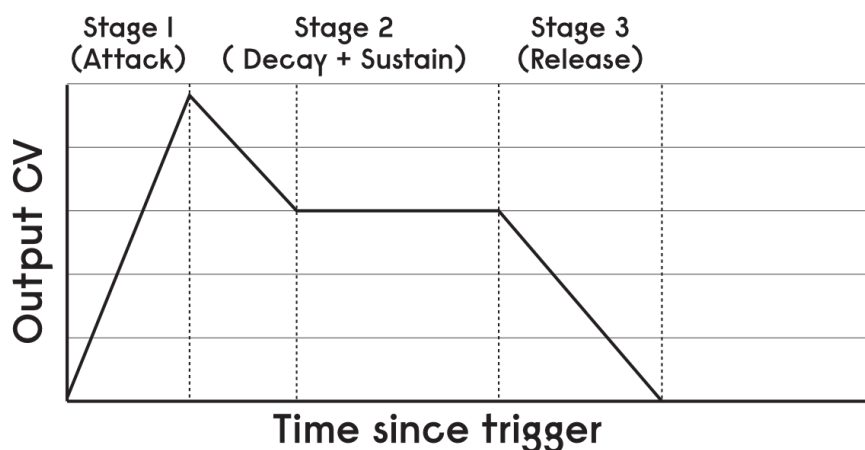
Parameters across the QUAID GIGASLOPE can be modulated using external CV by holding the *Assign* button next to one of the 4 CV inputs and turning a control 'up' or clockwise to assign it, turning the control 'down' or anticlockwise to un-assign it.

4.2.1 Basic Setup Examples

Some simple use cases for each of the three 'types' can be set up as follows:

Using as an Envelope Generator

1. Press the *Slope* button to select Slope 1 and the *Type* button to select *Env* mode (both indicated by the LEDs).
2. Hold the *Start* or *End* button and use ← and → to set the first active stage to Stage 1 and the last active stage to Stage 3 (indicated by the *Sustain/Length* LEDs). You can also use ← and → to offset the stage selection.
3. Hold the *Sustain* button and use ← and → to select Stage 2 to make that stage hold the voltage set by its *Level* slider for as long as the input trigger/gate is held high.
4. Patch an external trigger (or gate) into *Trigger Input 1* and patch *Output 1* into the level input of a VCA with an audio source running through it (or any other destination you'd like to modulate with an envelope).
5. Adjust Stage 1's *Time* knob to adjust the attack length of the envelope, its *Level* slider to set the maximum output CV reached by envelope, and Stage 2's *Time* knob to set the decay length.
6. Stage 3's *Time* knob controls the envelope's release length, and its *Level* slider should be set to 0 so the envelope fully closes when it ends.
7. Experiment with making more stages active to achieve more complex envelopes, or use in conjunction with the other Slopes to create multiple related sources of modulation.



Using as an LFO

1. Press the *Slope* button to select Slope 1 and the *Type* button to select *Loop* mode, then hold the *Start* or *End* buttons and use ← and → to set the start and end stages of the LFO (indicated by the *Sustain/Length* LEDs). The more stages you make active, the more complex the LFO will be.
2. Adjust the *Level* slider of each stage to set the maximum output CV it will reach, and the *Time* knob of each stage to affect how much time it will take for it to reach that level.
3. Patch *Output 1* into any other module's CV input to modulate it. There is no need to patch a trigger input as the LFO will loop automatically when the last active stage ends, but if you do patch one it will act as a reset.

Using as a Step Sequencer

1. Press the *Slope* button to select Slope 1 and the *Type* button to select *Step* mode, then hold the *Start* or *End* buttons and use ← and → to set the start and end stages of the sequence (indicated by the *Sustain/Length* LEDs). The number of stages you make active sets how many notes will be in the sequence.
2. Set the output range according to how many octaves you want the output to cover (see below for how to do this). 2.5V is a good range for typical step sequencer operation as it gives you finer control over the pitch of the notes.
3. Patch *Output 1* into the 1V/Oct input of an oscillator and a steady clock source into *Trigger Input 1* to start hearing the sequence.
4. Use the *Level* slider for each stage to set the pitch of the note it will produce and the *Time* knob to add pitch slides, fine tuning the 'shape' of the slide using the associated *Curve* knob.
5. Press the *Quantiser* button to cycle through the available musical scales. The lit LEDs will show the notes that the CV will 'snap' to so your sequence is always in tune.

5 REFERENCE

5.1 Slope Controls



Each of the four slopes have some settings/controls which are not shared with the others, and changing them will only affect the currently selected slope. Press the *Slope* button to change which slope is currently selected (indicated by the LEDs).

5.1.1 Type

Pressing the *Type* button cycles through the 3 available types (modes) for the currently selected slope:

Env: An envelope which will run once per trigger.

Loop: A looping cycle which does not require a trigger and will loop indefinitely.

Step: A sequencer style mode where each trigger advances the slope to the next stage.

5.1.2 Start and End Stages

To edit the stage the slope starts at, hold down the *Start* button and use ← and → to set the start stage (indicated by the *Sustain/Length* LEDs).

To edit the stage the slope ends on, hold down the *End* button and use ← and → to set the end stage (indicated by the *Sustain/Length* LEDs).

Using ← and → without holding *Start* or *End* will shift the entire sequence through the stages without changing its length.

5.1.3 Quantiser

Pressing the *Quantiser* button repeatedly (or holding it down and pressing ← and →) will cycle through the available musical scales, with the LEDs representing which keys on the keyboard that the notes will 'snap' to.

Holding down the *Quantiser* button and pressing *Reset* cycles back to the start of the scale list which turns off quantisation.

The available musical scales are as follows:

- Chromatic
- Major
- Harmonic Minor
- Melodic Minor
- Aeolian
- Dorian
- Phrygian
- Lydian
- Mixolydian
- Pentatonic Major
- Pentatonic Minor
- Japanese
- Octaves
- Major Triad
- Minor Triad
- Minor 7th
- Major 7th
- Dominant 7th
- Diminished 7th

5.1.4 Sustain

Holding down the *Sustain* button and using ← and → sets a specific stage to hold (sustain) its output CV level for as long as the input trigger/gate remains high (>1V). *Sustain* only applies to *Env* mode and cannot be set for *Loop* or *Step* modes.

5.1.5 Reset

Pressing the *Reset* button immediately resets the sequence to the first stage in *Env* and *Loop* modes, or resets the sequence on the next received trigger in *Step* mode.

5.1.6 Output Range (+/-)

Pressing the +/- button will toggle the output voltage range between Unipolar (0-5V, LED lit up) and Bipolar (±5V, LED off) modes, and pressing and holding it will set the range to Unipolar (0-2.5V, LED flashing). **TIP:** The 'half-range' Unipolar 0-2.5V setting is useful when you want more accurate *Step* sequences.

5.1.7 EOC (End of Cycle)

Pressing the *EOC* (End of Cycle) button will enable/disable a trigger output (200ms) every time one of the selected slope's stages ends (indicated by the associated LED). If multiple slopes have *EOC* turned on, the output will trigger when any stage of any enabled slope ends.

5.1.8 EOS (End of Slope)

Pressing the *EOS* (End of Slope) button will enable/disable a trigger (200ms) every time the last stage of the selected slope ends (indicated by the associated LED). If multiple slopes have *EOS* turned on, the output will trigger when the last stage of any enabled slope ends.

NOTE: Any individual slope can be reinitialised by pressing *Slope + Type + Reset* simultaneously.

5.2 Stages



Each stage has 3 controls, and all slopes share their values.

5.2.1 Level Slider

Pushing a stage's associated *Level* slider up will increase the maximum output CV it will reach, and pulling it down will decrease it. The actual voltage will also depend on the output range (+/-) set for the slope.

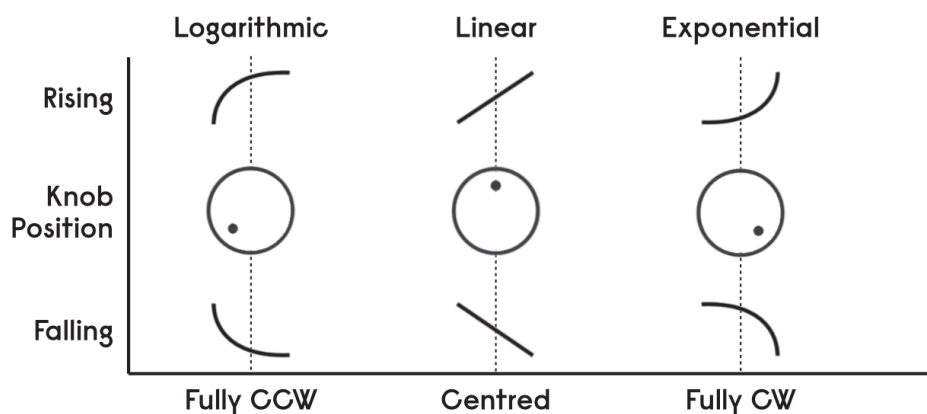
5.2.2 Time

Turning a stage's associated *Time* knob clockwise will increase the amount of time the stage will take to reach its set destination *Level*, up to a maximum of approx 15 seconds. Turning it anticlockwise will reduce the time to a minimum of approx 1-2ms. At 12 o'clock the time is approx 4.5ms.

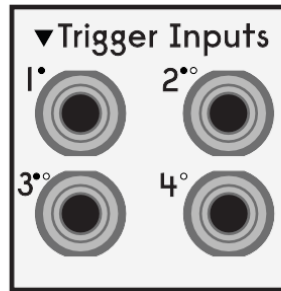
5.2.3 Curve

Turning a stage's associated *Curve* knob from fully anticlockwise to 12 o'clock to fully clockwise will change the shape of the curve the output CV takes to reach its set level, varying from logarithmic to linear to exponential.

TIP: Logarithmic and Exponential modes can be used to achieve natural sounding crossfades when modulating the volume of an audio source.



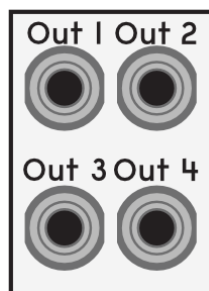
5.3 Trigger Inputs



Sending a trigger or gate above 1V to any of the trigger input jacks (*In 1*, *In 2* etc) will start a slope set to *Env* mode, advance a *Step* sequence to the next stage, or reset a *Loop* back to the first stage.

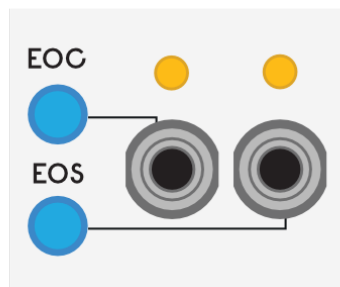
Each trigger input is 'normalled' to the next, so a trigger patched into input 1 will also trigger the other 3 slopes if their trigger inputs aren't patched. The normalling is interrupted and continues from the patched input when one is plugged in e.g. if inputs 1 and 3 are patched, 1 will normal to 2 and 3 will normal to 4.

5.4 Slope Outputs



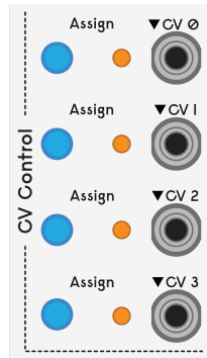
The current level of each of the four slopes is produced by its associated CV output with a voltage depending on the set output range (+/-).

5.5 Trigger Outputs



Optional trigger outputs (5V) produced by any slope with *EOC* or *EOS* turned on. See the *EOC* and *EOS* sections above for how these work.

5.6 CV Assignment and Controls



As well as being controlled directly, parameters can also be automated via any of the 4 CV inputs. Holding down a CV input's *Assign* button will turn on the LEDs for any parameters it is assigned to in the currently selected slope to allow the currently assigned modulation to be checked quickly.

5.6.1 Stage Level

To assign a CV input to a stage's *Level*, hold down the CV input's associated *Assign* button and push the stage's *Level* slider up. The LED on the slider will light up to indicate that it has been assigned. To un-assign the *Level* parameter, hold down the *Assign* button and pull the slider down, and the LED will switch off.

5.6.2 Stage Time

To assign a CV input to a stage's *Time*, hold down the CV input's associated *Assign* button and turn the stage's *Time* knob clockwise. The stage's *Sustain/Length* LED will light up to indicate that it has been assigned. To un-assign the *Time* parameter, hold down the *Assign* button and turn the knob anticlockwise, and the LED will switch off.

5.6.3 Reset

To assign a CV input (trigger/gate) to a stage's *Reset* control, hold down the CV input's associated *Assign* button and then press the *Reset* button. The *Reset* LED will light up to indicate that it has been assigned.

5.6.4 Quantiser

To assign a CV input (trigger/gate) to a slope's *Quantiser* scale, hold down the CV input's *Assign* button and then press the *Quantiser* button. The first *Quantiser* LED will light up to indicate that it has been assigned.

5.7 AXON-1 & AXON-2

The optional AXON expander modules provide additional CV inputs for the QUAID GIGASLOPE. To assign an additional input to a parameter, press the associated *Assign* button on the expander and move a control on the module in the same way as you would to assign a built in CV input.

See Appendix for setup and connection info. Only a single AXON is supported per QUAID GIGASLOPE.

6 LIMITED WARRANTY

From the date of manufacture this device is guaranteed for a period of 2 years against any manufacturing or material defects. Any such defects will be repaired or replaced at the discretion of ALM. This does not apply to:

- Physical damage arising from mistreatment (i.e. dropping, submerging etc).
- Damage caused by incorrect power connections.
- Overexposure to heat or direct sunlight.
- Damage caused by inappropriate or mis-use including physical 'modding'.
- Use of incorrect or unofficial firmware.

No responsibility is implied or accepted for harm to person or apparatus caused through operation of this product. By using this product you agree to these terms

7 SUPPORT

For the latest news, additional info, downloads and firmware updates please visit the ALM website at busycircuits.com and follow @busycircuits on [Instagram](https://www.instagram.com/busycircuits).

Questions? Email help@busycircuits.com. [dblfloatfix](https://github.com/dblfloatfix)



8 APPENDIX

8.1 Firmware Update

1. With the unit unpowered, connect a USB cable from the port at the bottom left side of the PCB to a computer.
2. The QUAID GIGASLOPE will appear as a standard removable storage device.
3. Copy a valid firmware file to the root directory to update.
4. The module will automatically eject once the update has completed and is ready to use powered normally (any 'unmount' errors from the computer can be safely ignored).

8.2 V/Oct Calibration

NOTE: The module ships fully calibrated.

You will need a voltmeter or scope, ideally accurate to 1mV.

1. Power on the QUAID GIGASLOPE with the Left button held down to enter calibration. The *Env* Type LED will light up.
2. Plug the voltmeter into Out 1.
3. Use the Start/End buttons as the coarse adjustment and ← and → as the fine adjustment controls to tune the output as close to 0V as possible.
4. Press the Type button (the Type LED should move along to Loop), use the same buttons to tune the output to +5V.
5. Press the Type button (the Type LED should move along to Step), use the same buttons to tune the output to -5V.
6. Press the Slope button to move on to output 2.
7. Plug the voltmeter into output 2.
8. Repeat steps 3-6 until all 4 outputs have been calibrated.
9. At any point you can go back a step by cycling back through the Slope and Type buttons.
10. When done power cycle and enjoy your calibrated QUAID GIGASLOPE.

8.3 Factory Reset

The entire module can be reset (all user saved settings will be removed) by holding the End button down while powering on the module.

8.4 AXON-1

The AXON-1 plugs into the small horizontal 6 pin connector marked 'EXPAND' on the rear of the module. This will add 4 extra CV inputs. Only a single connected AXON (1 or 2) is supported.

8.5 AXON-2

The AXON-2 plugs into the small horizontal 6 pin connector marked 'EXPAND' on the rear of the module. Like the AXON-1, this will add 4 extra CV inputs but with additional offset controls. The two buttons on the AXON-2 act as follows: *A* Functions the same as the Slope button. *B* Functions the same as the Reset button.