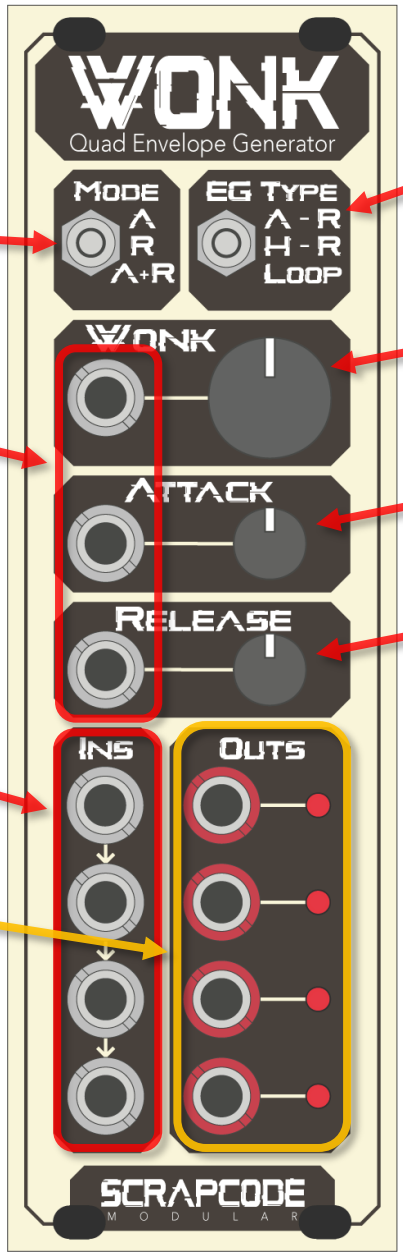
WONK
Quad Envelope Generator

This module generates four envelopes with shared ***Attack*** and ***Release*** times, which can be further modified using the global ***Wonk*** parameter.

More ***Wonk*** will make the top envelopes longer and the bottom envelopes shorter.
Less ***Wonk*** will make the top envelopes shorter and the bottom envelopes longer.

All three parameters can be controlled using both the knobs and CV inputs simultaneously.



1 – **Mode Select Switch**

2 – **CV Inputs**

3 – **Trigger Inputs**

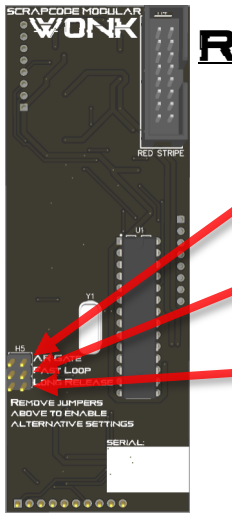
4 – **Envelope Outputs**

5 – **EG Type Select Switch**

6 – **Wonk Controls**

7 – **Attack Controls**

8 – **Release Controls**



Rear of Module

9 – **AR Gate Jumper**

10 – **Fast Loop Jumper**

11 – **Long Release Jumper**

1 – Mode Select Switch

This sets which parameters are affected by the ***Wonk*** value – ***Attack***, ***Release*** or both.

2 – CV Inputs

If no cable is connected to a jack input, the corresponding knob will sweep through the full range of available values.

If a cable is connected, the full range of available values will be available with an input from -5V to +5V. In this case, the knob will act as a modifier on the inputted signal, ranging from -5V to +5V, with 12 o'clock having no effect.

3 – Trigger Inputs

A rising-edge trigger of 0-3V or greater on these inputs will activate the corresponding envelope. Behaviour is dependent on the current **EG Type** (see 5 – **EG Type Select Switch**).

Each input is normalled from the one above, allowing multiple envelopes to be triggered by a single input. If only the top input has a cable inserted, then all envelopes will be triggered together.

4 – Envelope Outputs

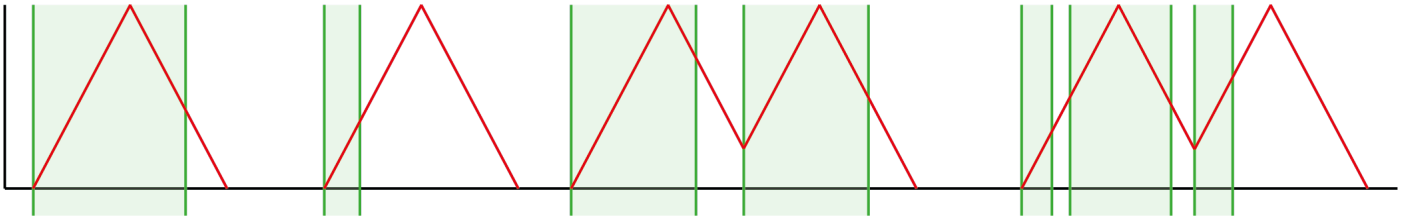
These output linear envelopes with a peak value of 8V. The corresponding LEDs illuminate to give visual feedback.

Note that output jacks are all identified by a red jack nut, and should never be directly connected to one another.

5 – EG Type Select Switch

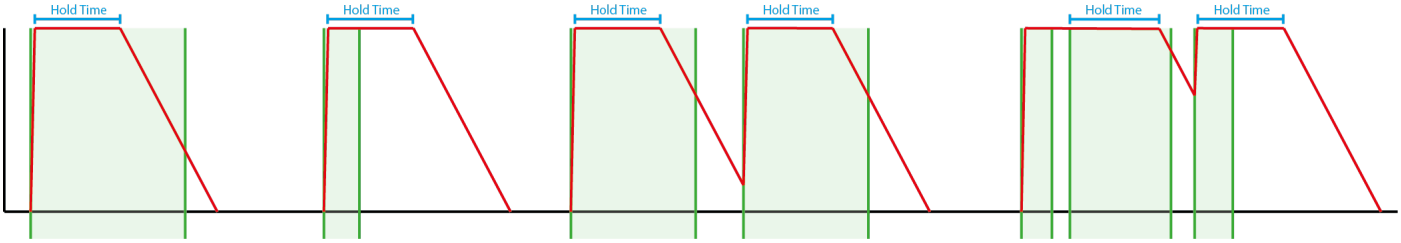
This sets the type of envelope generator which will be used, and affects the behaviour of the **Trigger Inputs**, as well as minimum and maximum ***Attack*** and ***Release*** values.

A - R is a traditional two-stage attack-release envelope. When triggered, it will run the entire attack and release stages and will not be affected by the end of a trigger signal. Additional triggers during the attack stage will have no effect, but during the release stage they will retrigger the envelope.
This behaviour can be modified using the **AR Gate Jumper** (see 9).



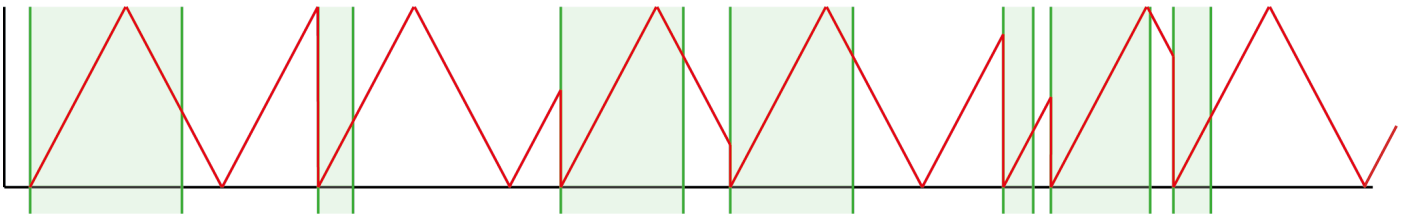
Attack values range from 1ms – 400ms, and ***Release*** values range from 20ms – 1.2s.
The maximum ***Release*** value can be increased using the **Long Release Jumper** (see 11).

H - R is a hold-release envelope with a fixed attack time of 10ms. The ***Attack*** parameter is instead used to determine the hold time. Triggers received during the hold stage will restart the hold timer, and during the release stage they will retrigger the envelope. The end of the trigger signal will have no effect.



Attack values (ie: hold times) range from 10ms – 1.2s, and ***Release*** values range from 20ms – 1.2s.
The maximum ***Release*** value can be increased using the **Long Release Jumper** (see 11).

Loop is a repeating attack-release cycle, with triggers resetting the value to zero and immediately restarting the attack phase.



Both ***Attack*** and ***Release*** values range from 20ms – 4s.
These can be drastically shortened using the **Fast Loop Jumper** (see 10).

6 – Wonk Controls

These determine the value of the ***Wonk*** parameter, which will affect ***Attack*** and/or ***Release*** times depending on the **Mode** and **EG Type**.

With no CV applied and the knob set to 12 o'clock (in the indent), ***Wonk*** will have a value of zero and therefore all envelopes will output with the same ***Attack*** and ***Release*** values.

More ***Wonk*** will make the top three envelopes longer and the bottom envelope shorter.
Less ***Wonk*** will make the top three envelopes shorter and the bottom envelope longer.

The top envelope is always affected the most.

7 – Attack Controls

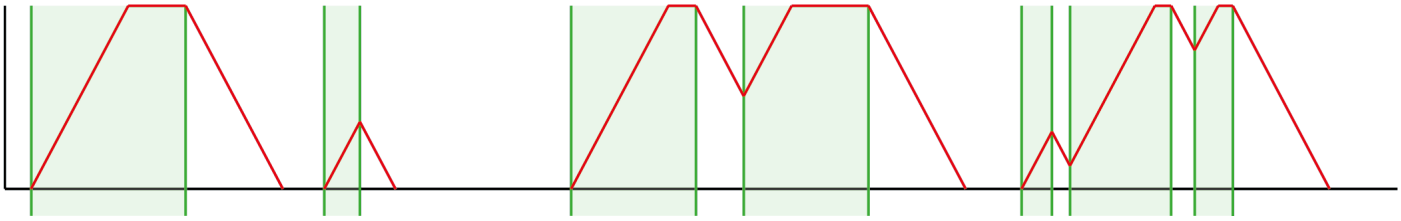
These determine the value of the ***Attack*** time for each envelope before modification by the ***Wonk*** value.

8 – Release Controls

These determine the value of the ***Release*** time for each envelope before modification by the ***Wonk*** value.

9 – AR Gate Jumper

If this jumper is not present when the unit is powered on, the unit will respond to the **Trigger Inputs** as gates rather than triggers when the **EG Type Select Switch** is set to **A - R**.
This will allow envelopes to stay open for differing amounts of time, and is particularly useful when using a manual input method such as a MIDI keyboard or other hands-on controller.



Note that jumper configurations will only be read when the unit is powered on, and that jumpers must not be added or removed while the unit is in operation.

10 – Fast Loop Jumper

If this jumper is not present when the unit is powered on, then ***Attack*** and ***Release*** values will be decreased to a range of 1-20ms when the **EG Type Select Switch** is set to **Loop**.

This will mean that the output is well within the audio range, and each output can be used as an audio source if desired. These outputs contain a lot of digital noise at this rate, meaning they are useful as glitchy noise sources but not are suitable for more conventional, stable oscillator duties.

Note that jumper configurations will only be read when the unit is powered on, and that jumpers must not be added or removed while the unit is in operation.

11 – Long Release Jumper

If this jumper is not present when the unit is powered on, then the range of ***Release*** values will be increased to 100ms – 8s when the **EG Type Select Switch** is set to **A - R** or **H - R**.

Note that jumper configurations will only be read when the unit is powered on, and that jumpers must not be added or removed while the unit is in operation.

Technical Notes

Rack Width	8HP
Rack Depth	44mm (including ribbon connector)
Absolute Maximums	This unit **must not** be subjected to input voltages greater than +12V or below -12V.
Power Requirements	Power is to be supplied on a 16-pin ribbon cable, as per the Eurorack standard. When installing, the power connector **must** be oriented with the -12V (usually signified by a red stripe) at the correct end, as shown by the labelling on the unit.
+5V Current Draw	18mA
+12V Current Draw	18mA
-12V Current Draw	4mA