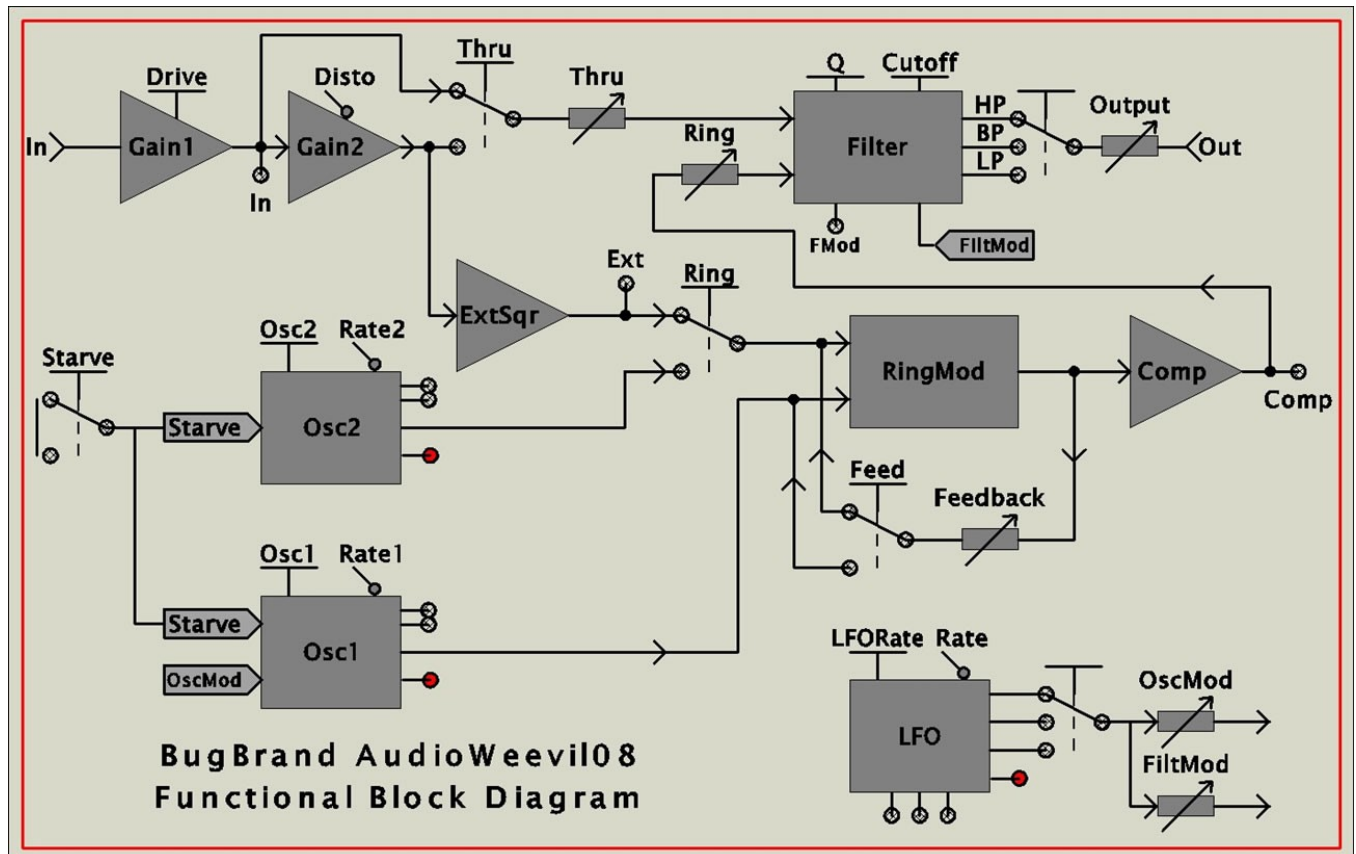# BugBrand AudioWeevil08

Thankyou for choosing an AudioWeevil!

There are a multitude of sounds hidden within – but please read this manual first to get an understanding of the internal signal paths. While I hope the layout will quickly become natural to you, there are likely to be some surprises in store!

BugBrand AudioWeevil08
Functional Block Diagram

External Input - the external 1/4" jack accepts a wide range of signals from low-level (eg guitar) up to line-level. The input section offers two boost stages based on a CMOS overdrive design ranging from clean to heavy-crunching dependent on the input level, *Drive* setting and the *Thru* mode switch. The *Gain1* stage is a clean driver useful for cleanly amplifying the input signal, while the *Gain2* stage is much higher gain, resulting in driven sounds. There is also the *Disto* switch which adds in a fixed lo-pass filter across Gain2 to give darker drive results.

The input also generates a square-wave for use in the Weevil section – this always goes through both gain stages before entering a Squarer (*ExtSqr*). The results depend on external signal level (eg set on an external mixing desk) combined with the input Drive control – experiment for best results! Note – due to the gain nature of the input there can often be some Weevil-y signal bleed even with the Ring mix totally down. See end note for more details.

Source Mixer - you can blend the audio input Thru signal and the Ring signal pre-filter.

Wasp Filter – this powerful filter design is based on the classic EDP Wasp synth core and offers variable Q (resonance) and multimode outputs of Low / Band / High pass. The filter cutoff frequency is also modulated by the LFO.

The Weevil Heart – the core of all Weevils is two (or more) lofi squarewave oscillators that are quasi-ringmodulated together. This type of circuit reacts in wonderful ways when starved of power, so the first control in the section is *Starve* – turn it fully clockwise for full-power. Coupled with this dial is the *Stable* switch – when switched on this adds a smoothing capacitor to the power starvation resulting in different behaviours. Each Osc has a tuning dial and a range select switch - tuning and stability changes when power is starved and the Oscs can actually drop right out with various settings.

The *Ring* switch selects whether the RingMod receives the output of Osc2 or the Squared audio input signal. Note that the level of the audio input and the starvation setting will really influence the resulting sounds.

Around the RingMod circuit is a feedback loop with a three-way *Feed* switch. Generally the switch is in the middle position (Off). Note – when combined with power starvation the Feedback control can often completely kill the sound! Only small amounts of starvation should be used when Feedback is switched in.

The final stage of the Weevil-core is *Comp* – a comparator. When the power is starved the amplitude of the waveforms drops – this would result in quieter sounds, so the comparator is used to turn the output waves back into strong, pure squarewaves.

Output - the output is a standard 1/4" mono jack following the *Output* level control.

Modulation LFO – the vari-speed Low Frequency Oscillator is used to modulate Osc1 and/or the Filter cutoff freq. It has two switchable ranges, a three-way switch for selecting Ramp / Tri / Sawtooth waveforms and variable depth controls for modulating Osc1 or the Filter.

Touch Plate - the integrated front-panel touchplate opens up chaotic cross-modulation possibilities controlled by lickety-touchy. Touching combinations of pads will cause bizarre flows dependent on your resistance (how damp your fingers are – try licking the tips), how hard you press and what combinations are touched. This is an area to practice!

Power – due to the use of a touch-panel, power is from batteries only - do not modify this to use plug-in power! The box's current draw is roughly 40mA at most times, so a decent set of alkaline batteries should last over 40hours. Rechargeable batteries can also be used.

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Note on Signal Bleed when just processing external audio through the filter – Weevil-sound bleedthrough can be minimised by altering the settings of the Weevil section. Try turning the Starve dial right down, Stable switched On, the Oscs running at Lo rate and Feedback fully on.

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If you have questions or comments – get in touch via email: tom@bugbrand.co.uk

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