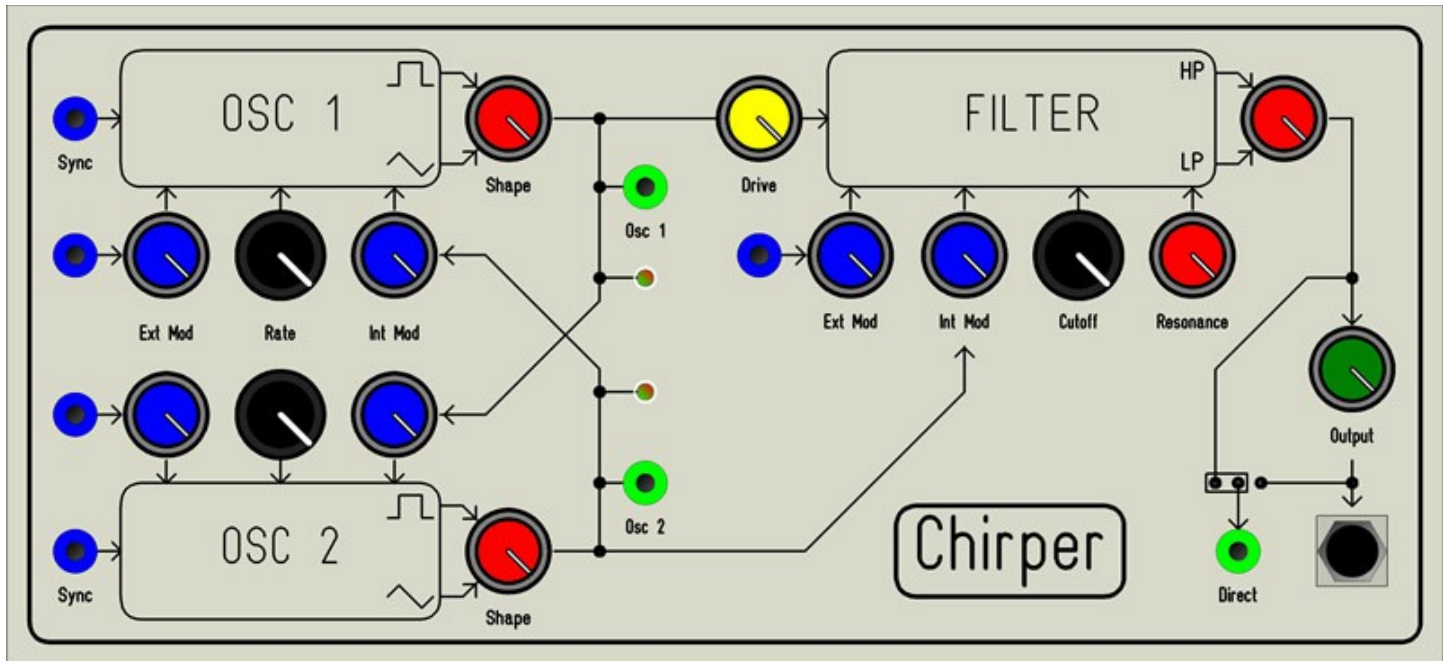


Chirper



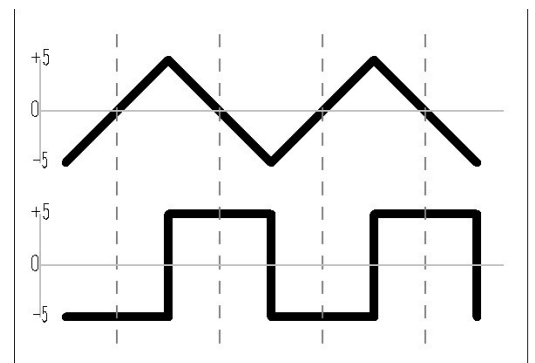
Chirper is built around three simple analogue elements that are internally pre-configured and opened up with 4mm banana patch points.

Oscillators:

Two exponentially controlled Triangle-Core Oscillators with outputs sweepable from Triangle to Square.
Range approx 0.15Hz to 100kHz with +/-5V amplitude.

The Sync input works from any signal above approx 1V and resets the Triangle wave to 0V (noting phase relationship to Square).

Internal Modulation cross-couples the oscillators. External Modulation is approximate 1V/Oct when turned fully clockwise, tracking over a few octaves.



Filter:

A 12dB/Oct State-Variable Filter with exponential control and resonance up to self-oscillation.
The output can be swept from Low-pass to High-pass and covers approx 10Hz to 20kHz.

Oscillator 1 (Left) feeds the filter's audio input via the Drive control, while Oscillator 2 (Right) modulates the filter cutoff via the Internal Modulation control. External Modulation is approximate 1V/Oct when turned fully clockwise, tracking over a few octaves.

The 1/4" Mono Output is Impedance Balanced.

Power

Chirper runs from a +/-15V bipolar supply (approx 55mA per side).

The standalone unit comes housed in a 5FW (Frac Width) enclosure with internal DCDC converter. This is supplied with a universal (90-264V AC) power supply which provides 12VDC @ 300mA on a centre positive 2.1mm DC plug.

Chirper can alternatively fit into one of the larger BugBrand Powered Frames.

Interfacing with Banana Sockets

As 4mm banana cables do not carry a 0V connection, you must join Chirper's 0V (Black banana on the rear panel) to 0V of the CV source.

- Banana to Banana – external systems should have a 0V banana socket (typically located on the PSU) Connect a banana cable between the 0V points to establish a common 0V and then patch freely.
- Banana to Jack – the first connection is made with a two wire cable assembly. The Black cable (from Jack Sleeve) plugs to Chirper's 0V socket. The White cable (from Jack Tip) then plugs to the CV destination. Further connections from the same piece of equipment can then be made with one wire cables.

All banana inputs have impedance 100k Ω .

All banana outputs have impedance 470 Ω .

Internal Adjustments & Test Points

The scaling of Oscillator and Filter tracking can be adjusted if required with internal trimpots. Chirper should be switched on to warm up for approx 30 minutes before adjustment.

Note that none of the exponential converters have temperature compensation.

The Direct output can be selected via jumper as Pre or Post the Output level control (set Pre as standard).

Several test points are marked on the circuit for expansion/experimentation:

- Tri1, Sqr1, Tri2, Sqr2 – direct Oscillator waveform outputs. Use a 470 Ω series resistor.
- LP, BP, HP – direct Filter outputs (Low/Band/High-pass). Use a 470 Ω series resistor.
- FIN – Filter audio input. Add a 30k Ω resistor in position R71 (0805smd).
- FXCV – Filter modulation input. Add a 100k Ω resistor in position R74 (0805smd)
- O1CV – Osc 1 modulation input. Add a 100k Ω resistor in position R72 (0805smd)
- O1CV1 (should read O2CV) – Osc 2 modulation input. Add a 100k Ω resistor in position R73 (0805smd)

Guarantee

Chirper comes with a 2 year 'reasonable' warranty. If any mechanical or electronic failure occurs within the period, I will repair the fault free of charge. This excludes failure from maltreatment or modification and any cosmetic degradation. Contact should first be made via email to discuss the problem. Shipping to return the device is paid by the user and I cover return shipping. Failures that are not covered by this guarantee may be fixed at standard rates.

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