# UTL3 – Dual VCA

Rev1 – Jan2010

Overview:
The UTL3 features two independent Voltage Controlled Amplifiers (VCAs) each with response switchable from Linear to Exponential.

Controls:
1. **Audio Input1** – DC-coupled input for the signal to be processed by VCA1 (typical +/-5v).
2. **Control CV1** – Amplitude Modulation input for VCA1 with depth control (Mod1). Requires a 10v PtoP signal for full range.
3. **Audio Input2** – DC-coupled input for the signal to be processed by VCA2 (typical +/-5v).
4. **Control CV2** – Amplitude Modulation input for VCA2 with depth control (Mod2). Requires a 10v PtoP signal for full range.
5. **VCA1 Response** – Switchable from Linear to Exponential response.
6. **VCA Output1**
7. **VCA1 Initial Control** – Manual Amplification control for VCA1 from fully closed to fully open (unity gain).
8. **Amplitude Modulation Depth 1** – To adjust the depth of modulation from the CV1 input.
9. **VCA2 Initial Control** – Manual Amplification control for VCA2 from fully closed to fully open (unity gain).
10. **Amplitude Modulation Depth 2** – To adjust the depth of modulation from the CV2 input.
11. **VCA2 Response** – Switchable from Linear to Exponential response.
12. **VCA Output2**
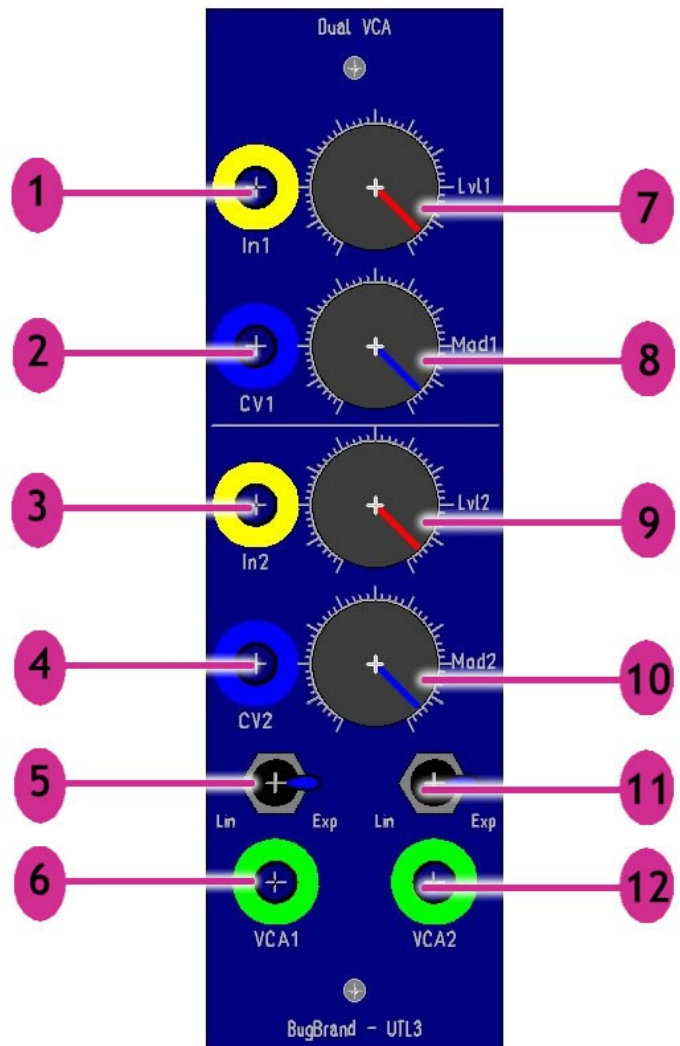
Notes
- The modulation inputs require a 10v Peak-to-Peak signal for full range (lower voltage ranges must be amplified before use). Be aware of the type of modulation signal being applied and how this will affect the Initial control setting – for bipolar +/-5v control signals the Initial control should generally be set to about half-way for full deflection, while for unipolar 0-10v control signals the Initial control should be set to zero (In both cases the Mod control depth should be set to full).

Adjustments
- Each VCA has an Offset Trimmer to null any DC offset (setup before shipping). There are two possible ways to adjust the setting – I) apply a +/-5v square-wave modulation signal to the CV input, turn the Initial control to midway and the Mod control to full. Leave the Input socket disconnected. When correctly trimmed there should be minimal

control feed-through, so slowly adjust the respective trimmer and listen for the control signal feed-through becoming less and less. 2) use a volt-meter to measure the output offset and trim to 0v. Leave the Input disconnected (or connect to ground/0v) and do not apply a modulation signal. Turn the Initial control to full and the Mod control to zero. Slowly adjust the respective trimmer until the output measures exactly 0v.

Specifications
Current Draw: +ve 10mA, -ve 10mA (max)
Module Width: 1 Frac-Width (1.5")