

# Cascade

## Discrete VCA Compressor

**Attack**  
Switchable attack times — how fast the compressor reacts to the signal;  
Rotary switch: 0.1 / 0.3 / 1 / 3 / 10 / 30 ms;

**Release**  
Switchable release times — how fast the gain returns to normal;  
Rotary switch: 0.1 / 0.2 / 0.4 / 0.8 / 1.6 s / Auto;

**In (Bypass)**  
Activates a channels or switches to relay-bypass.

**Ratio**  
Selects the compression ratio;  
Rotary switch: 1.5:1 / 2:1 / 4:1 / 10:1;

**Threshold**  
Defines the level at which compression begins, from -20 dB to +10 dB;

**Sidechain Highpass**  
Sidechain high-pass filter to avoid low-frequency triggering;  
Selectable frequencies:  
Off, 60, 120, 180 Hz;

**dBu Meter**  
Indicates the output signal level independently for the left and right channels, ranging from -12 to +18 dBu.

**Make Up Gain**  
Restores level lost during compression, from 0 to +20 dB;

**Balance (Dry/Wet)**  
Blend between uncompressed (dry) and compressed (wet) signal, from 0% to 100%;

**Gain Reduction**  
Shows the amount of gain being reduced, from -1 to -20 dB;

**External Sidechain**  
Allows routing of an external audio signal into the compressor's sidechain for ducking or advanced dynamics control;

**SC In & Thru**  
Input for external sidechain signal & parallel output for routing further;

**Inputs & Outputs**  
Route the signal through the device. It supports normalization of the left channel to the right, ensuring compatibility with mono signals;

**Design Inspiration:** Inspired by legendary VCA compressors from the 1980s, CASCADE combines that familiar punchy response with refined modern control using our custom discrete VCA block and fully discrete analog signal path. The result is a flexible dynamics tool capable of handling everything from subtle bus compression to aggressive transient shaping;

**Advanced Features:** This compressor uses a fully discrete VCA cell for transparent dynamic processing with musical THD characteristics. The internal sidechain circuit includes a switchable high-pass filter to prevent over-compression from bass content. Relay bypass preserves the original signal path, while the blend control enables instant parallel compression — without external routing;