

# Audio Damage ADM12 Neuron

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Neuron is an FM-based all-in-one drum voice module suitable for all types of electronic music. From big Autechre-style FM hits to huge digital hardcore kicks to tight x0x snare drums, Neuron can make a broad range of percussion sounds with ease.

Starting with super fast envelopes internally curved for percussion sounds, we add a carrier wave that is a single-cycle sample straight from the PCB of a 909's kick oscillator. We then add pure sine modulation, analog-modelled soft saturation, digital distortion, and a true random-number-generator for white noise.

The result is a drum module that is both easy to use and incredibly versatile. Watch the overview video below to get an idea of what Neuron sounds like.

Watch [this YouTube video](#) to get an overview of the module's capabilities!

## Features

- Neuron is a DSP-based module that runs at 48kHz sample rate and 24 bit depth, via a high quality Cirrus-Logic codec.
- Two-operator FM synth voice tuned for percussion use.
- Carrier waveform is a single-cycle sample of a 909 kick's main oscillator, taken from the board of a real 909 via a studio-grade Mytek A/D convertor. Tunable from 20Hz to 1kHz.
- Modulator waveform is a pure sine wave, tunable from 5Hz to 1kHz.
- Two ultra-fast percussion-curved internal envelopes for pitch mod and VCA.

- Soft saturation/overdrive and distortion control for hardcore sounds.
- Internal noise generator for snare and cymbal sounds.
- Trigger input that fires the internal envelopes on a 1V edge detection. Can be triggered up to low audio rates. (Approx. 60Hz.)
- Accent and Choke inputs allow further time-based control over the output.
- Every control has a CV input that accepts +/-5V. Panel controls are sampled at low audio rates (approximately 35Hz), and have further internal lag processing for smooth parameter changes.
- USB port (on the backplane) for easy firmware updates.
- High-quality 100% Made In The USA construction, including panel-bolted 100,000-cycle BI potentiometers and custom stamped Rogan knobs.
- Power draw is 50mA from the +12V rail and 9mA from the -12V rail. This module has an on-board regulator and does not require +5V. Module width is 12HP. Module depth is 25mm.