HEXINVERTER. NET

presents:

batteryACID

I Dream of Wires Edition

USER MANUAL v1.0

Introduction

First and foremost, **thank you** for your interest in/purchase of **batteryACID: I Dream of Wires (IDOW) Edition**! This special module was custom designed to act as a source of fundraising to aid in the completion of the much-anticipated modular synthesis documentary project, **I Dream of Wires**. The majority of the proceeds from module sales go directly towards funding the film's completion.

batteryACID is a voltage controlled analogue distortion and compression module for musical synthesis. It uses a distortion topology inspired by that of the infamous and vintage MXR Distortion Plus pedal which acid house musicians have taken a liking to using. This module can be utilised for processing synthesizers, drum machines and virtually anything else you can think of for distortion and/or compression effect. The circuit has been designed such that adjustment should allow for virtually any level of signal to be processed, be it lower voltage line level signals or comparatively large level signals like that directly from an analogue voltage controlled oscillator.

The module itself is very unique looking with a **black anodised aluminum finish** instead of the typical plain aluminum finish seen on most contemporary eurorack modules. The design's unique nature is further identified by using **white silkscreen instead of the common metalphoto finish** eurorack uses. Use of this slightly esoteric graphic medium is a homage to the panel creation processes of the classic large format synthesizers of yesteryear!

There are certainly other brands of distortion out there, but, I think after you hear batteryACID you will agree that they all have their own unique sound signature!

While **hexinverter.net** is responsible for the circuit design and module concept, this module is ultimately a joint effort from everyone involved: **Jason Amm, the producer of I Dream of Wires** and musician himself, contributed greatly to the project with panel conceptualisation and direction throughout. The module would not be its beautiful form it is today without his input. **Hannes Pasqualini of papernoise.net** produced an unimaginably stellar job with the panel graphic design. I highly recommend his top-notch graphic design and illustration skills for your own ventures! **Livewire Electronics** helped us find the right knobs for the module, and, **intellijel designs Inc.** offered to oversee manufacturing of this project at a facility near their home base in BC, Canada.

A huge thanks to everyone involved from myself and the I Dream of Wires team, Robert and Jason! I am truly honoured to be a part of this fantastic documentary project and it is my hope that batteryACID: IDOW Edition proves to be a useful weapon in your creative arsenal.

Keep on wiggling!

Stacy Gaudreau
hexinverter.net Electronics

Features and Specifications

Technical Specifications

- 16HP eurorack format module
- Requires eurorack standard +/-12V supply
- Consumes approximately 25mA of current @ +/-12V
- 30mm depth
- CV input accepts -12V to +12V voltage control

Base Features

- Voltage controlled all-analogue distortion effect
- Onboard compressor for automatic gain correction (the signal volume would otherwise vary drastically with distortion CV modulation)
- Designed anew specifically for musical synthesis and drum processing
- Functions as a basic standalone hardware compressor when the distortion effect is switched off

Analogue Distortion with Voltage Control

- A new take on the classic diode overdrive distortion circuit found in many infamous guitar pedals of the last half-century
- Fully analogue voltage control of the distortion amount parameter
- The high-pass effect (ie: bass frequency loss) commonly experienced with using guitar pedals to process synths and drums has been reduced
- Effect wet/dry mix control for dialing in the perfect amount of distortion
- Attenuators for input/output levels
- Bypassing of the distortion effect is possible via the panel switch

Onboard Compressor

- Can be disabled easily via the switch on the panel
- Compressor Threshold, Ratio and Gain parameter controls for locking in the desired dynamics after distortion
- Functions as a basic analogue hardware compressor when distortion is disabled

Control Descriptions

Manually adjust the amount of distortion from analogue warmth to complete insanity with the DISTORTION control!

The THRESHOLD parameter adjusts the volume at which the compression kicks in. Adjust this to taste, depending on the level of input signal.

The RATIO control controls the compression ratio, or amount of compression when the compressor is active.

Adjust the compressor's amount of make-up gain with the GAIN control.

Control the wet/dry mix of the signal with the MIX control. Turn the control clockwise to increase the amount of effect on the signal.

DISTORTION

IDOW

batteryACID

I Dream of Wires Edition

THRESHOLD

RATIO

Adjust the final volume at the OUT jack

IN LVL   MIX   CV LVL   GAIN   OUT LVL

off ▮ on   off ▮ on

IN   DIST   CV   COMP   OUT

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Plug in a signal at the IN jack and adjust the input level.

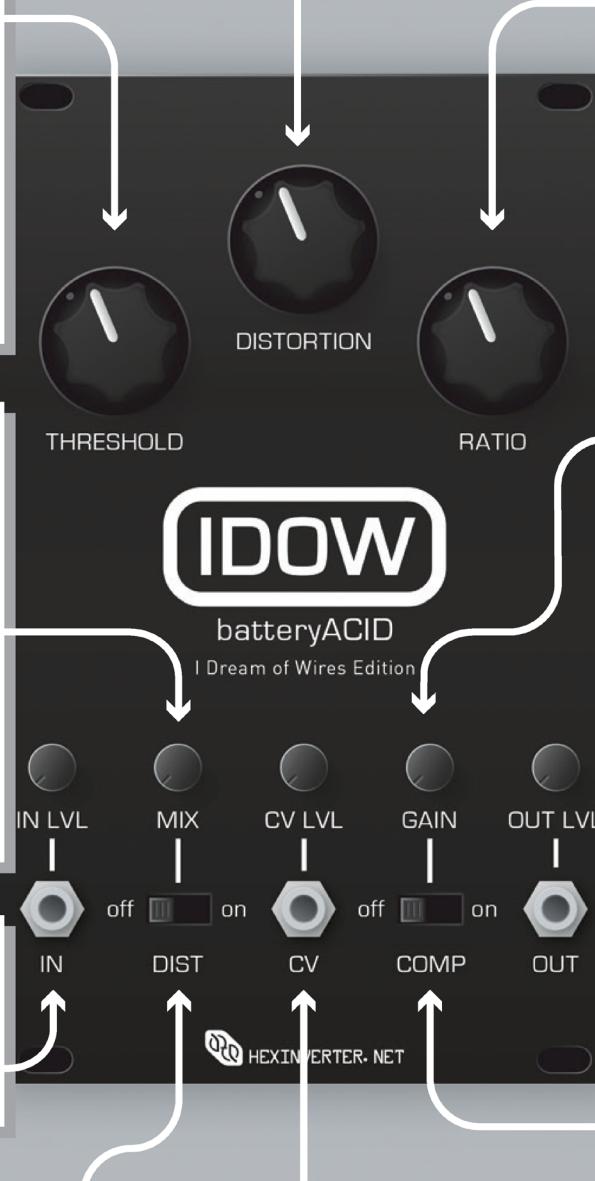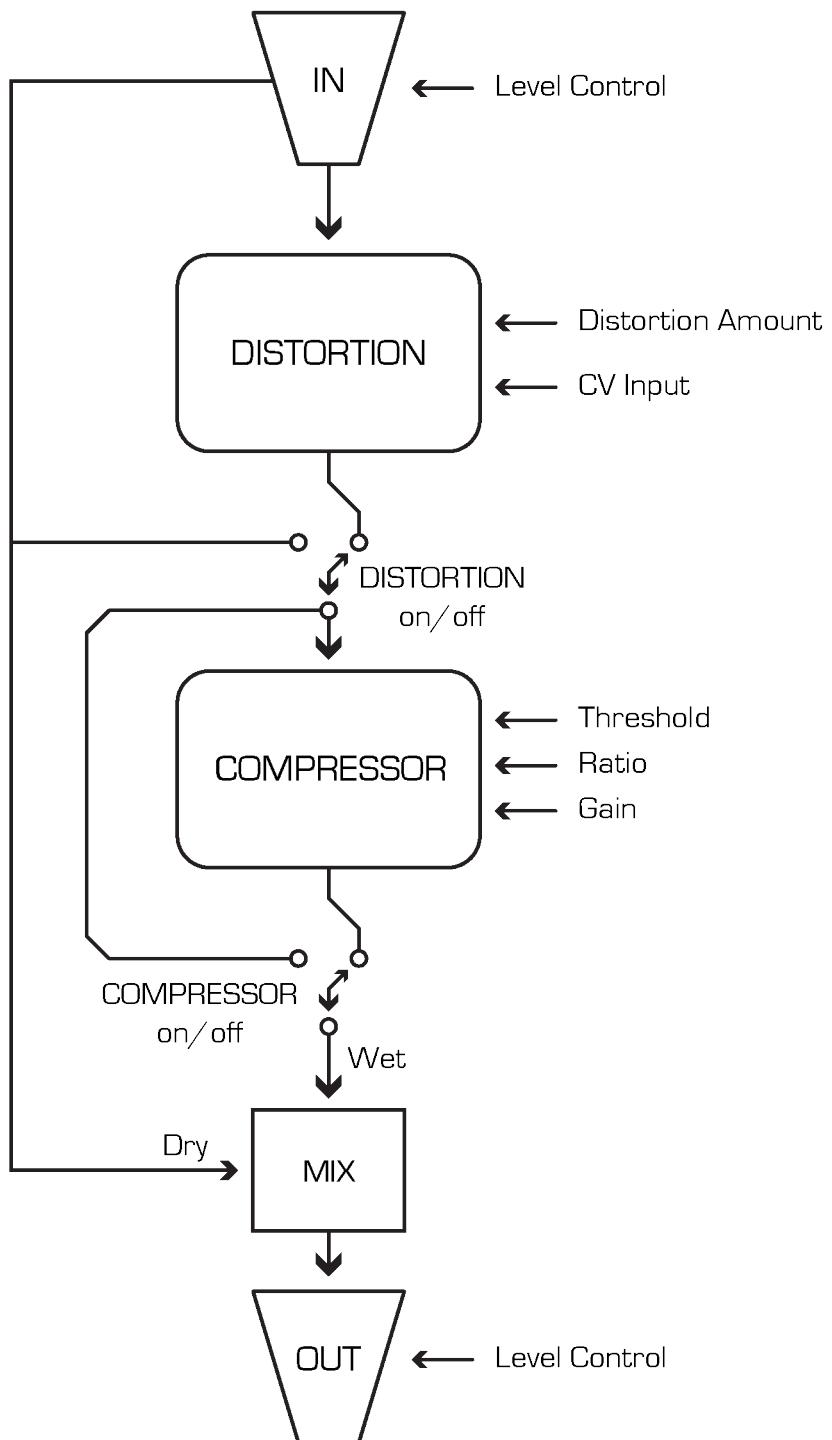Enable the compressor for automatic gain correction when using distortion CV, or use the compressor on its own as an audio effect.

Enable the distortion effect with the DIST switch.

Plug in a voltage source to modulate the amount of distortion

Signal Chain Flowchart

This flowchart is designer to help you to understand exactly how the signal is routed within batteryACID. It should prove useful when using batteryACID in complex patches when you want precise control over how batteryACID works.

IN ← Level Control

DISTORTION ← Distortion Amount
← CV Input

DISTORTION on/off

COMPRESSOR ← Threshold
← Ratio
← Gain

COMPRESSOR on/off

Wet

Dry

MIX

OUT ← Level Control

Some Patch Ideas and Uses

Not quite sure where to begin with batteryACID: IDOW Edition? Well, my suggestion is to **experiment**! batteryACID can process almost any sort of audio input -- synthesizers, guitars, drum machines, vocals, line level devices, you name it! But, if you need some inspiration, try some of these ideas out...

Patch Idea 1: The Acid Bassline w/ sequenced distortion

Patch in a bassline synthesizer to batteryACID with high resonance. A x0xb0x or TB-303 is the king of acid basslines of course, but modular synthesizers sound great too! Use a moderately high amount of distortion. Now, patch the same **sequence's pitch CV output to batteryACID's CV input and adjust the amount of distortion modulation to taste**. This is similar to the classic patch where you modulate a filter's cutoff with the same CV source as the sound's pitch, except you're modulating distortion instead, for a **very intense effect**! Higher pitch notes will have more distortion, increasing the acidity of higher resonant notes even more-so!

Patch Idea 2: Gnarly Amplitude Modulation

Patch an audio source you would like to amplitude modulate into batteryACID's audio input. Now, select a noise source from your system and patch this into batteryACID's CV input. **For best results, use a pitched noise source** like the hexinverter.net vcNOIZ or Jupiter Storm so you can experiment with altering the rate of noise used as the modulator. Adjust the CV and distortion amounts to taste. While you can achieve an amplitude modulation effect with a plain VCA, you will not get the distortion effect that batteryACID provives as well. Some very interesting timbres can be realised with this method! **Vocals are especially fun to modulate in this manner.**

Patch Idea 3: The Harmonic Drone

Everyone loves drones! Plain ol' evolving drones are fantastic on their own or with some subtle filtering, but, **nothing makes them shine quite like some analogue distortion**! Patch up a drone sound using 2 or more oscillators and allow the drone to free run. Use triangle, square or sine waves for the drone. Each one will result in subtly different tones. Now, patch this drone into batteryACID and adjust distortion to taste. Adding distortion will generate a lot of harmonics which generally quite pleasing to the ear. **Try mixing in some distortion CV modulation now!** Use a slow morphing triangle LFO to apply gentle modulation to the distortion amount. This same triangle LFO could be used to slowly morph one of the drone sound's oscillator's pitch for an even more dynamic drone sound! This will create a slowly evolving and morphing drone.