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Someone who started modular synths. I'm a legacy engineer.

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\$3 Diode clip Distortion-DIY Eurorack Modular Synthesizer

♡ 7



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March 2022, 3 6:01 PM





I made my own diode clip distortion for the modular synthesizer, so it's a memoir.



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[\$3] DIY eurorack modular synth Distortion / simple diode clip type



background

The 45th work of his own modular synth.

So far, I've made a few DSP effect modules myself, but not an analog one yet.

In the future, I would like to challenge the analog effect module. First of all, I decided to create a simple distortion module.



The combination of synthesizers and distortions is often used in techno music.



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Another way, my favorite distortion sound is the combination of strings and on from Prophet 5, like the one I used in YMO's "music plan."

音楽の計画 (2019 Bob I

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PREVIEW



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is of the production

1k Standard 3U 6HP Size

Power Supply: Requires dual 12V power supply $\pm 25\text{mA}$ or less (at +12V)
/ 25mA or less (at -12V).

The current consumption has not been accurately measured, but an
approximate value is estimated from the current consumption indicated by
the regulated power supply.



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Attenuates **ATTN**

input audio. The audio signal of modular synths is generally $5\text{ V} \pm$. On the other hand, in the distortion of the diode clip, the effect begins when the audio signal exceeds $\pm 0.6\text{ V}$.

Therefore, the audio signal must be attenuated to less than $0.6\text{ V} \pm$ before reaching the diode clip circuit.

Since it is possible to attenuate even with the variable resistance of the amplifier amplifier circuit, it is not always necessary to prepare an attenuator.



My homebrew module has a wide voltage range, from a $\pm 1V$ audio signal to a $\pm 5V$ signal, so I added an ATTN function.



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the **DIST**

on. Because it is a simple clip circuit using a diode, when distortion is I, the waveform pile is collapsed, and the overtone increases.

Is the amplification rate of **GAIN**

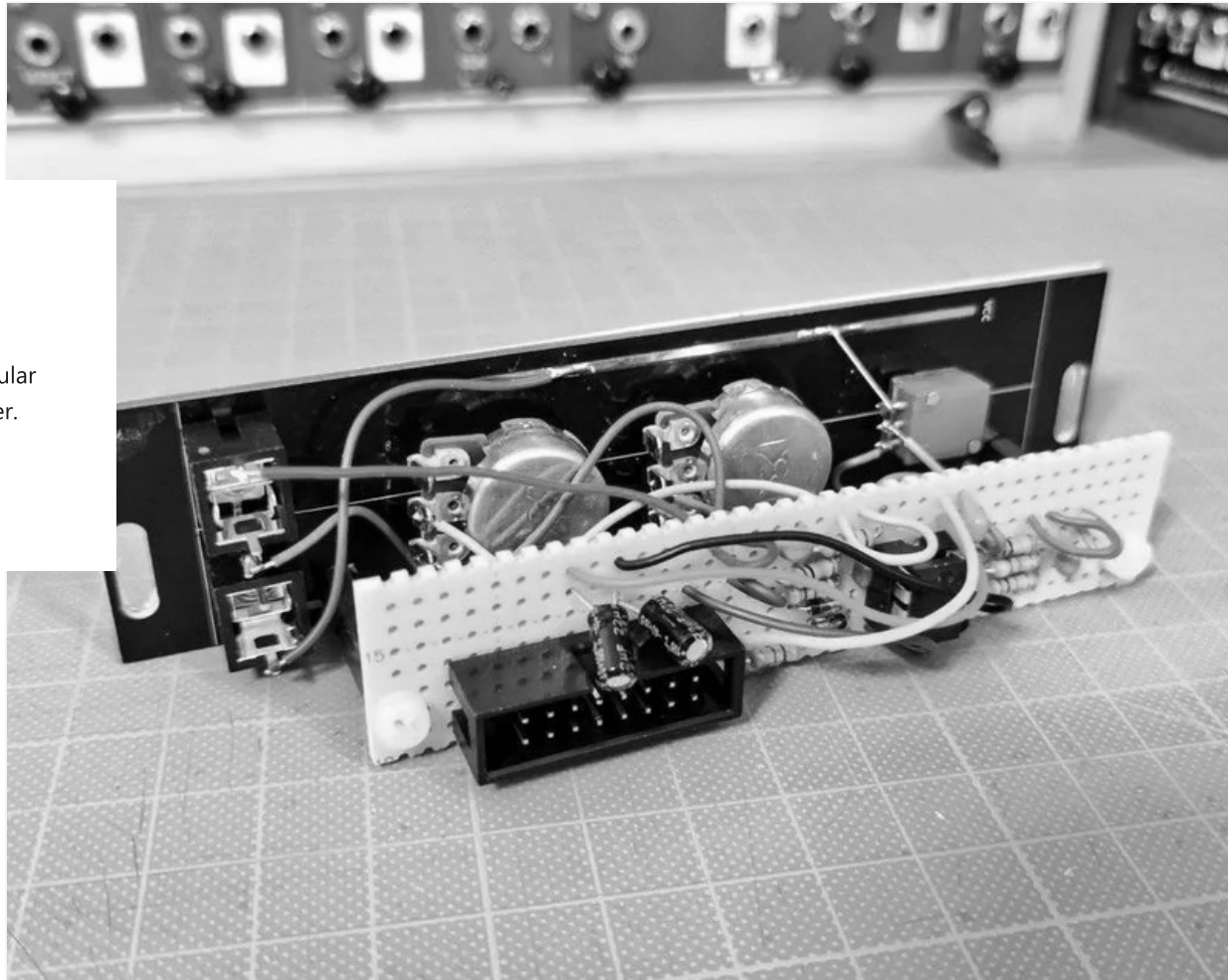
output audio. By passing through the diode clip circuit, the audio signal is attenuated to less than $\pm 0.6 V$. By amplifying with GAIN, it amplifies to the audio voltage level of the modular synth.



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Production cost

Total amount about 330 yen-----

front panel 100 yen variable resistance, 110 yen op amp 30 yen



please see the link below



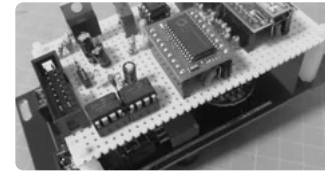
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ユラーションセ自作で使う安価な部品一覧

ついでに。適時更新。コストと品質の観点で記載、主観による。alieはリンクを貼ってもすぐに切れるので、画像で残す。値段は購入当の。昨今は値動きが激しい。品質は私の経験値。よって母数は数...



HAGIWO/ハギヲ
2021/11/19 16:18

A very simple configuration consisting of an op amp, resistor, capacitor, and diode.

hardware



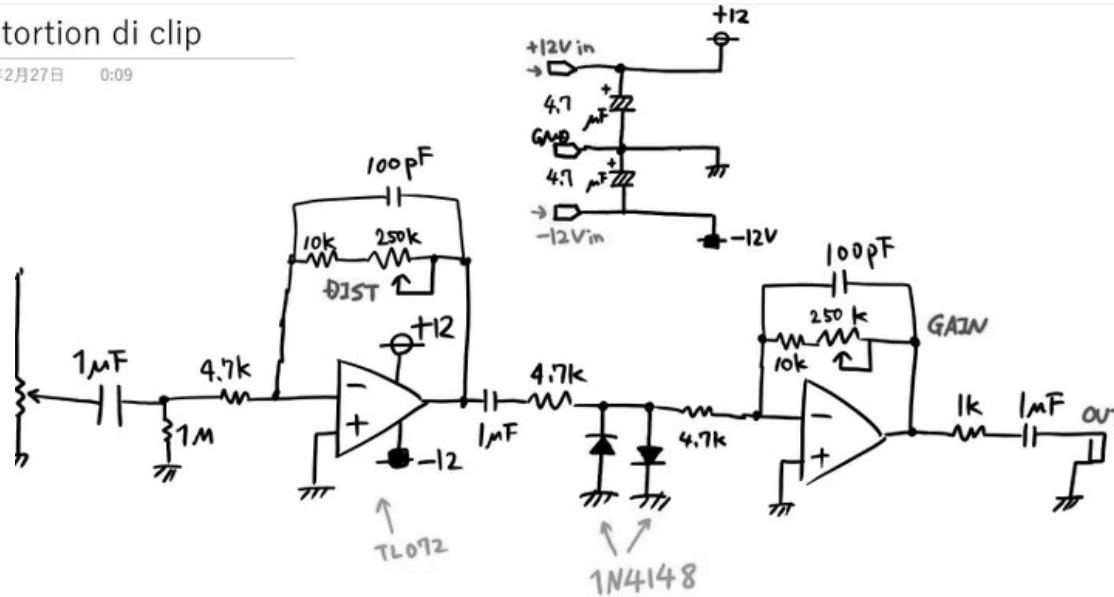
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Distortion di clip

2022年2月27日 0:09



Attenuated (ATTN), amplified (DIST), attenuated (diode clip), amplified (GAIN), and so on.

I just reviewed the distortion effectors used in electric guitars and the constants for modular synths. The modular synth can use -12V and does not require a voltage offset circuit like a guitar effector, so the circuit configuration is simpler than a guitar effector.

The 100pF capacitor in the op amp circuit is a countermeasure against oscillation. Without it, it will oscillate.

If you want to control the distortion with a CV, you can replace the DIST circuit with a VCA like the LM13700.



Alternatively, you can place a VCA connected in front of the Distortion module and control the volume and control the degree of distortion with the CV



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