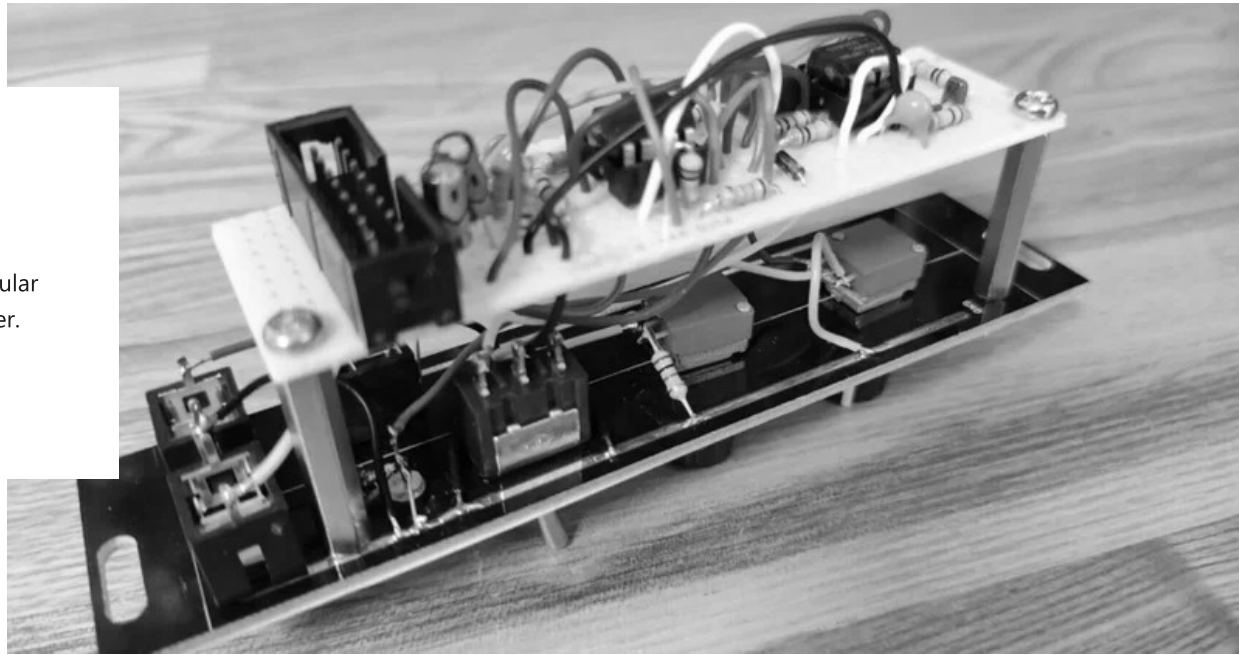




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\$5 Sample & hold-DIY Eurorack Modular Synthesizer

♡ 7



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2022:4, 2 April 12 (UTC)





I made my own Sample Hold module for a modular synthesizer using a sample hold IC, so that's a reminder.



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[\$5] DIY eurorack modular synth Sample & Hold / uPC398C LF39...



background

The 47th work of the self-made modular synth.

Two months ago, an envelope follower was created to learn the behavior of a circuit that holds the input voltage for a certain period of time.



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\$4 Envelope Follower module-DIY Eurorack Modular Synthesizer

モジュラーシンセサイザーのエンベロープフォロワーモジュールを自作し、その備忘録。背景 自作モジュラーシンセの43作品目。エンベローパーは地味なモジュールだ。システムに組み込んでいないモジ...



Since this "constant time hold" is also used in the sample hold circuit, I was interested in the sample hold module and planned to create it.



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Specs of the production



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Eurorack Standard 3U 12HP Size + α

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

Current consumption has not been accurately measured, but an

estimate value is estimated from the current consumption indicated by the regulated power supply.

Level: Attenuation of the input voltage.

Release: Setting the

release time when Release ON When set to Release SW:Release ON, the sampled voltage is not held and decays with time.

TRIG: Sample timing trigger input

IN: Sample source voltage input

OUT: Voltage output after hold

A function called Release was added to the general sample hold. It is assumed to modulate percussive sounds.



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HAGIWO/ハギワ 自作シンセ
@HAGIWO1 · フォローする



#サンプルホールド_自作モジュラーシンセ
リリース付きのサンプルホールド。
パーカッション向けだな。

回路は完成。
いや、LEDインジケータも欲しいか。

Twitterで見る

午前11:09 · 2022年3月23日



17 返信 共有

Twitterでもっと読む

Because it is an analog IC, it supports sample hold of the audio rate. If you input a square wave of a few kilohertz to the trigger, you can get an effect

effect like a bit crusher.



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What if I sample white noise?

To include first, white noise samples are incompatible with digital modules.

When benchmarking commercially available modules, many modules have

no support for white noise. By sampling white noise, random CVs can be easily

created.

I was also planning to add white noise, but decided not to.

The sampling time is a small time of less than 1 msec, but during the sampling period, the white noise waveform is output from OUT as it is.

It turns out that when this OUT is put into the digital module, it picks up this small amount of white noise and reacts. This issue seems to have been discussed in modwiggler as well.

sample & hold going white noise wrong - MOD WIGGLER

modwiggler.com



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There is no problem for using it for analog modules. However, I wanted to
re the sample-held output with a digital module, so I didn't want to
white noise.

luction cost

nount about 550 yen-----

front panel 100 yen op amp 30 yen uPC398C (sample hold IC) 220 yen

, etc., see the following link

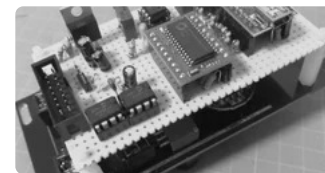
モジュラーシンセ自作で使う安価な部品一覧

メモのついでに。適時更新。コストと品質の観点で記載、主観による。alieu
xpress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
時のもの。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...

♡ 17



HAGIWO/ハギヲ
2021/11/19 16:18





Since the uPC398C is an IC manufactured by Japan, it is Japan available.
It seems that the LF398 of Texas Instruments, which has the same characteristics, can be substituted. (unverified)

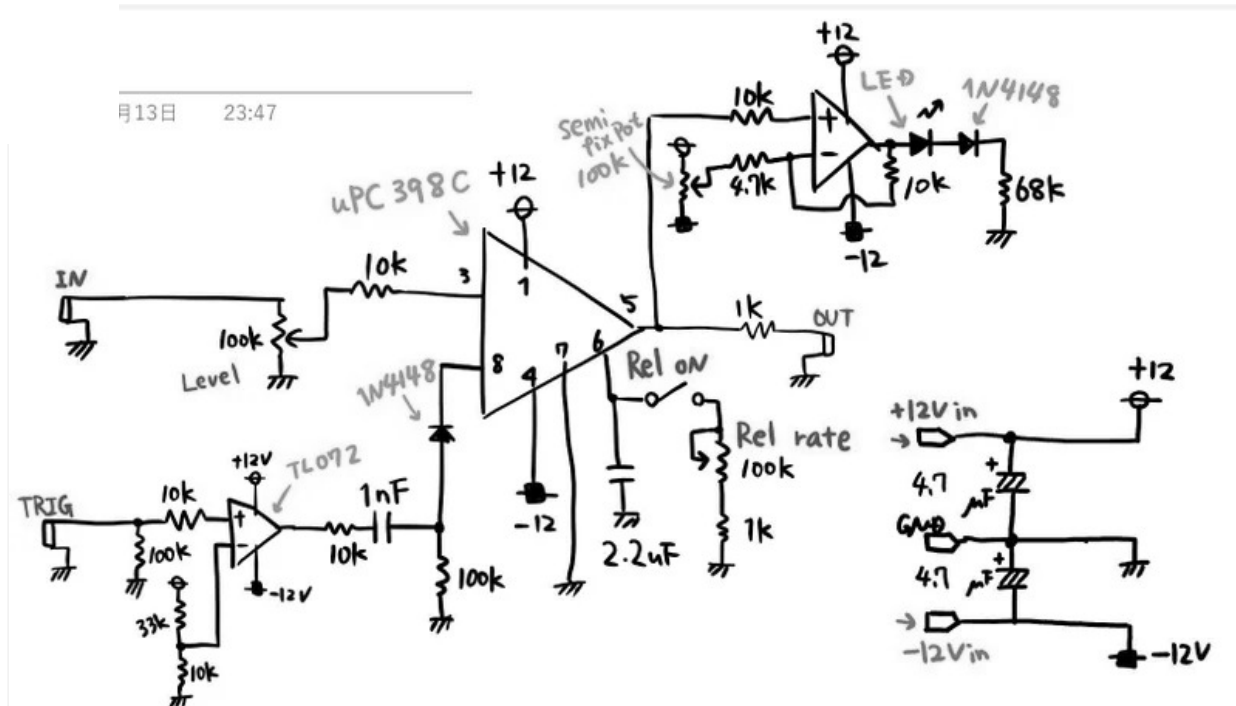


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ware



The IN circuit is a simple circuit that attenuates the input signal with a variable resistor.

The op amp in the TRIG circuit is for the comparator. A 1nF highpass filter



creates a short pulse for turning on the sample. If this pulse is large, the voltage will fluctuate during sampling.



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ample hold IC is in the center. See data sheet for functions.

amp in the upper right illuminates the LED indicator. The LED glows when the voltage is positive, but does not glow when the voltage is negative.

A 10kΩ resistor can be used to adjust the offset of the output of the op-amp and set the LED to glow even at small voltages. This is because if the offset is not adjusted, the LED does not glow until it is more than 4V (= V_f of the LED + 1N4148) or more.

The 1N4148 is for LED reverse pressure protection.

The release circuit turns on a switch to remove charge from the voltage holding capacitor. The speed at which the charge escapes (release time) is adjusted by a variable resistor.

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to distribute patron-only content.

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