

# Echo Nightmare SMD

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**Based on:**

DBA Echo Dream II

**Effect type:**

Lo-Fi Delay + Fuzz

**Build difficult:**

Intermediate

**Number of parts:**

Average, total 35 components

**Technology:**

Pt2399 Delay controlled by

XR2206P's LFO

**Power consumption:**

9V(9mA)

**Enclosure type:**

1590bb

**Get your board at:**

[Echo Nightmare SMD](#)

**Get your kit at:**

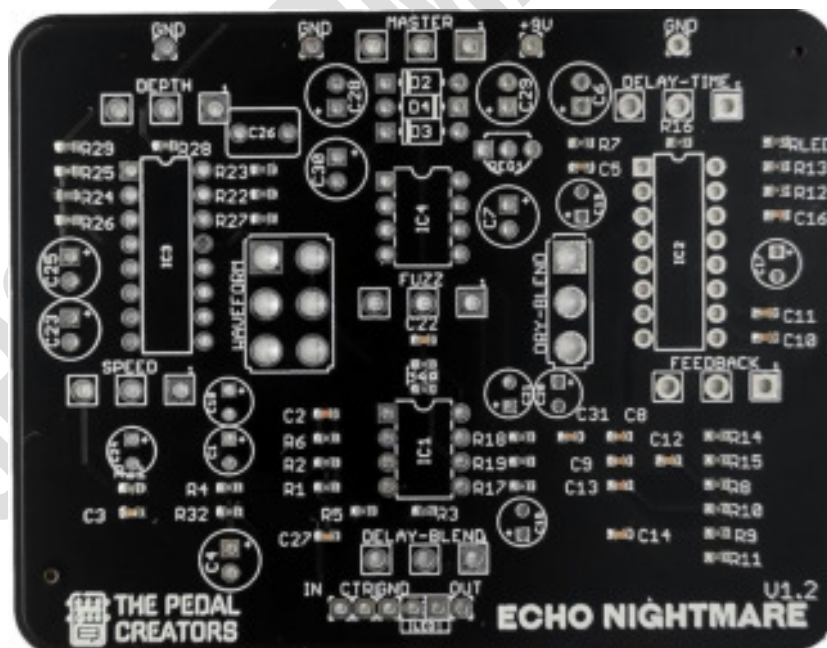
[Das Musikding \(Europe\)](#)

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**Project overview:**

The Echo Nightmare is a dream come true for everyone who likes to experiment with lo-fi delays, ambient noises, and crazy fuzzes, all in one box. With seven knobs and two switches, we can assure you that this is definitely the tweakaholics dream!

This circuit allows you to build such a versatile pedal capable of experimenting with different shape of waveforms, slapback, or self-oscillating feedback, you can even use the modulation and fuzz sounds with the delay or on their own, just by flicking the dry switch, making this circuit way more versatile than any other delay pedals.



# About The Pedal Creators

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**Everyone can build** excellent boutique guitar **pedals**.

Everything **we do** is to make that **experience** more accessible and **user-friendlier**.

The **Pedal Creators** series are the **best and easiest to build PCBs** ever. Including most **resistors** and **capacitors** already **soldered** on board as SMD components, leaving the key values for you to **experiment** and craft **your own tone**.

Now you can **build** a pedal you are **proud** of in **less than an hour** without any previous experience.

What are you waiting for to **become a Pedal Creator**?

## The Pedal creators - key features:

- **Easy to build**, no previous experience required. It's like Lego for musicians.
- **Fast assembly** finish a pedal in less than an hour. Play your favorite record and enjoy the ride along.
- **100% mistake-proof**. Even my grandma can build one while she cooks.
- **Build** your own boutique pedal. Experiment with different values and make the **pedal you always dreamed of**.
- Easy to scale. **Turn your passion into a money-making machine**.

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# Introduction

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The circuit of the Echo nightmare is as crazy as the tones it generates; like always, we could not expect less from the people from DBA. The most interesting part of this circuit is, without a doubt, the XR2206P IC in charge of changing the shape of the wave, controlling depth and speed of the modulation. Definitely a unique approach for a modulated delay.

We included an internal charge pump over the original design that provides the XR2206P with 18v for the right functioning.

Every time you face a Death by Audio pedal you are in front of a challenge! For this case, we have this fuzz-reverb-delay-noise machine featuring a pt2399, one dual Opamp (MC3372 on the original, could be replaced by more common ones), one discontinued and hard to find XR2206, plus an internal voltage duple in charge of feeding this circuit with the right voltage!

## Controls

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### Potentiometers

- Delay-Blend
- Delay-Time
- Depth
- Feedback
- Fuzz
- Master
- Speed

### Switches

- Waveform
- Dry-Blend

# Bill of materials

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Capacitors	
Part	Value
C26	680n

Electrolytics Capacitors	
Part	Value
C1	1u
C4	100u
C6	100u
C7	100u
C15	1u
C17	1u
C18	1u
C19	1u
C20	1u
C21	1u
C23	10u
C24	1u
C25	10u
C28	220u
C29	100u
C30	10u

Potentiometers	
Part	Value
DELAY-BLEND	B100K
DELAY-TIME	A100K
DEPTH	C100K
FEEDBACK	C100K
FUZZ	A1M

MASTER	A100K
SPEED	A1M

Switches	
Part	Value
Waveform	DPDT ON-ON
Dry-Blend	SPDT ON-ON

IC	
Part	Value
IC1	MC33172P**
IC2	PT2399
IC3	XR2206P*
IC4	TC1044SCPA
REG1	Lm78l05

Diodes	
Part	Value
D2	1N5817
D3	1N5817
D4	1N5817
LED	3mm LED

# Shopping list

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Capacitors		
Qty	Value	Parts
1	680n	C26

Electrolytics Capacitors		
Qty	Value	Parts
4	100u	C4, C6, C7, C29
3	10u	C23, C25, C30
8	1u	C1, C15, C17, C18, C19, C20, C21, C24
1	220u	C28

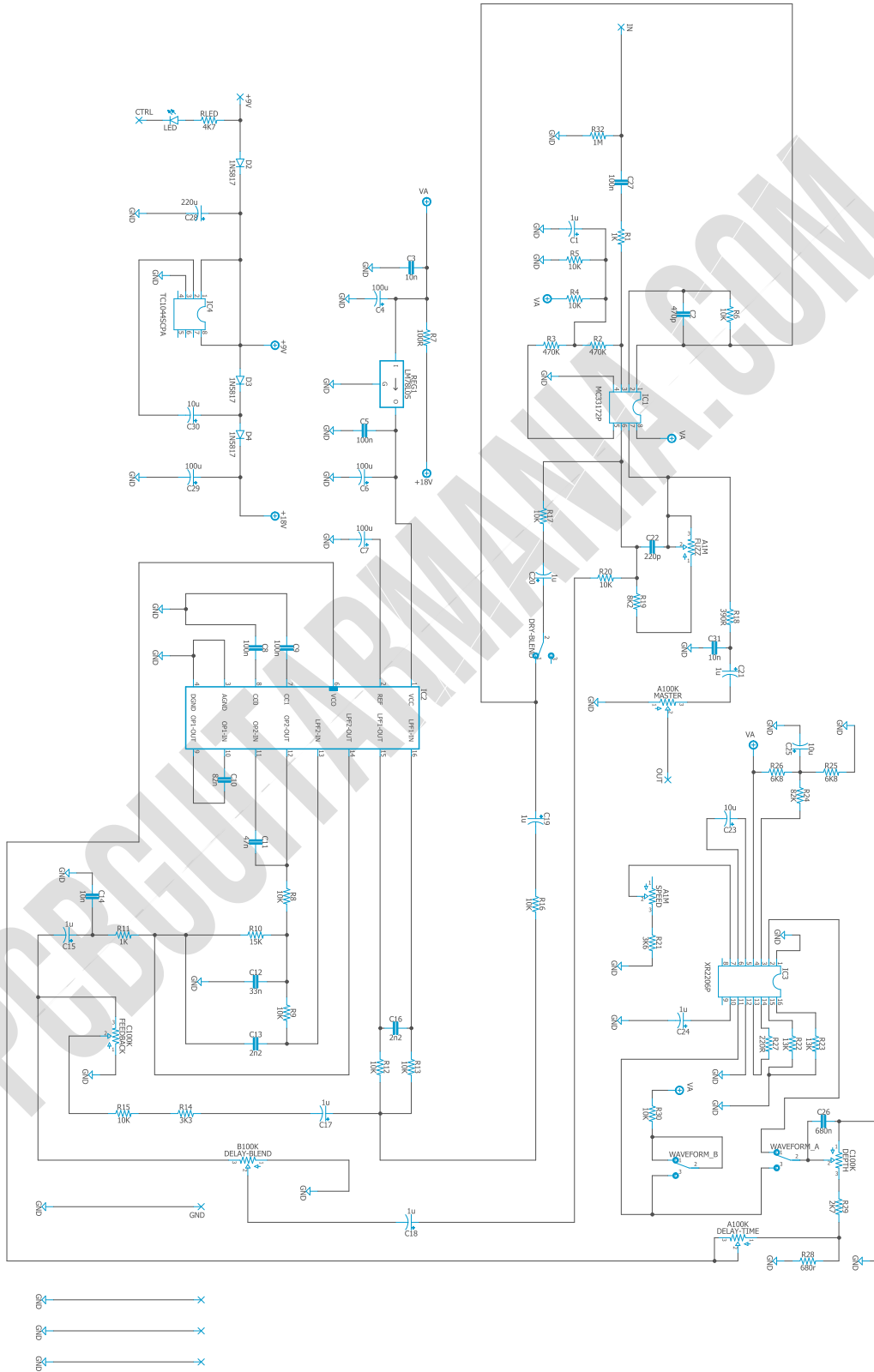
Potentiometers		
Qty	Value	Parts
2	A100K	DELAY-TIME, MASTER
2	A1M	FUZZ, SPEED
1	B100K	DELAY-BLEND
2	C100K	DEPTH, FEEDBACK

Switches		
Qty	Value	Part
1	DPDT ON-ON	Waveform
1	SPDT ON-ON	Dry-Blend

IC		
Qty	Value	Parts
1	PT2399	IC2
1	MC33172P**	IC1
1	TC1044SCPA	IC4
1	XR2206P*	IC3
1	Lm78l05	REG1

Diodes		
Qty	Value	Parts
3	1N5817	D2, D3, D4
1	Led	3mm LED

# Schematic



# Components Recommendations

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As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

## Build Notes

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If this is one of your first projects, I recommend you to take a look at our [Pedal Building Guide](#).

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

### **XR2206P\*:**

This is definitely a hard-to-source IC, with many counterfeits around that will give you a total headache when building this pedal.

Make sure you are using a legit IC from a trusted source.

### **MC33172P\*\*:**

This is another unobtainable IC; however, it could be easily replaced by any other Opamp.

In our first build, we found that NE5532P works the best. However, other classic Opamps such as TL072 might do the job.

## Wiring Diagram

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All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named “Ctrl” or “LED” is the one that controls the status of the led; wire it to the “LED” pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it [here](#) to access our [Pedal Wiring Guide](#).

## Drill Template

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This Project has been planned to fit into a 1590bb enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

## Licensing and Usage

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We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our [PCB Guitar Mania – Builders Group](#) on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated. If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

Follow us on [Instagram](#) and [Facebook](#) to stay in tune with the latest projects!