Pirate Shift SMD

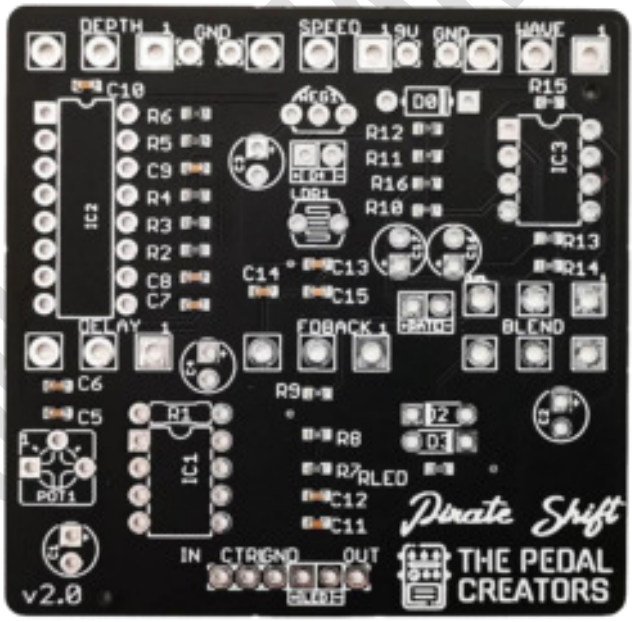
Based on:
Deluxe Pirate Pitch by Mid-Fi Electronics.
Effect type:
Chorus/Vibrato
Build difficult:
Easy

Amount of parts:
Low, total 24 components
Technology:
Vactrol/photoresistor
Power consumption:
9V

Enclosure type:
125b
Get your board at:
Pirate Shift SMD
Get your kit at:
Das Musikding (Europe)

Project overview:

The Pirate Shift is a Chorus/Vibrato merged with a PT2399 based delay. It also has the ability to modulate over an octave as well as control the waveform of the modulator, giving you a huge range of tonal options. It works from a standard chorus to a crazy modulation device.



About The Pedal Creators

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 PCB**s 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**.

Index

Introduction

Ahoy! The Pirate Shift is about to embark in search of the most fantastic modulation sounding! I see no fear in your eyes. Hop on the boat then and join us in this adventure.

Our board has the perfect delay, chorus, and vibrato combination and six user-friendly controls, Delay Time, Feedback, Depth, Speed, Wave, and Blend, that will allow you to navigate the briny deep of sounding with the ultimate versatility.

With the ability to be used as a standalone delay, chorus, or pitch vibrato, the Pirate Shift can be relentlessly tweaked and shaped to provide you with whatever modulation needs your heart desires.

Controls

Potentiometers

- Speed
- Wave
- Delay
- Depth
- Feedback
- Blend

Bill of materials

Electrolytic Capacitors	
Part	**Value**
C1	47UF
C2	47UF
C3	47uf
C4	47uf
C16	1uf
C17	47uf

Semiconductors	
Part	**Value**
IC1	LM386
IC2	Pt-2399
IC3	JRC 4558

Voltage Regulators	
Part	**Value**
REG1	**Lm78L05****

Potentiometers	
Part	**Value**
SPEED	B1m
WAVE	B1k
DELAY	B100k
DEPTH	B100k
FDBACK	B50k
BLEND	B50k Dual gang (stereo)

Trimmers	
Part	**Value**
Pot1	100K

Diodes	
Part	**Value**
D1	1N4001
D2	1n4148
D3	1n4148
D4	**LED5MM***
D5	LED3MM

Photo resistor/ Photo coupler*	
Part	**Value**
LDR1	VTL5C2

Switches	
Part	**Value**
-	3PDT Stomp foot

Jacks	
Part	**Value**
-	DC Jack
-	Audio Jack
-	Audio Jack

Shopping list

Electrolytic Capacitors		
Qty	**Value**	**Parts**
1	1uf	C16
2	47UF	C1, C2
3	47uf	C3, C4, C17

Semiconductors		
Qty	**Value**	**Parts**
1	LM386	IC1
1	JRC 4558D	IC3
1	Pt-2399	IC2

Voltage Regulator		
Qty	**Value**	**Parts**
1	**LM78L05****	REG1

Potentiometers		
Qty	**Value**	**Parts**
2	100K B	DELAY, DEPTH
1	1K B	WAVE
1	1M B	SPEED
1	50K B	FDBACK
1	50K B Stereo	BLENDA, BLENDB,

Trimmer		
Qty	**Value**	**Parts**
1	100K	POT1

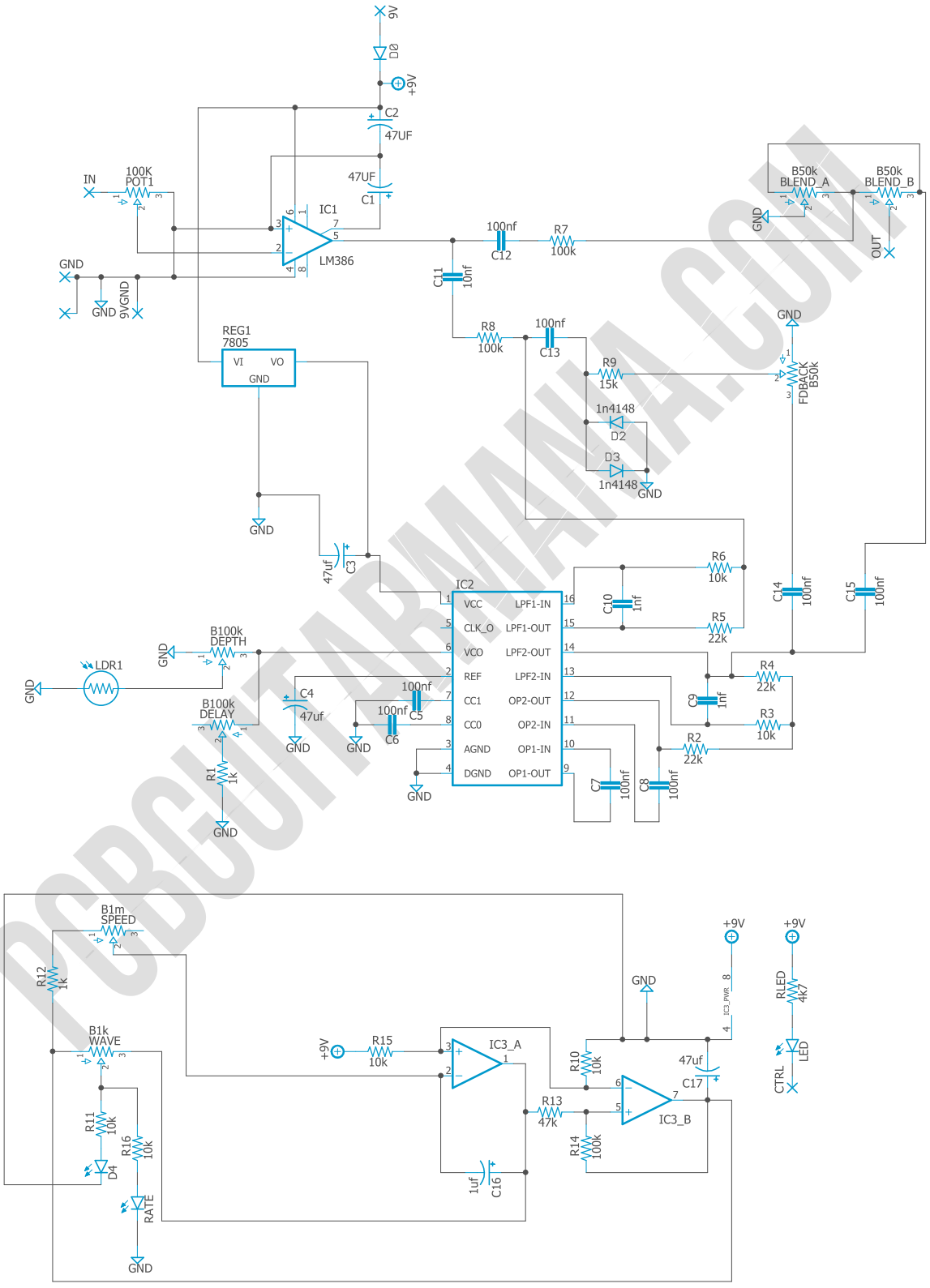
Diodes		
Qty	**Value**	**Parts**
2	1n4148	D2, D3
1	1n4001	D1
1	Led 3mm	D5
1	**Led 5mm***	D4

Photo resistor/ Photo coupler*		
Qty	**Value**	**Parts**
1	VTL5C2	LDR1

Switches		
Qty	**Value**	**Parts**
1	3PDT Stomp foot	-

Jacks		
Qty	**Value**	**Parts**
1	DC Jack	-
2	Audio Jack	-

Schematics



Components Recommendations

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

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

Photo resistor/ Photo coupler *
The project features two different alternatives here, the stock version using a **VTL5C2** photo coupler, or to build your own with a 5mm led facing a photo resistor like the **KE-10720** inside a piece of heat-shrink tube. The home-made alternative brings you the opportunity to customize much more the LFO of the effect just by changing the led color, brightness or even the distance in between the led and the photo resistor.

Lm78L05**
It's recommended, in order keep the project tidy, to get this part on a To-92 package (the one that looks like a standard transistor). The TO-220 will work great also, but some people might find it too big.

Wiring Diagram

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

This Project has been planned to fit into a 125b 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

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!