

# Forestal Device

## Based on:

Earthquaker devices Westwood

## Effect type:

Translucent overdrive

## Build difficult:

Average

## Amount of parts:

Average, total 53 components

## Technology:

Dual OpAmp

## Power consumption:

9V

## Enclosure type:

125b

## Get your board at:

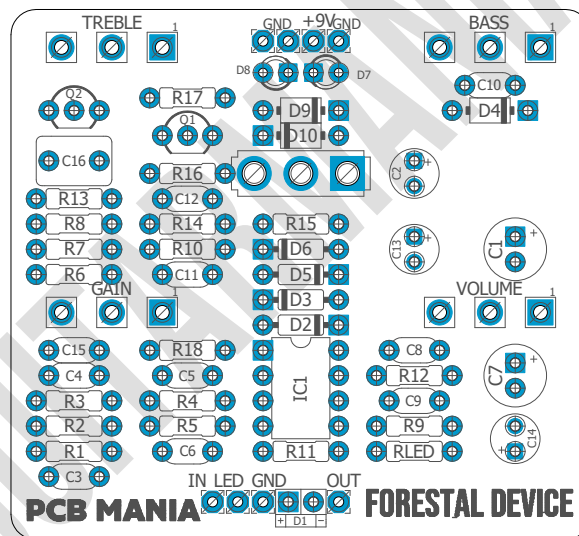
[Forestal Device](#)

## Get your kit at:

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

## Project overview:

Inspired by the Earthquaker devices Westwood, this translucent overdrive pedal tool excels at pulling the most harmonically rich drive from any amplifier.



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# Introduction

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The founder of EarthQuaker Devices, Jamie Stillman, in his own words, states that the pedal was "kind of an experiment I did for myself."

Somehow related to Paul Cochrane's Timmy, features an active bass and treble control and up to 20db level boost. For this pedal we included the possibility of adding a diode selector toggle to choose in between two different sets of diodes.

Inspired by the sonic clarity and definition imparted by a BBE Sonic Stomp Sonic Maximizer in a Music Man HD -130 amp; Jamie set out to build an overdrive that would similarly restore the signal definition and harmonic content lost to amplitude and phase distortion in guitar amps.

Achieving clarity and crunch at the same time can seem counter-intuitive; there is often some drawback in terms of note separation and definition. However, it's immediately apparent that Westwood achieves its goal of signal transparency extremely well. When you hit a full, open E, each string's unique timbre comes through easily, followed by an interesting dynamic sustain as the sparkling high end fades into a nasty low-end growl.

The overdrive's essential flavor is incredibly natural and amp-like when using flat bass and treble settings, with pleasant tube-like quality. Boosting the treble level adds presence and midrange, which is useful for compensating for muddy humbuckers, such as lowering the level tones down slightly enough to tame a particularly peaky amp.

Raising the bass level to more extreme ranges evolved the sound from slightly assertive to a noticeable drone reminiscent of the low-end jolt heard in Metallica's infamous. And Justice For All guitar mix, while extreme treble settings created an interesting lo-fi AM radio sound.

For this pedal, we included a diode selector toggle that switches in between the stock 4148 and our hybrid combination of silicon diodes + red LEDs for a more open sound. You can bypass this toggle and build the stock version by placing a jumper in between the 2 circular pads of the toggle and leaving D7-D10 unpopulated.

## Controls

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- Gain
- Level
- Bass
- Treble
- Diode Switch

# Bill of materials

Resistors	
Part	Value
R1	1M
R2	1K
R3	470K
R4	4K7
R5	4K7
R6	1K
R7	33K
R8	6K2
R9	150K
R10	6K2
R11	1M
R12	1K
R13	6K2
R14	6K2
R15	150K
R16	47K
R17	47K
R18	33K
RLED	4K7

Capacitors	
Part	Value
C3	100p
C4	100n
C5	100p
C6	220n
C8	100n
C9	100p
C10	100n
C11	4n7
C12	4n7
C15	100n
C16	1u

IC	
Part	Value
IC1	OPA2134PA

Transistors	
Part	Value
Q1	2N5089
Q2	2N5089

Switches	
Part	Value
SW1	on-off-on

Electrolytic Capacitors	
Part	Value
C1	100u
C2	10u
C7	100u
C13	1u
C14	1u

Diodes	
Part	Value
D1	3mm LED
D2	1N4148
D3	1N4148
D4	1n5817
D5	1N4148
D6	1N4148
D7	LED.RED
D8	LED.RED
D9	1N4148
D10	1N4148

Potentiometers	
Part	Value
BASS	B100K
GAIN	A1M
TREBLE	B100K
VOLUME	A100K

# Shopping list

Resistors		
Qty	Value	Parts
2	150K	R9, R15
3	1K	R2, R6, R12
2	1M	R1, R11
2	33K	R7, R18
1	470K	R3
2	47K	R16, R17
3	4K7	R4, R5, RLED
4	6K2	R8, R10, R13, R14

Capacitors		
Qty	Value	Parts
4	100n	C4, C8, C10, C15
3	100p	C3, C5, C9
1	1u	C16
1	220n	C6
2	4n7	C11, C12

Electrolytic Capacitors		
Qty	Value	Parts
2	100u	C1, C7
1	10u	C2
2	1u	C13, C14

Potentiometers		
Qty	Value	Parts
1	A100K	VOLUME
1	A1M	GAIN
2	B100K	BASS, TREBLE

IC		
Qty	Value	Parts
1	OPA2134PA	IC1

Transistors		
Qty	Value	Parts
2	2N5089	Q1, Q2

Switches		
Qty	Value	Parts
1	on-off-on	SW1

Diodes		
Qty	Value	Parts
6	1N4148	D2, D3, D5, D6, D9, D10
2	LED.RED	D7, D8
1	3mm LED	D1
1	1n5817	D4



# 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

## 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 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

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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!