

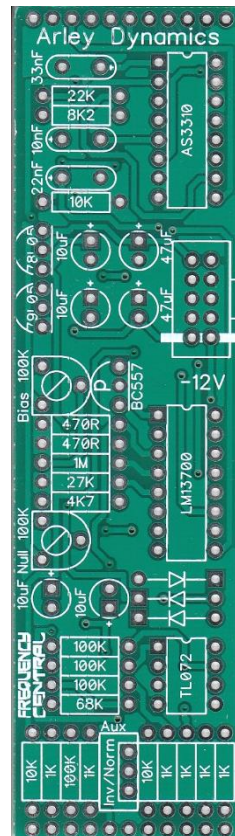
FREQUENCY CENTRAL

Build documentation for:

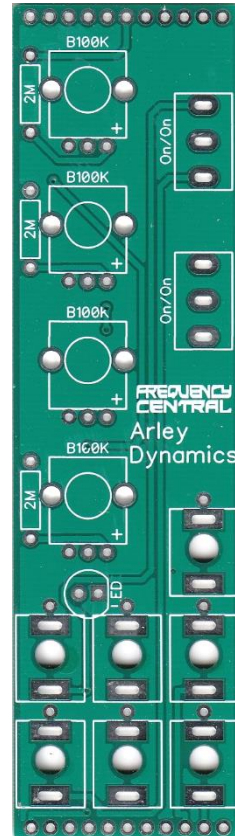
ARLEY DYNAMICS

A combined ADSR and VCA in a small 6HP package with some novel features.

Main PCB



Control PCB



Arley Dynamics takes our super snappy CEMvelope, marries it to a VCA from our More VCAs, and throws in a bunch of extras. the result is a super compact combo to control the dynamics of your system.

Key to PCB screen print:

p: This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.

The PCB shows the correct orientation for BC557. Other similar transistor types can be used, but please observe the correct pinout.

Please observe the correct polarity of the electrolytic capacitors.

Bill of Materials

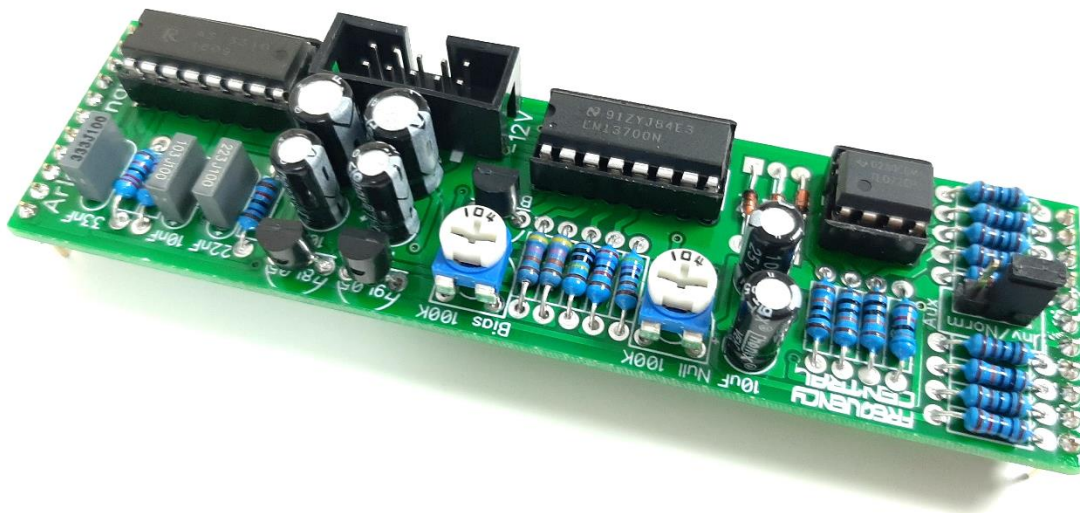
470R x 2	10nF x 1	AS3310	B100K x 4
1K x 6	22nF x 1	LM13700 x 1	(or these)*
4K7 x 1	33nF x 1	TL072 x 1	
8K2 x 1	10uF x 2	BC557 x 1	SPDT switch x 2
10K x 3	47uF x 2	1N4148 x 3	
22K x 1		78L05 x 1	100K trimmer x 2
27K x 1		79L05 x 1	
68K x 1		3mm red LED x 1	3.5mm socket x 7
100K x 4			
1M x 1		8 pin IC socket x 1	Male header
2M x 3		16 pin IC socket x 2	(cut to size)
		Arley Dynamics PCBs	Female header
All resistors ¼ watt metal film.		Arley Dynamics panel	(cut to size)
			Box header x 1
			Jumper x 1 for Aux

* I prefer the Song Huei tall trimmers because they have a longer shaft and a white notch. And now Think do these toppers in a range of colours: [Think tall trimmer toppers](#)



Main PCB assembly

1. Solder all resistors and diodes
2. Solder all three IC sockets
3. Solder all three non-electrolytic capacitors
4. Solder BC557, 78L05 and 79L05 – watch the polarity!
5. Solder both trimmers
6. Cut to size and solder the Inv/Norm jumper header. Place the jumper in the header now so you don't forget.
7. Solder the power header.
8. Solder all electrolytic capacitors
9. Cut male headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.



Pots 'n' sockets PCB

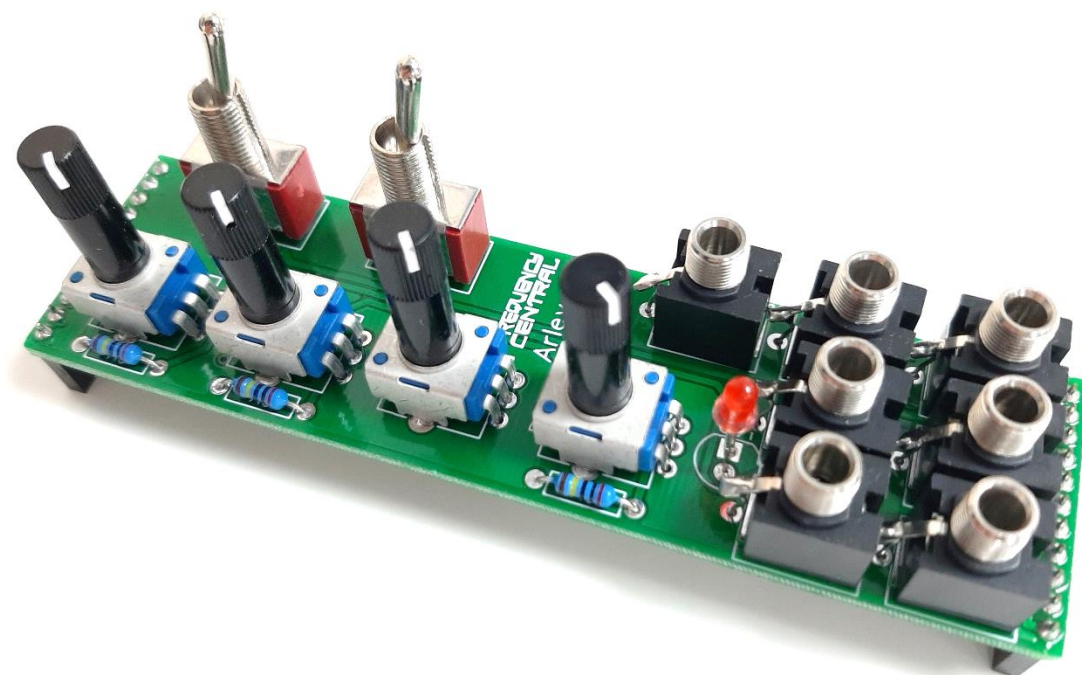
1. Place both switches on the PCB, then place the panel over them. This will assure that they are correctly positioned.
2. Place all sockets on the PCB, making sure the ground tabs line up with the PCB's ground pads, then place the panel over them. This will assure that the sockets are correctly positioned.
3. Flip the whole lot over and solder the sockets into place.
4. Use cut off resistor legs to connect the sockets' ground tabs line up with the PCB's ground pads.
5. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.

Note: Not all pots and sockets are equal in height. Providing you use the ones in the links provided, everything will line up perfectly.

Calibration

- **Bias:** Adjust Bias trimmer to sweet spot, ie a nice clean undistorted VCA output with no DC thunk when a snappy ADSR is applied to a CV input. I do this without any audio at the inputs. The chances are that that the sweet spot is around the mid position.
- **Null:** Feed a signal through the VCA while gating the ADSR from a clock source. Patch a cable into the Level CV input and ground the tip of the socket (a crocodile clip is your friend). Adjust the Null trimmer until no signal is heard.

All done! Let's get dynamic!



Revised RDH 04/12/20

<http://www.frequencycentral.co.uk/>