

# FREQUENCY CENTRAL

Build documentation for:

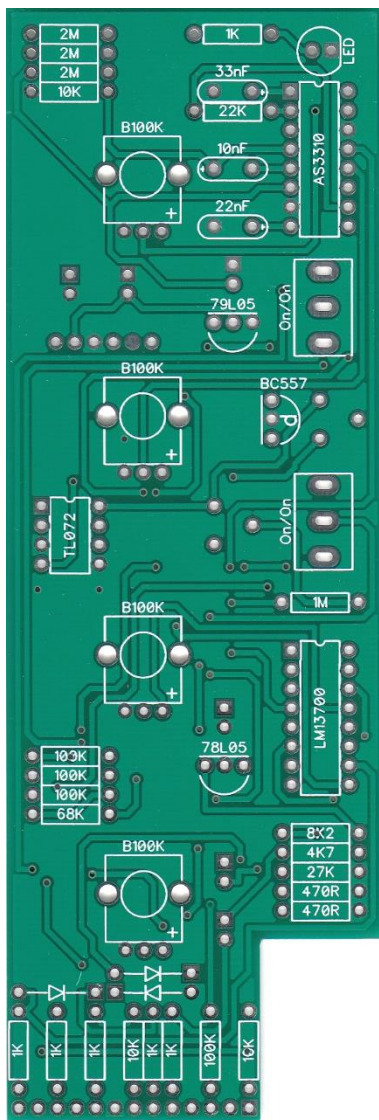
## ARLEY DYNAMICS

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

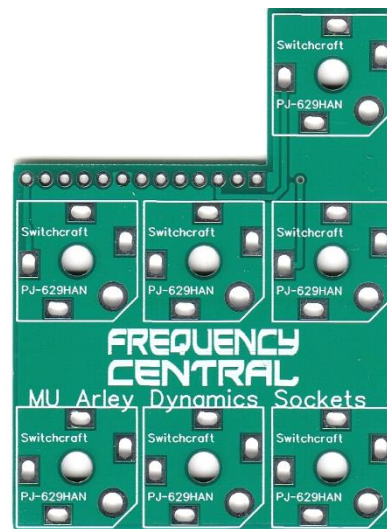
Arley Dynamics takes our super snappy AS3310 based ADSR design, marries it to our ARP influenced VCA, and throws in a bunch of extras. The result is a super compact combo to control the dynamics of your system.

Arley Dynamics features 2 PCBs:

Main PCB



Sockets PCB



## Bill of Materials

470R x 2	<a href="#">10nF x 1</a>	<a href="#">AS3310 x 1</a>	<a href="#">B100K x 3</a>
1K x 6			
4K7 x 1	<a href="#">22nF x 1</a>	<a href="#">LM13700 x 1</a>	<a href="#">SPDT switch x 2</a>
8K2 x 1			
10K x 3	<a href="#">33nF x 1</a>	<a href="#">TL072 x 1</a>	<a href="#">100K trimmer x 2</a>
22K x 1			
27K x 1	<a href="#">10uF x 4</a>	<a href="#">BC557 x 1</a>	<a href="#">Box header x 1</a>
68K x 1			
100K x 4	<a href="#">47uF x 2</a>	<a href="#">1N4148 x 3</a>	<a href="#">6.3mm socket x 7</a>
1M x 1		<a href="#">78L05 x 1</a>	<a href="#">Male 40 pin header x 1</a>
2M x 3		<a href="#">79L05 x 1</a>	<a href="#">Female 40 pin header x 1</a>
<a href="#">All resistors ¼ watt metal film.</a>		<a href="#">3mm red LED x 1</a>	<a href="#">DOTCOM 6 pin header</a>
		<a href="#">8 pin IC socket x 1</a>	
		<a href="#">16 pin IC socket x 2</a>	

Please observe correct polarity of the electrolytic caps, voltage regulators, transistor, ICs etc!



### **Main PCB:**

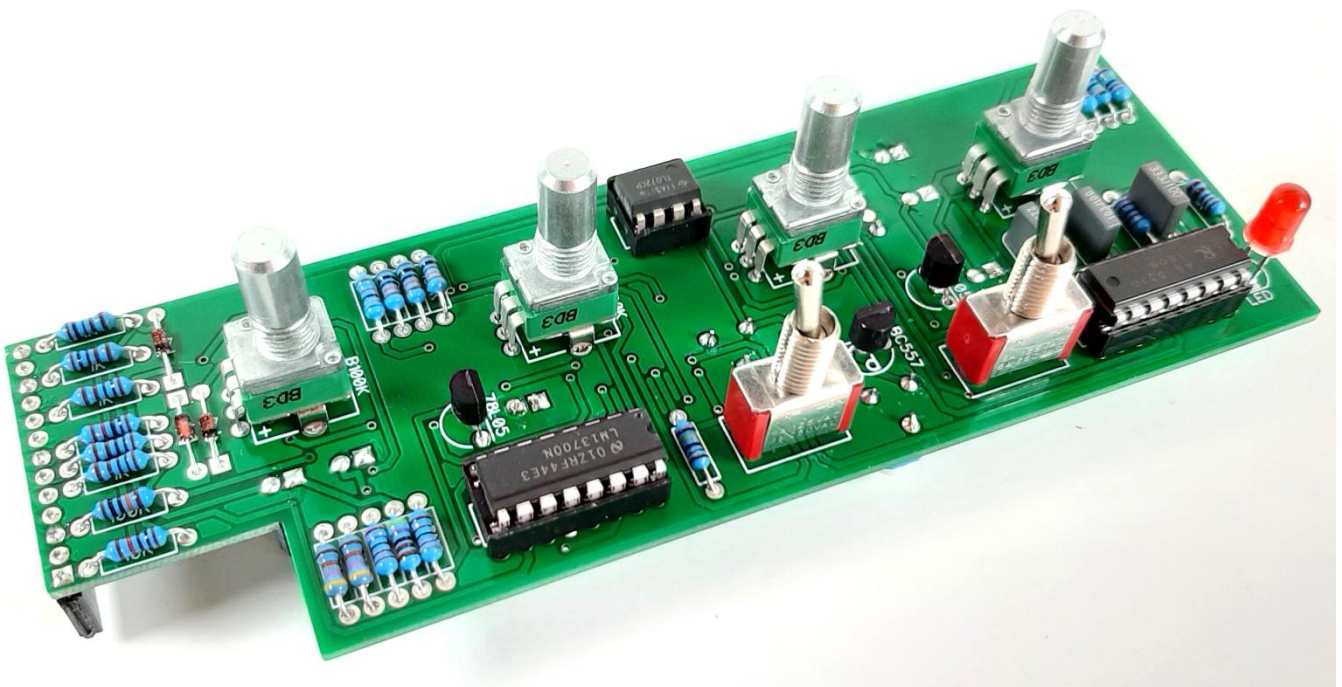
Populate the Main PCB front first, as shown on the silkscreen, starting with the lowest profile components, so:

- Resistors, diodes
- IC sockets
- Non-electrolytic capacitors, transistor and voltage regulators
- Panel mount components (pots, switches, LED) – it can be useful to use the panel to make sure of nice fit.

Now populate the rear of the Main PCB:

- Trimmers
- Header for Sockets PCB
- Power header
- Electrolytic capacitors

Mount the PCB to the panel with the various washers and nuts.



### Sockets PCB

- Place all sockets on the PCB, then place the panel over them. This will assure that the sockets are correctly positioned. Flip the whole lot over and solder the sockets into place.
- Cut the male header to size and place the long end into the female header of the Main PCB
- Present the populated sockets PCB to the panel, making sure the male header passes through the PCB pads.
- Make sure everything fit's nice and snug and solder the header into place.



### 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!

RDH 10/02/22

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