APOGEE SMD V1 – ASSEMBLY GUIDE

This document will help you to build your module without any trouble! We will give the order in which the components should be placed on the boards to make your life easier during assembly.

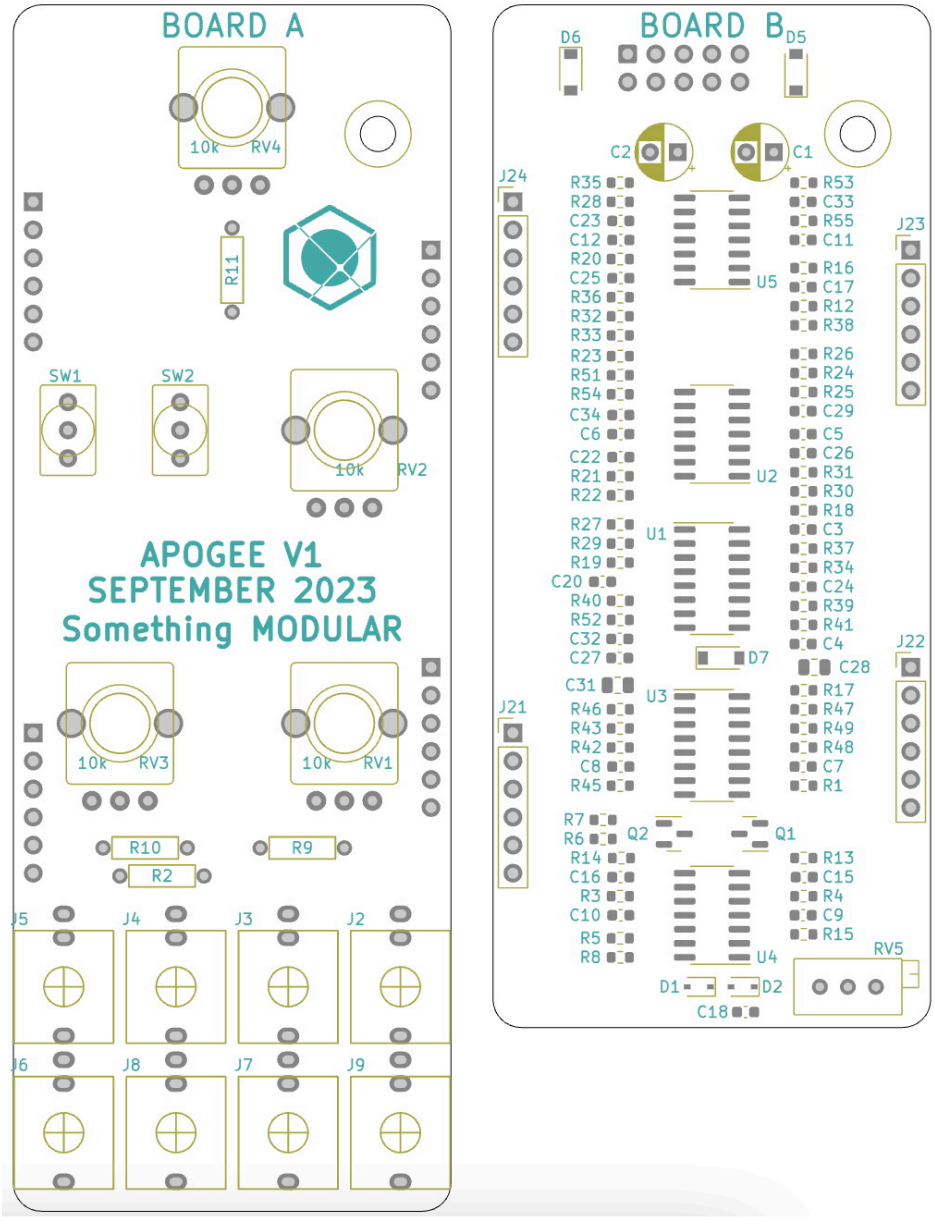
If you want more information about how to build Eurorack modules and what tools you should have, go check our DIY electronics advice on our website: **somethingmodular.fr**

We also made an **online interactive BOM** so you can check components placement.

And again:

THANKS YOU FOR CHOOSING OUR KIT!! YOU'RE AWESOME!!

Now let's build this module, your module!



Let's start by working on board B :

ELECTROLYTIC CAPACITORS

Electrolytic Capacitors are **Polarized!**
Mind the polarity : the long leg is the positive lead, negative lead is denoted by a white line.

Qty	Value	Package	Voltage	Reference designator
2	10µF	D5.0 * P2.0	≥ 25 V	C1, C2

TRIMMERS

Solder the trimmers with the screw facing out from the edge of the PCB.

Qty	Value	Package	Reference designator
1	5k	3296X	RV5

POWER CONNECTOR

This component should be soldered on the back of the PCB. Mind pin 1.

Congratulation, You have just completed the first part of the job, now put Board B aside and let's work on Board A :

RESISTORS

Qty	Value	Color	Code	Reference designator
4	100k		Brown, black, black, orange, brown	R2, R9, R10, R11

READ THIS BEFORE SOLDERING POTS, JACKS, SWITCH AND LEDS:

Install potentiometers, mini-jacks and switch onto board A without soldering. Now place the front panel, secure few components (top potentiometer and bottom jacks for example). Check for any mechanical stress on components, PCB or panel. If there is none then you can solder.

Remember to do this little routine every time you put front panel components, soldering without putting the front panel components first you risk to have hard time to align the components to the panel holes.

3.5mm JACK SOCKETS		
Qty	**Value**	**Reference designator**
8	PJ301M-12	J2, J3, J4, J5, J6, J7, J8, J9

POTENTIOMETERS - ALPHA 9MM POTS		
Qty	**Value**	**Reference designator**
4	10k linear	RV1, RV2, RV3, RV4

TOGGLE SWITCHES		
Qty	**Value**	**Reference designator**
2	2MS1T1B1M2QES	SW1, SW2

After soldering, you can now take off the front panel, put it aside.

FEMALE AND MALE PIN HEADERS

Place the female pin headers on the front side of board B, place the male pin headers on the back of board A. Put them inside each other.
Secure the spacer between board A and B.
Solder both female and male pin headers.

Qty	Value	Reference designator
4	1x06 Female Pin Header	J21, J22, J23, J24
4	1x06 Male Pin Header	J11, J12, J13, J14

Put back the panel as you did before. Now you can secure all jacks and pots nuts. Once you are done. Put the potentiometer knobs on.

CONGRATULATION, you've just finished building your new module !

FIRST POWER UP TEST :

Before powering up your module, use a multimeter to check that there is no short between +12V, -12V and Ground rails.

Now you can power up your module: Connect the power ribbon cable (the red wire on the power ribbon cable corresponds to -12V) and **Enjoy!**

CALIBRATION:

The goal of this calibration is to set the voltage tracking so that a change of 1V in CV will cause a change of exactly one octave of the Auto-Oscillating frequency.

Start by powering-up your module with nothing connected to the Audio Input jack and listen to the tone at the LOWPASS output.

1 – Set “RESO” knob to maximum (CW) to enter auto-oscillation mode.

2 – Set “CUTOFF” knob to around 10 o’clock (exact position does not matter).

3 – Connect a 1V/Oct keyboard or source to the V/OCT input jack.

4 – Adjust the trimmer RV5 on the side of the circuit board so that the frequency you hear exactly doubles when changing the CV by 1V.

Note that the frequency of all notes will change when adjusting the trimmer, the actual frequency does not matter, only the interval should matter.

The APOGEE should track reasonably well over several octaves, but it is not designed to be as accurate as a real VCO such as the ORBITAL would be.

YOU’RE READY TO ROLL ! ENJOY YOUR NEW MODULE !