ROSA

build guide
difficulty: ☆☆☆[1]

∞

Hi fellow!
Just a quick intro before starting,

what to have on hand

1. Soldering Iron with temperature control and an interchangeable tip
2. Solder wire
3. Small flat screwdriver
4. Knurled nut tool (optional)
5. Pliers (optional)
6. Multimeter (optional)

If you want to refresh yourself a bit about soldering stuff you can watch this video[2] by GreatScott!

A tool that can help you checking the components on the board is the interactive bill of materials. Rosa has 3 of them. One for each board.

Download the .zip file on ROSA's module page and unzip it. Inside you'll find the .html *ibom* files. Open them with a browser. You can use them to check where a component is located on the board.
Once downloaded it works fine also offline.

The iboms show all ROSA components but most of them are already pre-soldered on the surface of the board (SMD).
We just need to solder the through hole ones (THT) that are listed in this build guide.

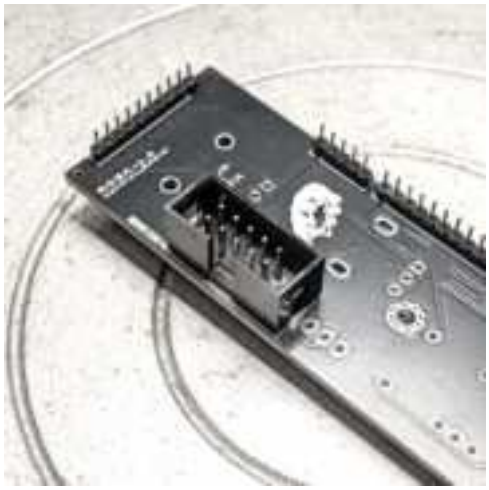
BE CAREFUL NOT TO TOUCH THE SMD COMPONENTS WHILE SOLDERING THE THT ONES

It's really easy to lose a tiny SMD resistor or capacitor. Pay attention when soldering parts that are close to other already in place.

[1] All the components are basic and simple to locate and solder – the three stars are justified by the fact that on the board there are a few 0402 SMD components that need to be avoided when soldering. The trickiest part is soldering the 2.00mm headers: use a thin soldering iron tip.
[2] https://www.youtube.com/watch?v=VxMV6wGS3NY

ROSA has three PCBs and a panel. Let's begin with the control_board.

2.00mm pin headers and eurorack power socket



Place the pin headers matching the drawing on the PCB. Longer pins need to point outside.
Solder them.
PLEASE *DO NOT MESS WITH THE TINY AND HELPLESS SMD COMPONENTS ALREADY SOLDERED ON THE BOARD*
Then place the Eurorack Socket matching the drawing on the PCB and solder it.
Check the pictures if you have any doubts.

tip: solder one pin and check. If the header or socked is aligned with the PCB solder all the other pins. Doing that later can be messy.

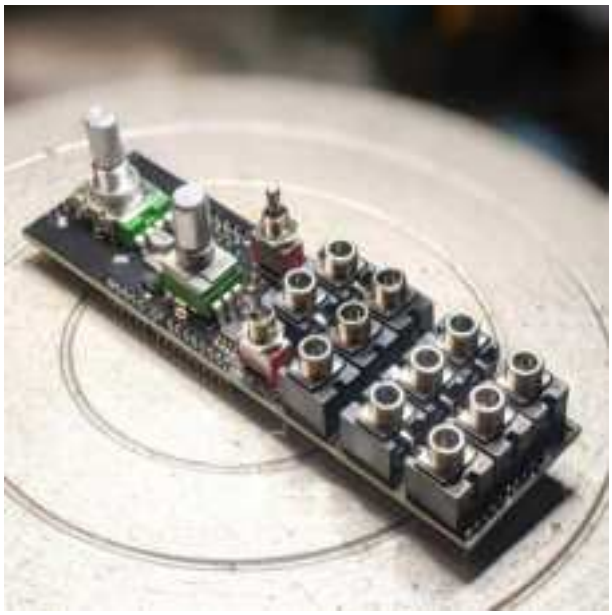
1	J20	Conn_01x5_Pin
3	J4, J8, J18	Conn_01x10_Pin
1	J16	Conn_2x5_2.54mm_Boxed_Header

control_board standoff

Let's complete the control board, turn it over and follow these steps:

1. Insert the longest screw into the hole in the center of the PCB.
2. While keeping the screw in place with your finger, flip the board and slide on the thread one of the two washers.
3. Tighten with your hand the female-male standoff to the screw.
4. Store in a safe place the female-female standoff, the remaining washer and the short screw, we'll need them later (they like to hide on the floor and they are so tiny it becomes an adventure picking them up).

jack sockets, toggle switches, potentiometers



do not solder them yet: just place all of them in the right place and move to the next step.

Toggle switches: to reduce clearance tighten one of the two nuts to the lever. You don't need the round locating ring.

1	RV1	RV112FF-40B1
1	RV4	B10k (center detent)
1	SW2	SPDT_Sub_On_Off_On
1	SW1	SPDT_Sub_On_On
11	J1, J2, J3, J6, J7, J10, J11, J12, J13, J14, J15	PJ398SM aka "*Thonkiconn*"

front panel

Put the panel on and tighten the nuts.

Now you can solder all the front panel components.

tip: we are soldering them now to ensure that all the mechanical parts are aligned with the panel. This reduces the stress to the components.

The most common mistake at this stage is missing a solder joint or a "cold" connection. Check all of them one by one before moving to the next step.

Now a mandatory pause: time to learn more about manual lever espresso machines.

we just need to solder a few more bits on the brain_signals board.

Grab the brain_signals PCB.

2.00mm pin headers

Place the pin headers matching the drawing on the PCB[3]. Longer pins need to point outside.
Solder them.
PLEASE *DO NOT MESS WITH THE TINY AND HELPLESS SMD COMPONENTS ALREADY SOLDERED ON THE BOARD*
Then place the Eurorack Socket matching the drawing on the PCB and solder it.
Check the pictures if you have any doubts.

tip: solder one pin and check. If the header or socked is aligned with the PCB solder all the other pins. Doing that later can be messy.

2	J2, J3	Conn_01x10_Pin
1	J17	Conn_2x6_2.00mm_Pin

We are done with the soldering!
Let's stack PCBs.

[3] Ignore the SCAN text on the silkscreen. It's from an obsolete component, we do not need it.

the sandwich

1. Stack the control_board and the brain_signal_board.

   Do not bend the PCBs, wiggle them back and forth until they match.

2. Place the remaining washer on the screw.

3. Tighten with your hand the female-female standoff

4. Stack the brain_scan_board to the other two.

   Do not bend the PCBs, wiggle them back and forth until they match.

5. Screw the remaining screw (the short one) in the standoff.

   the sandwich is complete.

knobs

1. Before placing the bigger knob (Rogan) on the D-shaped shaft, use the provided round brass adapter.
2. To screw the Rogan knob, use only the provided American standard hex key (the thick one, the other one is for the rail screws).
3. Place the other knob aligning it with the dent of the potentiometer and tighten its screw with a flat screwdriver.

jumpers

Carefully fit the 4 jumpers[4] as shown in the picture.

THE TWO ROWS AT THE BOTTOM MUST BE LEFT EMPTY

Any other configuration of these plugs may cause a malfunction of the module or its self-destruction.

before powering it up

- A good practice is to check the power header for shorts with a multimeter.
  tip: follow this tutorial[5] by Quincas Moreira - aka SynthDiyGuy if you have any doubts on how to perform the procedure.

[4] Rosa has a predisposition for a dedicated expander (SPINE) and this pin header and plugs are the things that make their connection possible.
[5] https://www.youtube.com/watch?v=qS0SoIiiQCo

done! enjoy your new

ROSA

find us:

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