



**THONK SYNTH**  
**T09 MUL**  
**EURORACK MULTIPLE**  
**Eurorack DIY Kit**  
**Build Instructions**



## OVERVIEW

For the most recent version of this document please visit

<http://thonk.co.uk/mul>

This document should be used in conjunction with the relevant user manual.

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All Thonk kits are sold under our standard Terms and Conditions -

<http://www.thonk.co.uk/faq/>

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## DIY INSTRUCTIONS

This document gives detailed instructions that assume you have purchased a complete kit from [www.thonk.co.uk](http://www.thonk.co.uk). It also assumes no previous knowledge of electronics. To learn to solder try [http://youtu.be/I\\_NU2ruzyc4](http://youtu.be/I_NU2ruzyc4) and the Adafruit guide to excellent soldering – <http://bit.ly/1177tF4>

Watch and understand that whole YouTube video! If you're not achieving the results shown in the video then you need to buy new tools or seek advice.

**You will not end up with a working module otherwise.**

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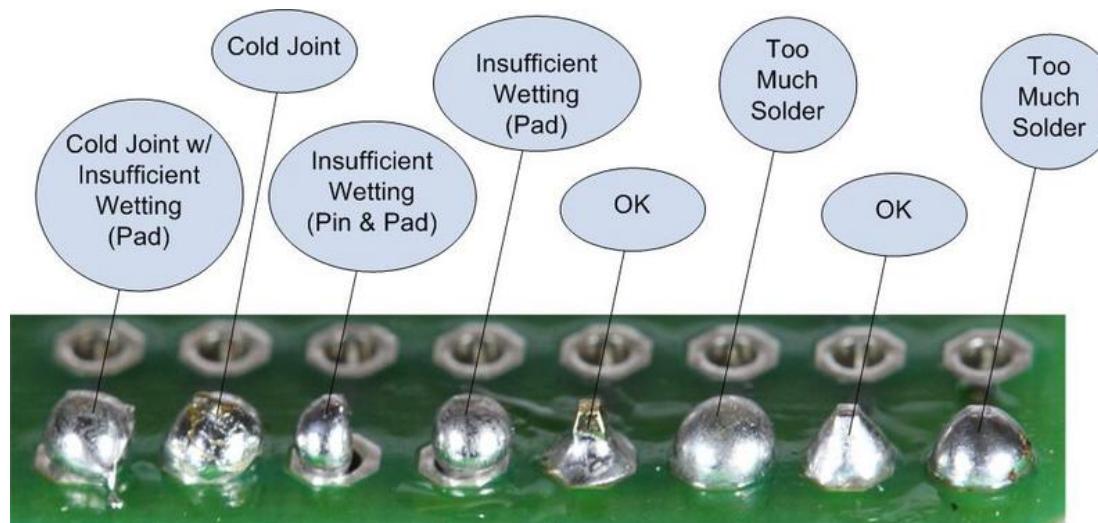
## TOOLS REQUIRED

Solder, soldering iron, diagonal cutters AKA snips AKA side-cutters, masking tape. A Digital Multimeter is always helpful for checking for bad solder joints and continuity. Thonk sell a range of inexpensive tools here - <http://bit.ly/1jxqF3n>

## SOLDER JOINTS

Your solder joints should look like those shown as 'OK' below, they should have that neat conical shape on **BOTH sides of the PCB**. If they don't look the same on both sides then stop! Work out why from the soldering guides linked and don't continue until you are getting those results.

This isn't just OCD talking, you are very likely to end up with a destroyed, damaged or defective unit if you're not hitting that standard.



This photo is from the [Adafruit guide to excellent soldering](#) and is reproduced under an Attribution-Sharealike creative commons license - <http://creativecommons.org/licenses/by-sa/3.0/>



## BUILD INSTRUCTIONS



In your kit you will have the above items. Within the bag labelled 't09 MUL Components' you will find all of the jack sockets and hardware needed for this build, alongside the module panel and PCB which have been wrapped together. A power cable is not required or included in this kit as this is a passive module.



PCB Front



PCB Back



1.

First locate the PCB and  
12 Thonkiconn jack sockets.



2.

Remove the nuts from each of the  
sockets and put the nuts aside until  
step 6.



3.

Place the 12 Thonkiconn jack sockets into the positions shown on the front side of the PCB with the socket footprints.

**DON'T SOLDER YET**

Resume soldering at step 7.



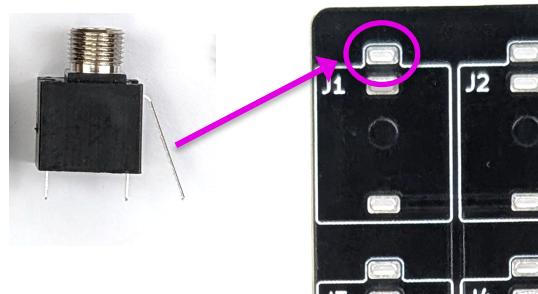
4.

Check that the 3 legs of each jack socket is inserted into the correct pads as shown.

The longer leg of each socket should be in the uppermost pad of each footprint as shown on the images to the right.

**DON'T SOLDER YET**

Start soldering at step 7.



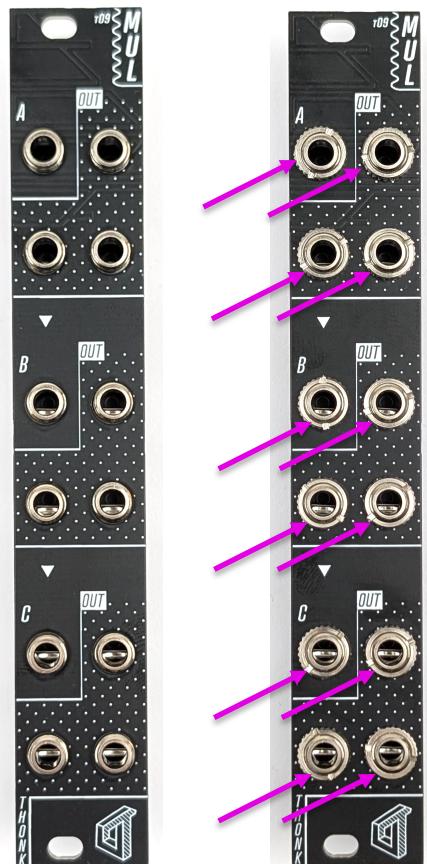
## 5.

Carefully place the panel over the sockets ensuring they all stay in place.

Whilst keeping the PCB and Panel assembly held together, secure the panel to the sockets with the 12 knurled nuts. Be careful not to overtighten the nuts or pull the sockets off the PCB.

**DON'T SOLDER YET**

Start soldering at step 7.



## 6.

Flip the module over so you are looking at the back of the PCB.

Putting pressure onto the board whilst you are soldering is usually enough to keep the components in place. However, as this kit has few components holding the panel and PCB together we advise using pieces of masking tape at points around the module assembly to help hold everything level between panel and PCB.

**DON'T SOLDER YET**

Start soldering at step 7.





7.

First solder just the bottom pin of each socket as shown.

Work slowly and carefully ensuring that the solder is flowing into each pad and your solder joints look like the example from the start of this document.

Check the examples at the top of the page if you aren't happy with your solder joints. The information provided will advise you on how to remedy any issues.



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8.

Check that the 12 sockets are level between the panel and PCB.

The black plastic of each socket should be sitting flush to the board and the panel sitting level against the top of each socket.

**DON'T SOLDER YET**

**Resume soldering at step 9.**

With only one point on each socket soldered you can adjust the position and level if necessary by reapplying heat and reflowing the solder.

Once you are happy with the positioning of the components proceed to step 9.





9.

Continue to solder all remaining points on each of the sockets.

There should be 24 points remaining to solder.

Again, work slowly and carefully ensuring that the solder is flowing into each pad and your solder joints look like the example from the start of this document.



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Your Thonk Synth t09 MUL is now complete.

As this is a passive module no power cable is required. All that is left to do is adding the module into your case with the provided screws.

Follow the link below for further info on using the module and to explore other modules in the Thonk Synth range.

<http://thonk.co.uk/mul>

