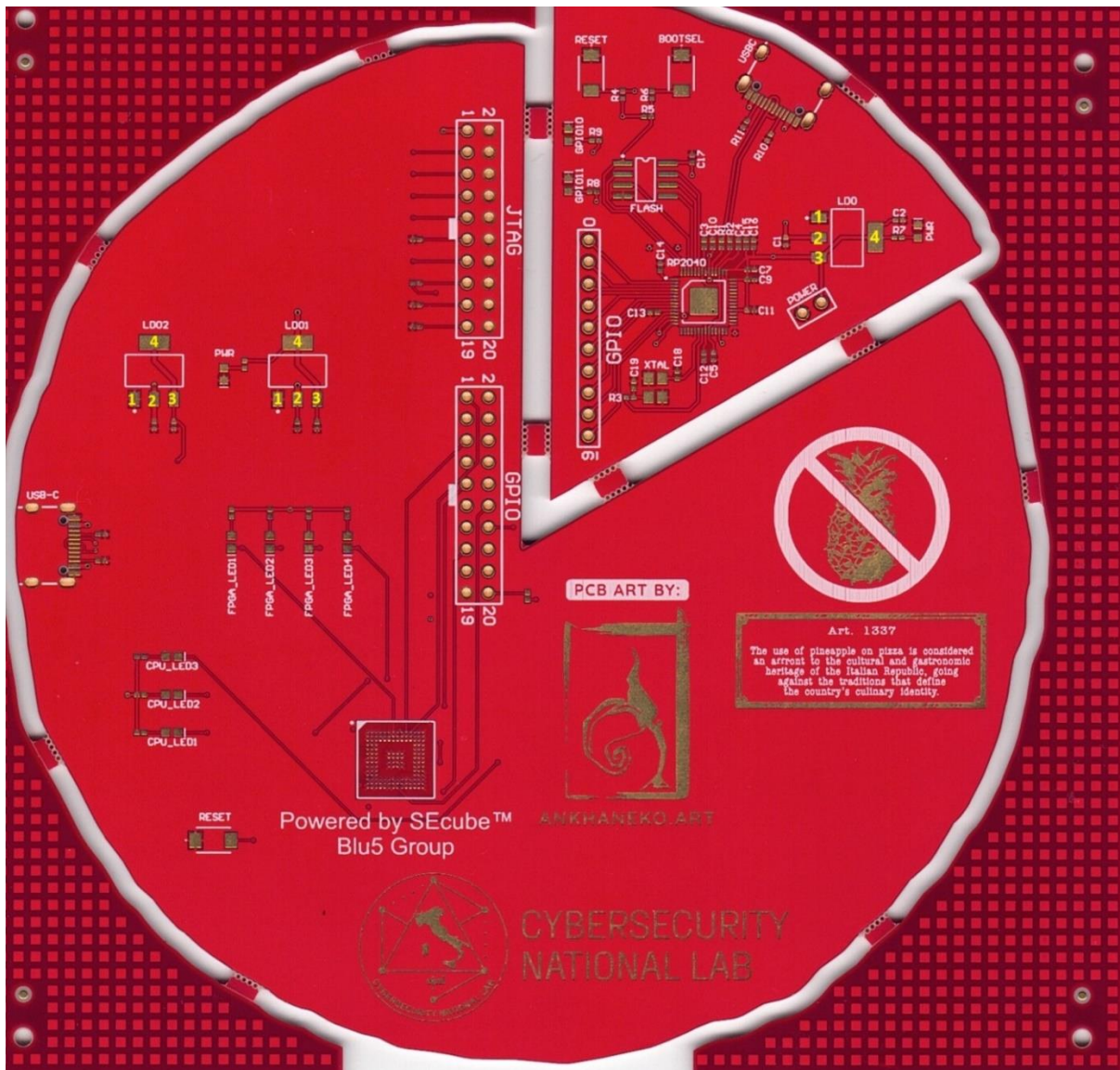


Pizza Rework Project

Pizza

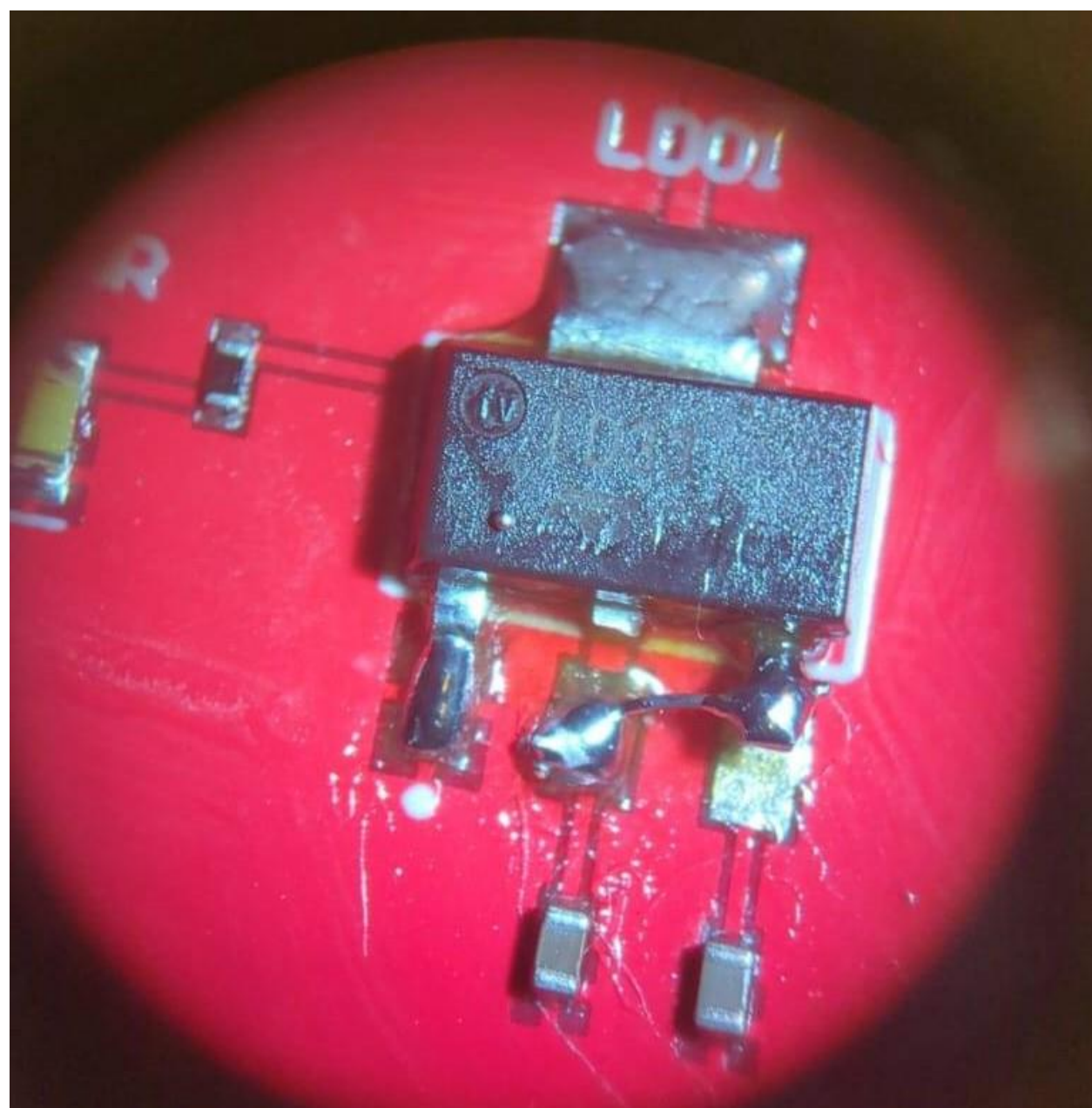
1. LDO Rewiring



Pads 2 and 3 are inverted, and as a result, pad 4 is incorrectly connected to pad 3 instead of pad 2.

Pins 2 and 4 of the component are internally connected, so it is not necessary to connect both of them.

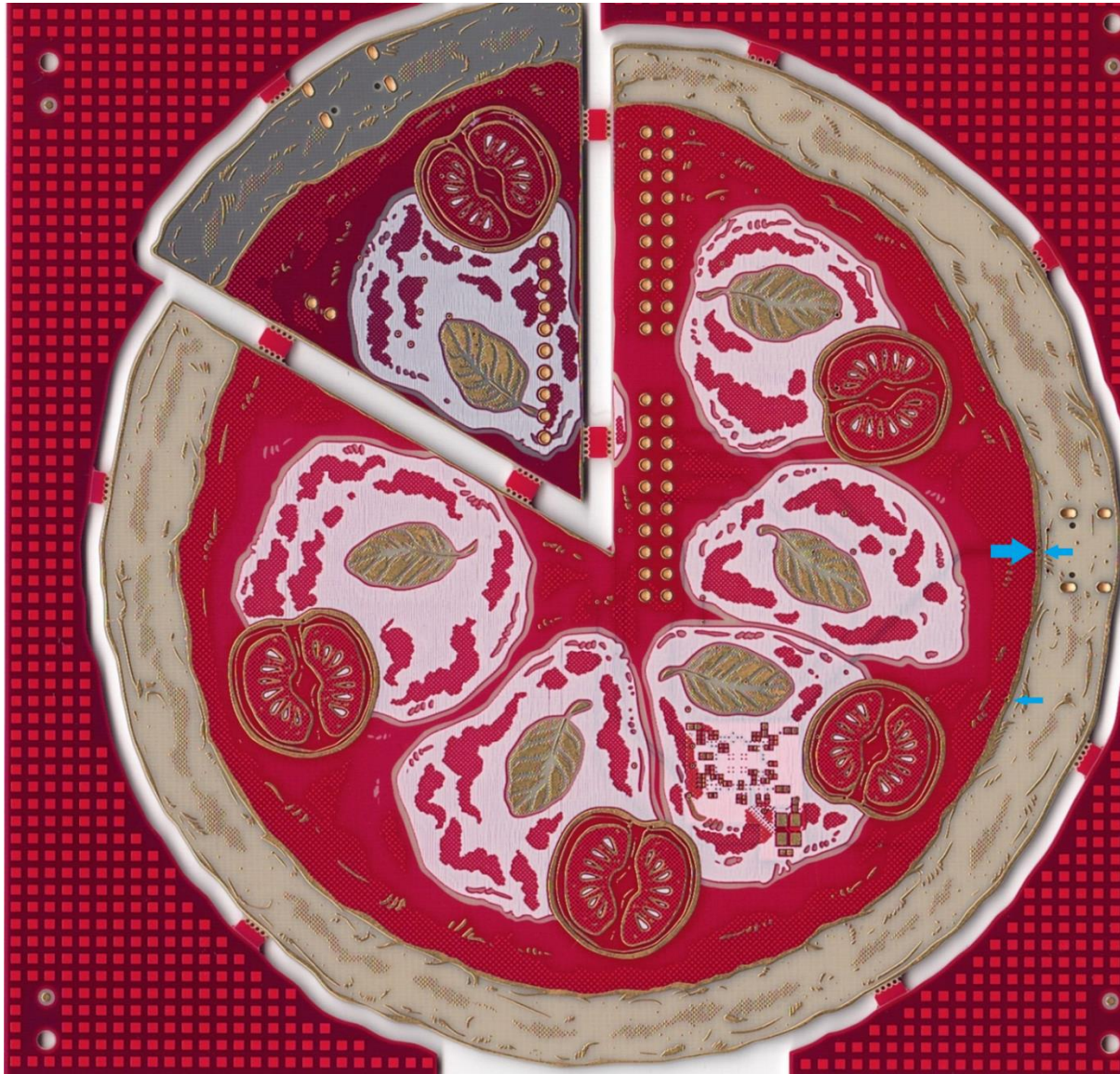
One solution we have found is to cut pin 2 of the component, lift pin 3, and solder it onto pad 2 (see photo below).



2. Removal of Short Circuits

WARNING: Pay attention in the case of the two nearby vias, because on the layer immediately below, there are traces connected to them.

There is a short circuit on the front of the board due to some vias ending on the graphic design. It can be easily resolved by cutting a few traces on the top layer.

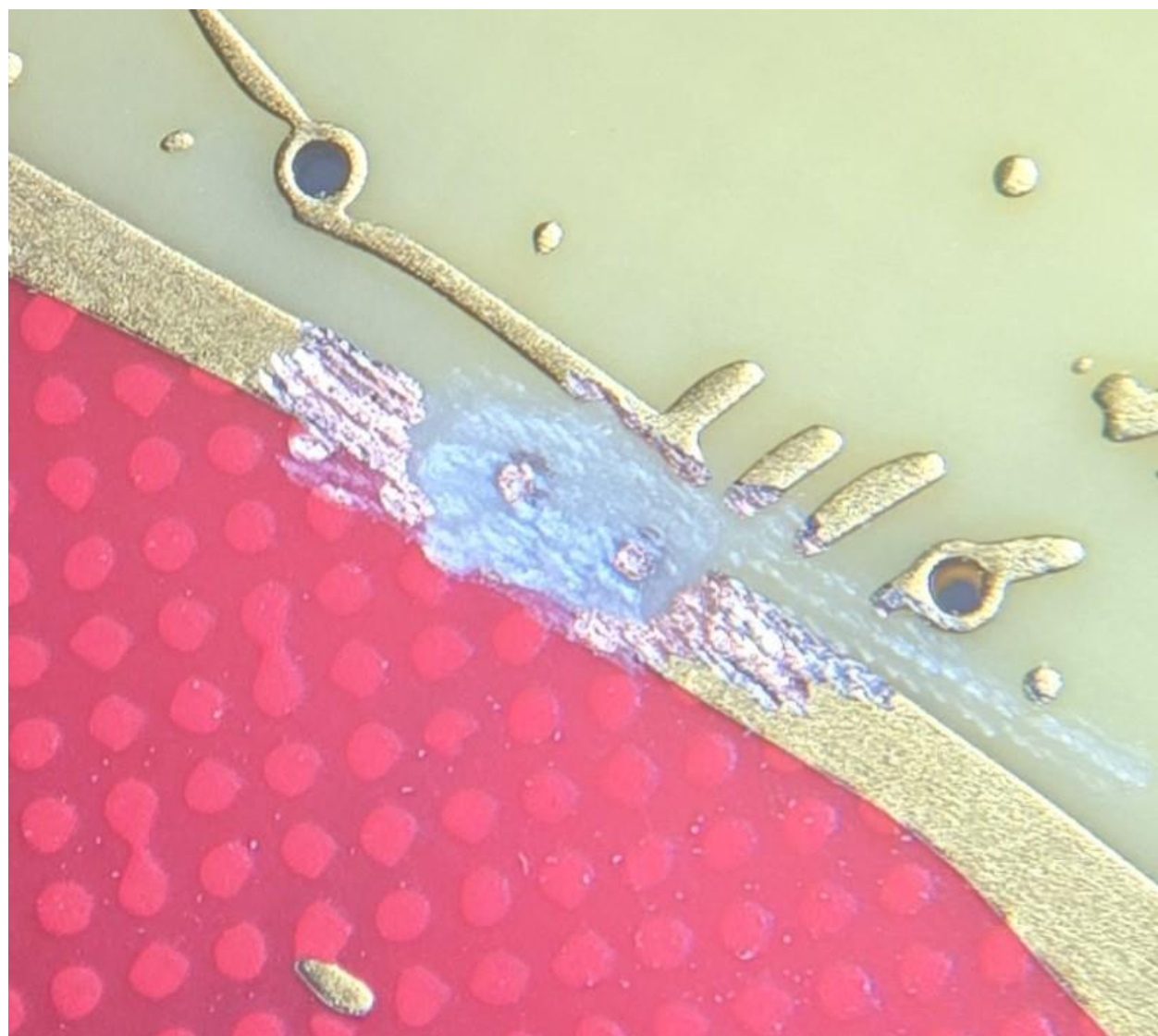


The two nearby arrows indicate two vias that intersect the edge of the pad, while the arrow below points to another via that should be isolated.

Particular attention must be paid to the two adjacent vias because they have a trace on the layer immediately below.

In the case of the adjacent vias, I achieved good results by simply drilling over them, while for the single one, I tried to isolate it (see photo below).





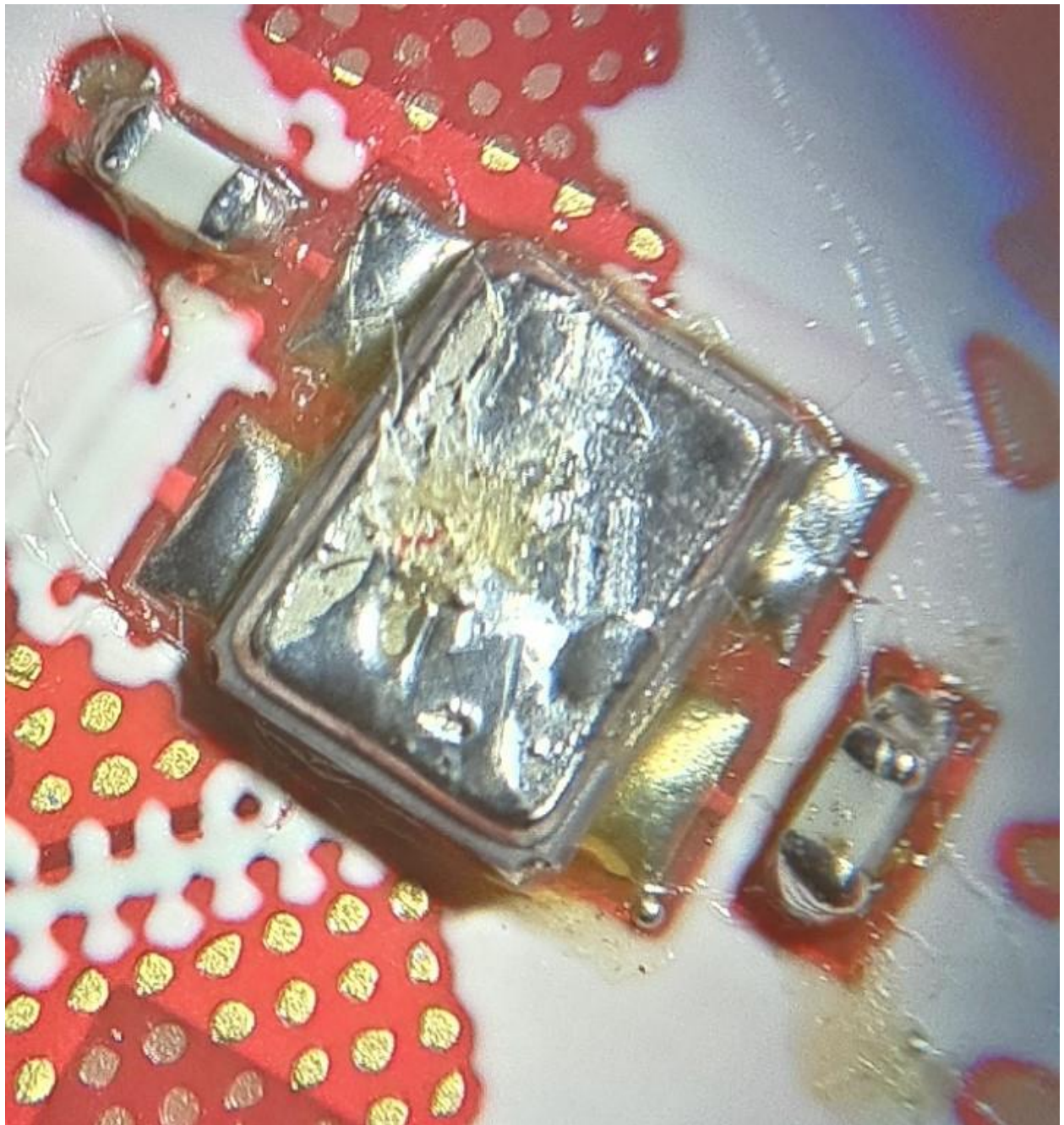
3. Quartz Oscillator Rotation

WARNING: It is highly discouraged to use a hot air station, as this area contains a large copper rectangle connected to several vias leading to the SEcube. This would transfer a lot of heat, potentially damaging it.

The quartz oscillator is installed in the wrong direction. To fix it, it needs to be rotated by 90 degrees. The footprint allows for good compatibility even in that orientation.

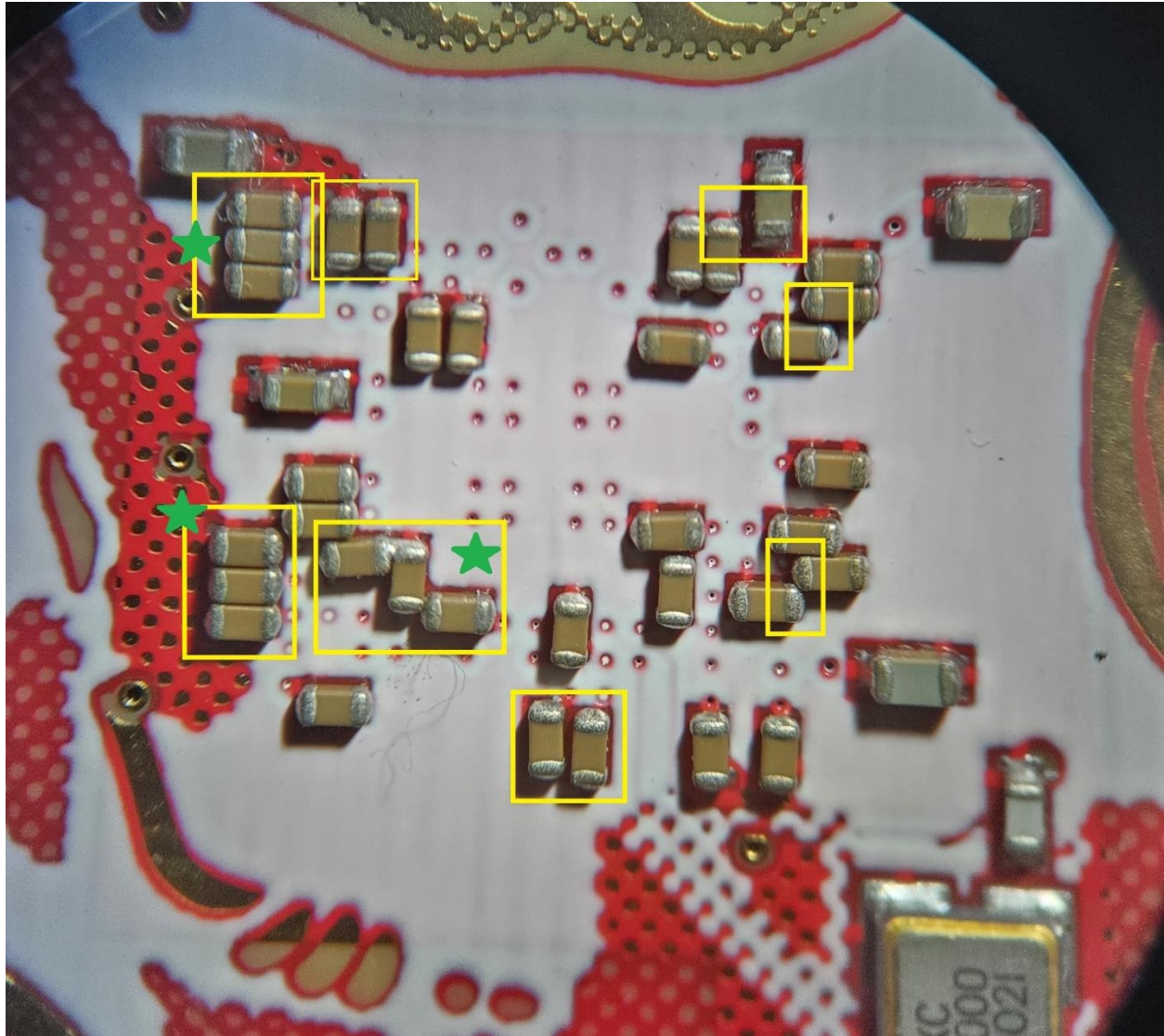


Result:



4. Capacitor Removal

WARNING: It is highly discouraged to use a hot air station, as this area contains a large copper rectangle connected to several vias leading to the SEcube. This would transfer a lot of heat, potentially damaging it.





The extreme proximity of the capacitors under the SEcube (BGA microchip) on the pad has caused the formation of solder bridges between some pads. The groups of capacitors in the yellow squares are problematic; those marked with a green star definitely need to be addressed, while the others depend on the situation of the individual board.

Not all capacitors are strictly necessary; the goal is to keep as many as possible.

In the case of triplets (all those with the star), it is suggested to remove the central capacitor. For the other groups, it is recommended to proceed only if necessary and to prioritize removal in this order, referring to the CAD view with the following colors: capacitors with a white-blue checkered pad, capacitors with a red-blue checkered pad, and others.

Slice

1. LDO Rewiring

Refer to the LDO Rewiring of the Pizza.

2. Removal of Short Circuits

There are short circuits on the front of the board due to some vias ending on the graphic design. They can be easily resolved by cutting a few traces on the top layer.

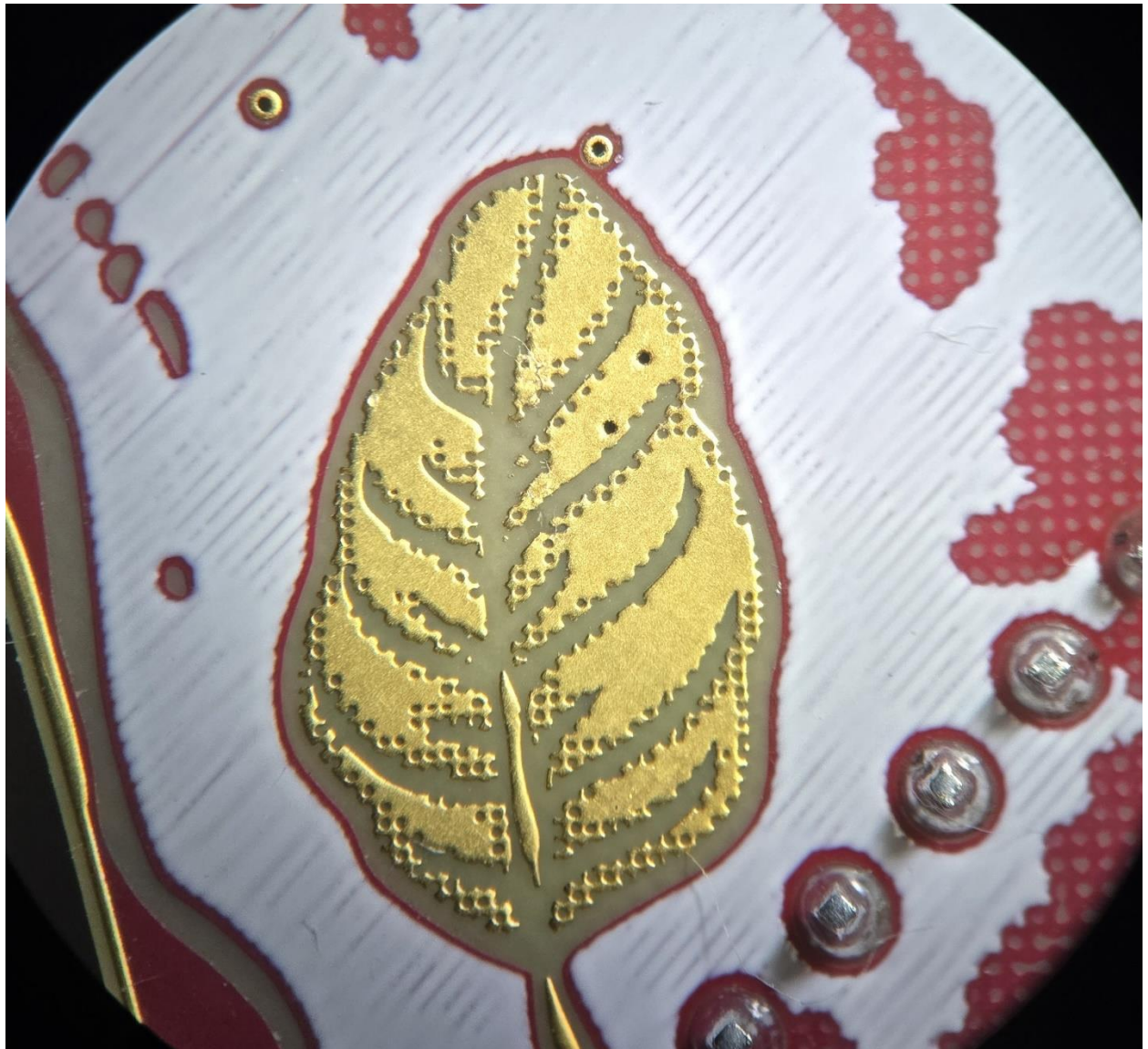


The blue arrows indicate the problematic vias, while the green ones mark the two points that I consider best for cutting the traces, as they are very thin (in the photo, the modification to the vias on the "tomato" has already been applied).

Tomato result:



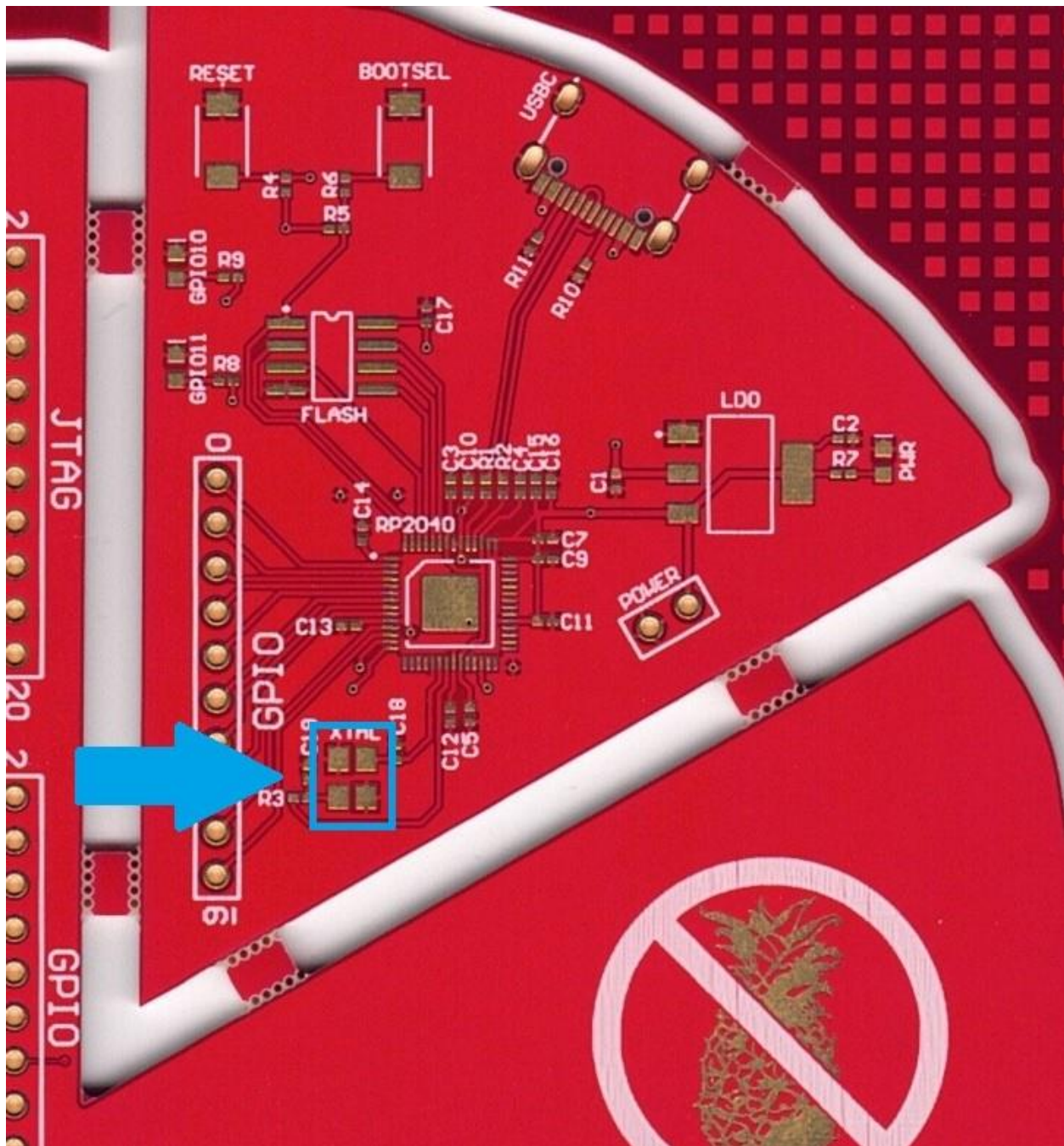
Before and After Basil:





5. Quartz Oscillator Rotation

Refer to the Quartz Oscillator Rotation of the Pizza.



Result:

