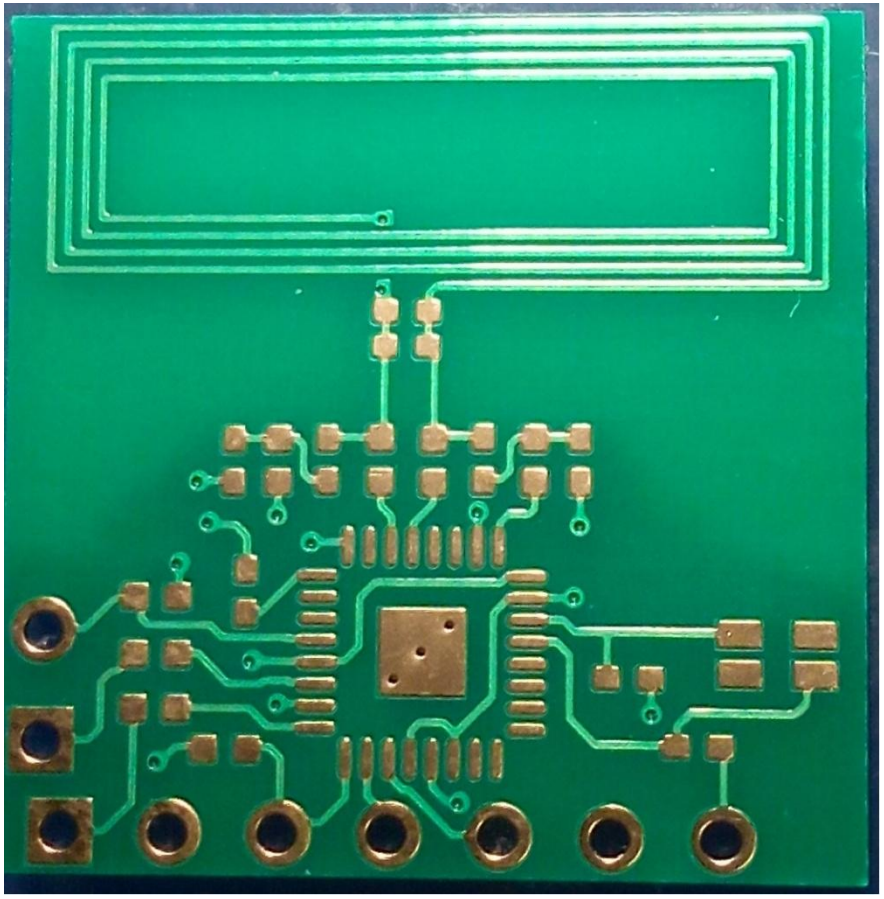
Small NFC reader

Assembly instructions

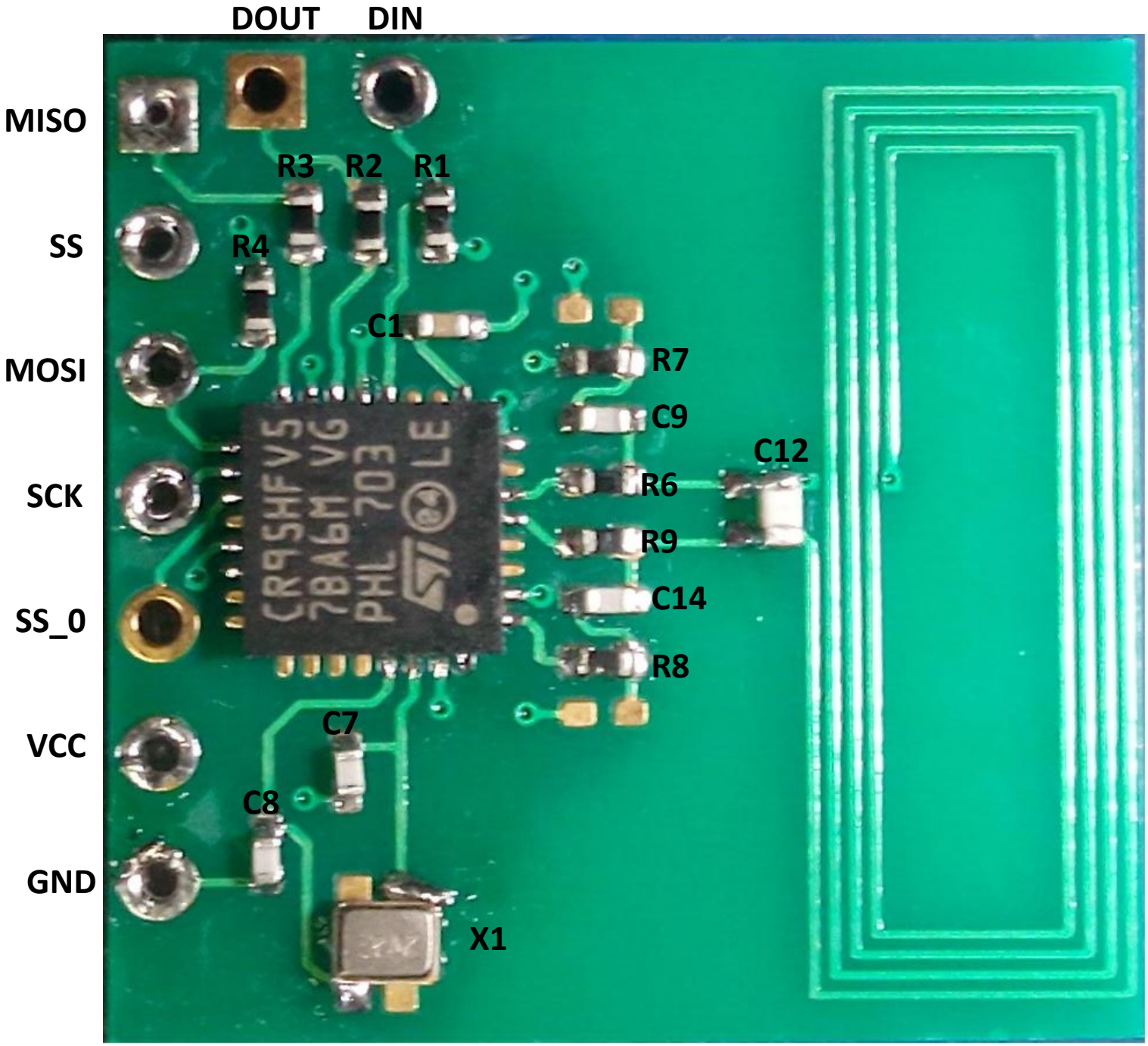


20 mm

20 mm

PCB thickness : 0.6 mm

ETR69


DOUT
DIN
MISO
SS
MOSI
SCK
SS_0
VCC
GND
R3
R2
R1
R4
C1
R7
C9
C12
R6
R9
C14
R8
C7
C8
X1

Bill of material:

C12=560 pF Ceramic (COG/NP0) 5% 0603 or 0402
C9, C14 = 150 pF Ceramic (COG/NP0) 0402 , Code : 490-3229-1-ND
C8,C7 = 15 pF Ceramic (COG/NP0) 0402 , Code : 490-3117-1-ND
C1=1000 pF Ceramic (X7R) 0402 , Code : 399-1032-1-ND

R6,R9 = 330 OHM 5% 0402 Code: 311-330JRCT-ND
R7,R8 = 0 OHM 0402 Code: 1276-3480-1-ND
R1,R4 = 3.3k OHM 5% 0402 Code: 311-3.3KJRCT-ND
R2,R3 = 270 OHM 5% 0402 Code: 311-270JRCT-ND

U1 = CR95HF (32VFQFPN) Code: 497-15737-1-ND

X1= CRYSTAL 27.12 MHZ Code: 490-5581-1-ND

All codes are from Digi-Key

What do you need:

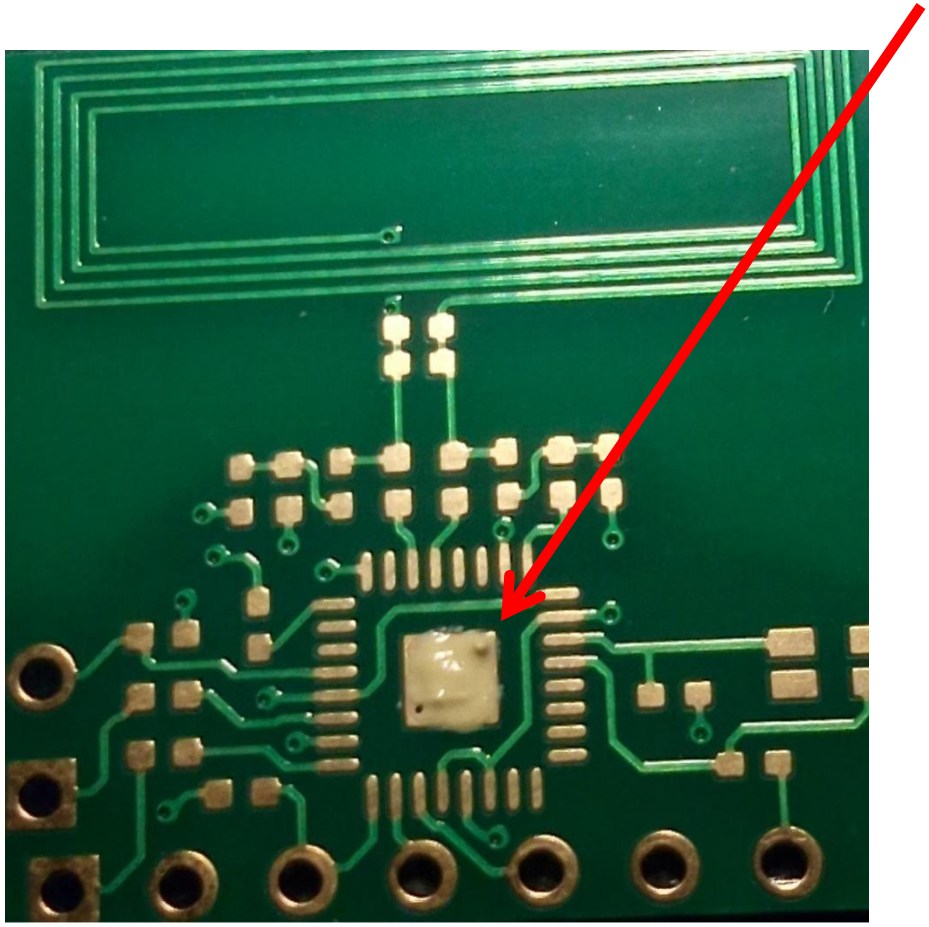
Thermal cream
to heat transfer

Solder cream

…..clamps for smd components
a magnifying glass , multimeter
and welder!

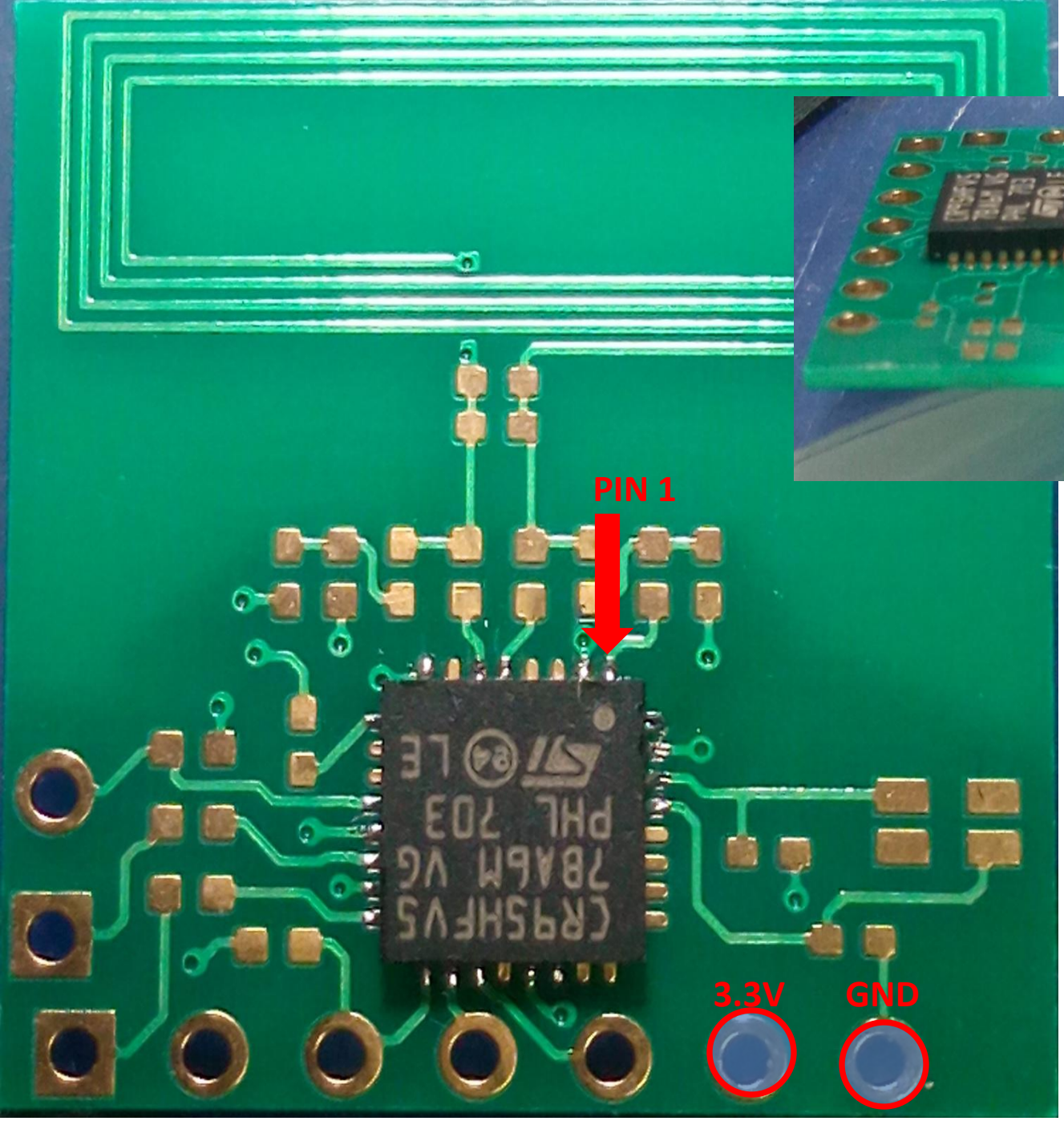
First you have to solder CR95HF:

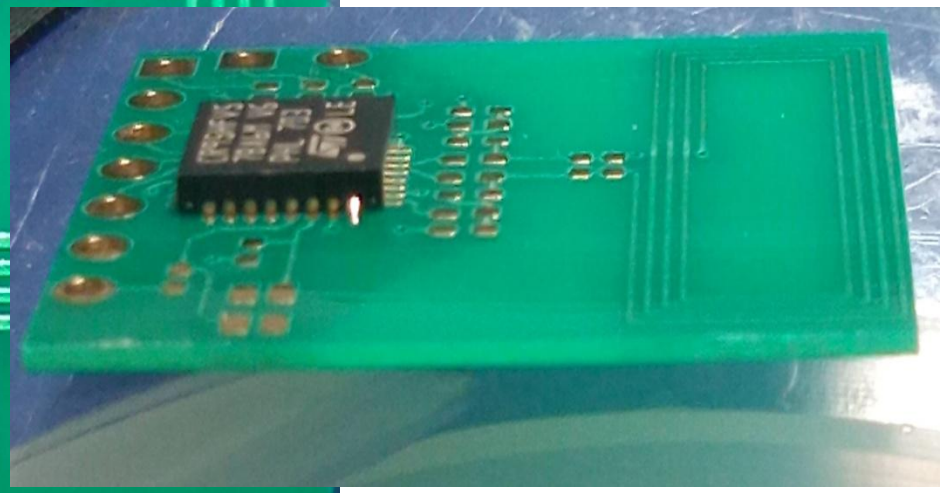
put with a toothpick the thermal cream on the central pad of the chip:



Then you can aligne CR95HF with pcb pad. Check each chip side!

Thermal paste prevents the chip from falling or moving too much during the alignment



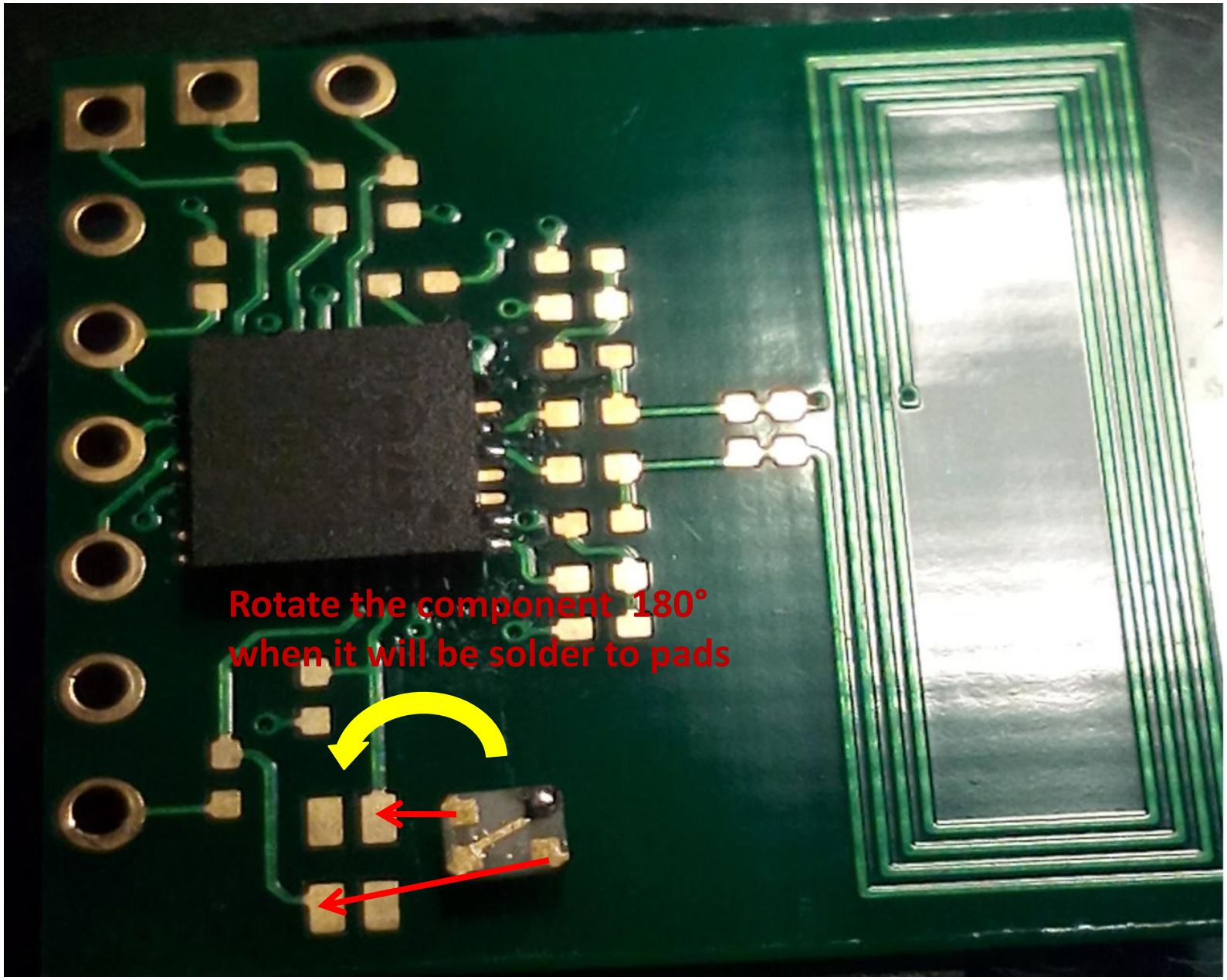


You can start to deposit the solder cream on one pin at the time and then solder the pad with Welder.

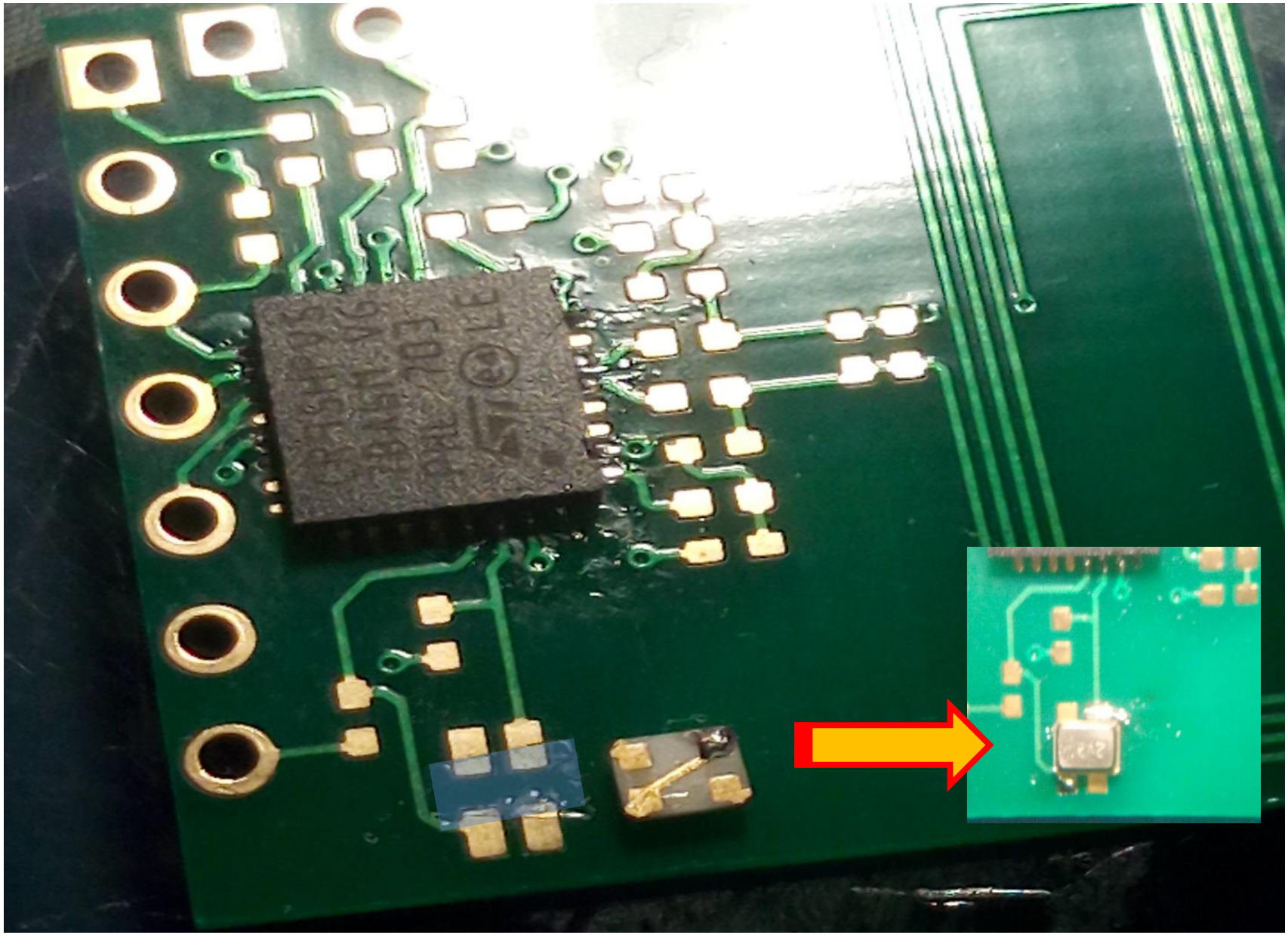
Pay attention to avoid shorts between pads.

When you solder all pads you can check if there is a short on power nets: 3.3 V – GND. You should find R > 20 MOhm

Crystal soldering …. There is a mistake on crystal footprint pcb so you need to fix it….:



To prevent short my advice is to put a little piece of adhesive tape like showed below:



You can now solder all passive components like in picture: