sPHENIX INTT

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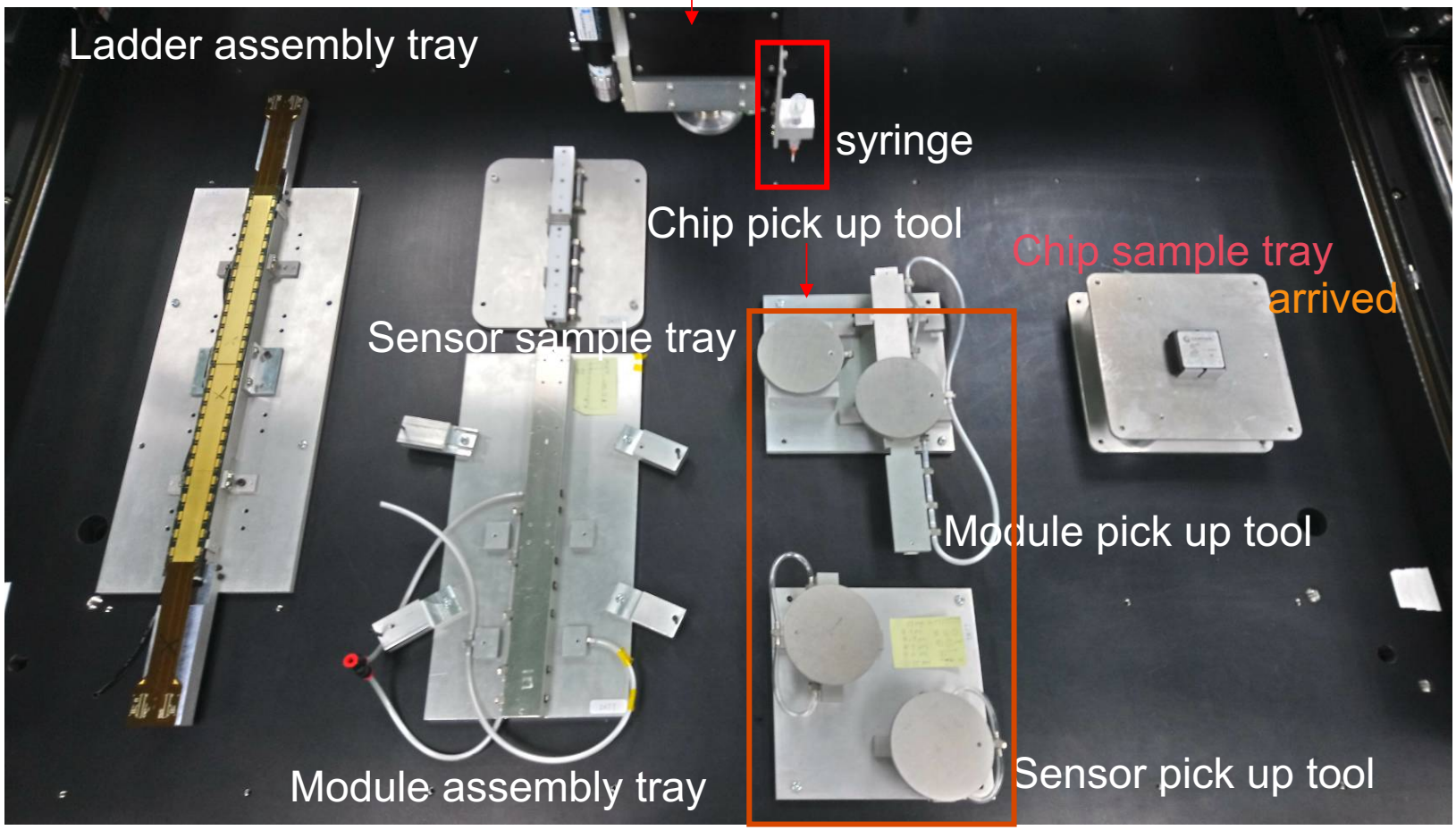
Assembly family status

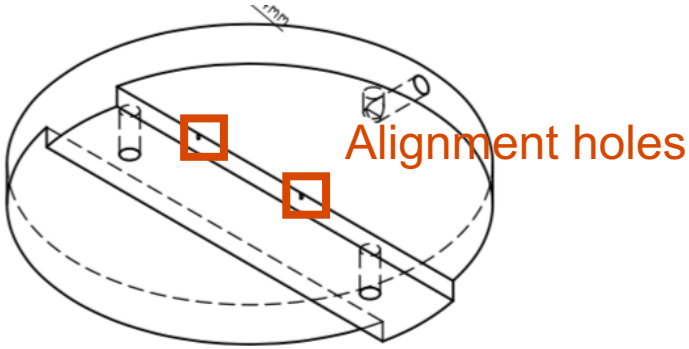


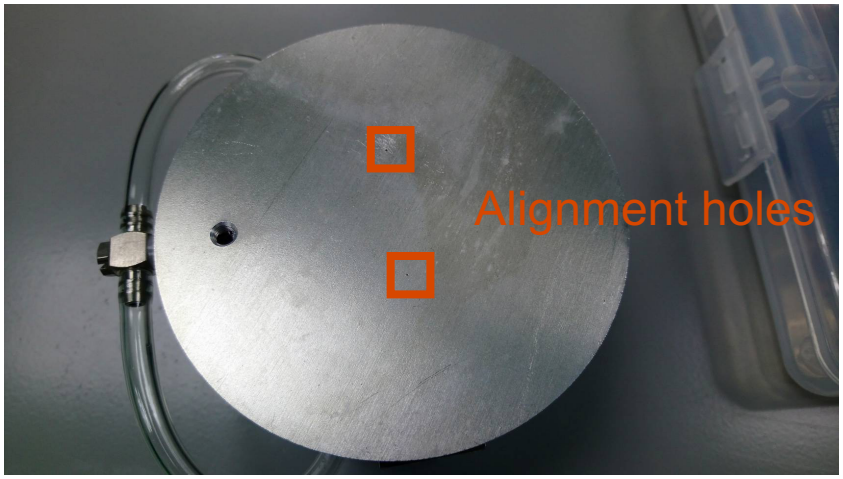
Pick up tool upgrade

Chip pick up tools upgrade

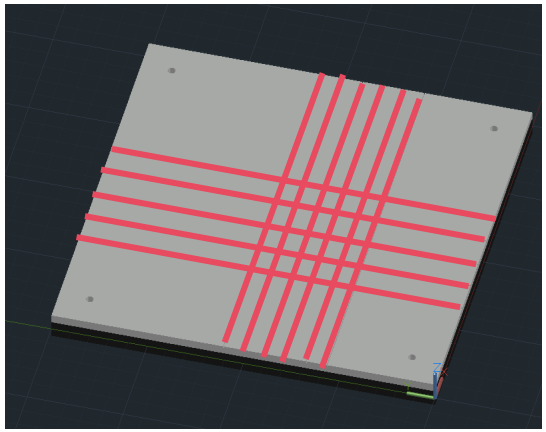
Alignment list :
Chip : diagonal corners
HDI : cross marks
Pick up tool : two alignment holes
Sensor : cross marks

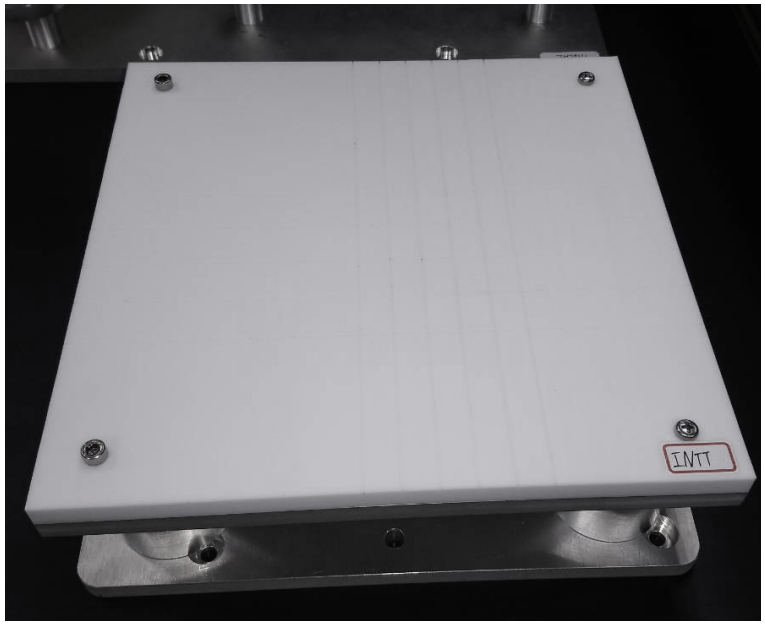
Sensor Type B cross mark distance
X : 101.5 mm
Y : 22 mm (measured by OGP)

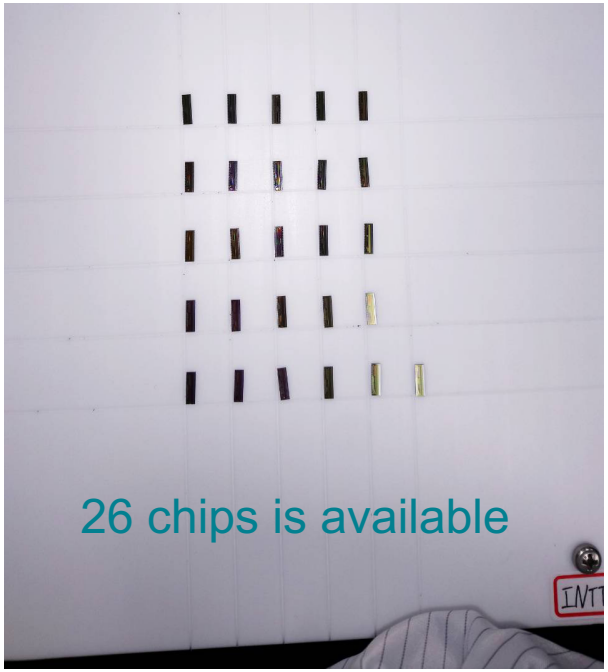




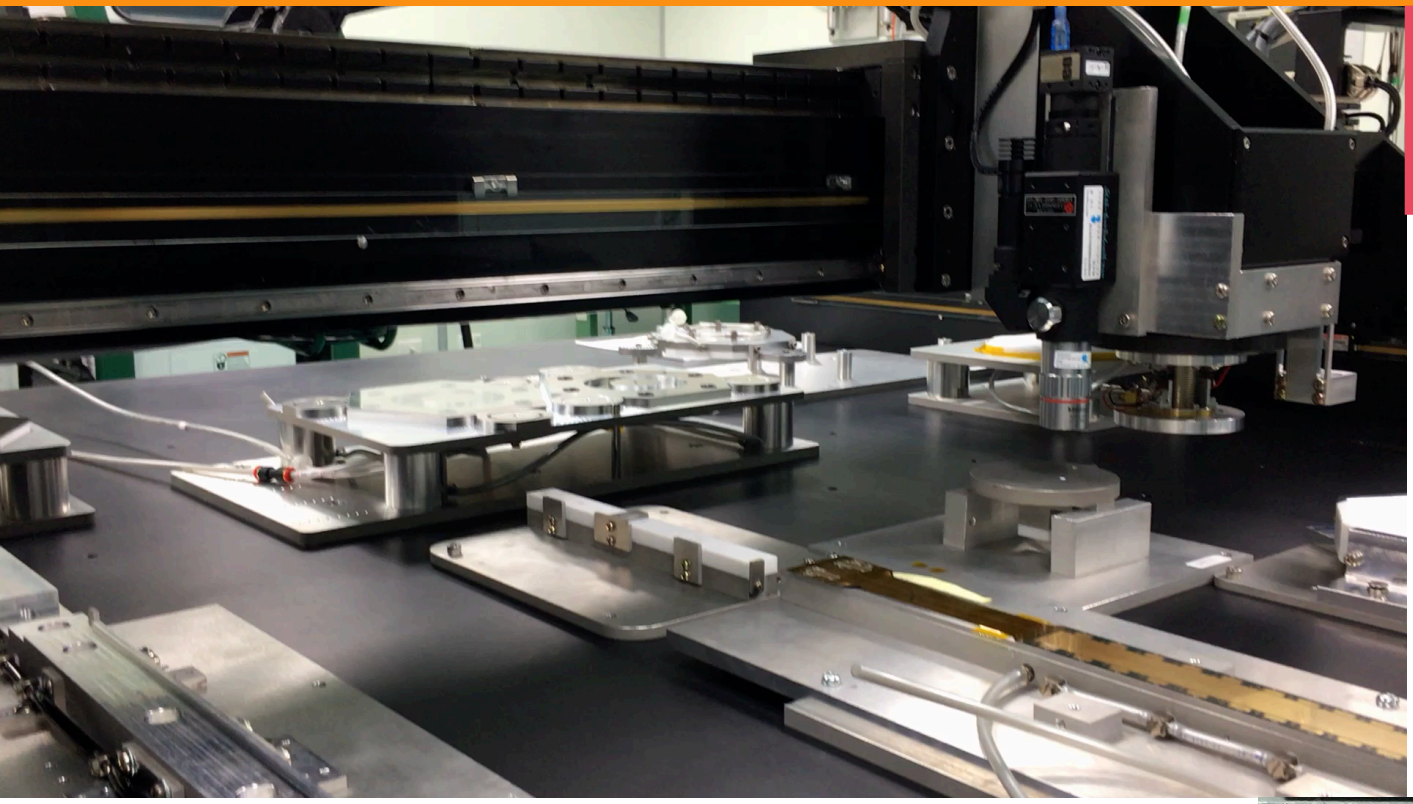
Assembly family status - chip sample tray





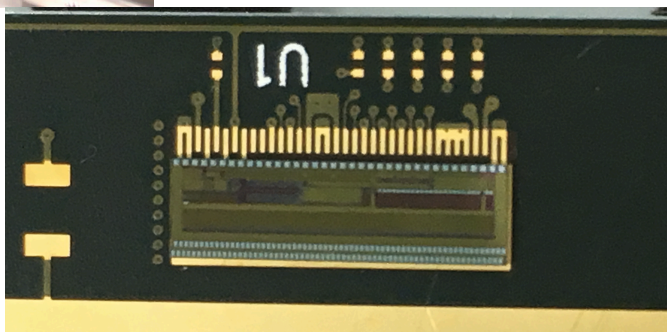


INTT assembly status

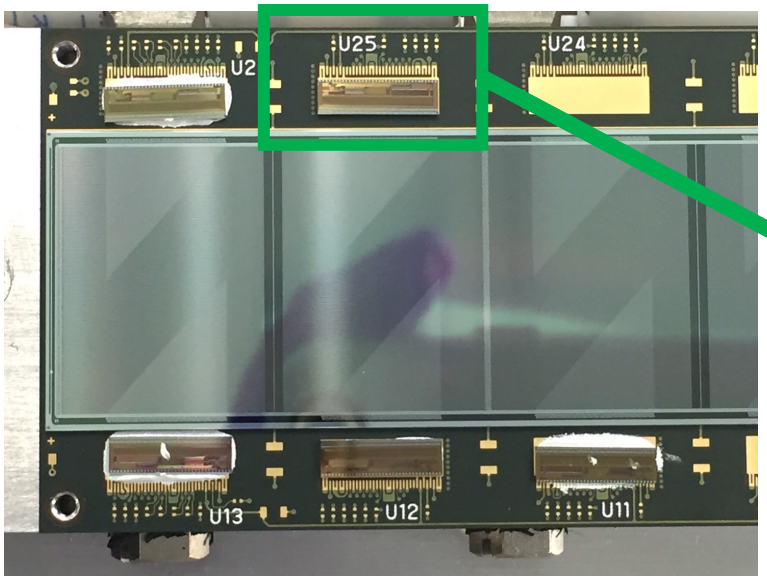


Chip assembly test

Tested without glue

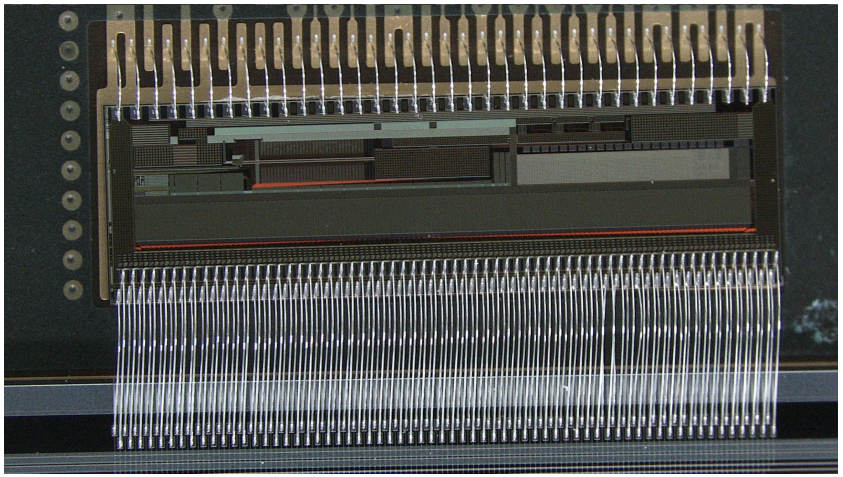


NCU bonding performance



Bonding in NTU

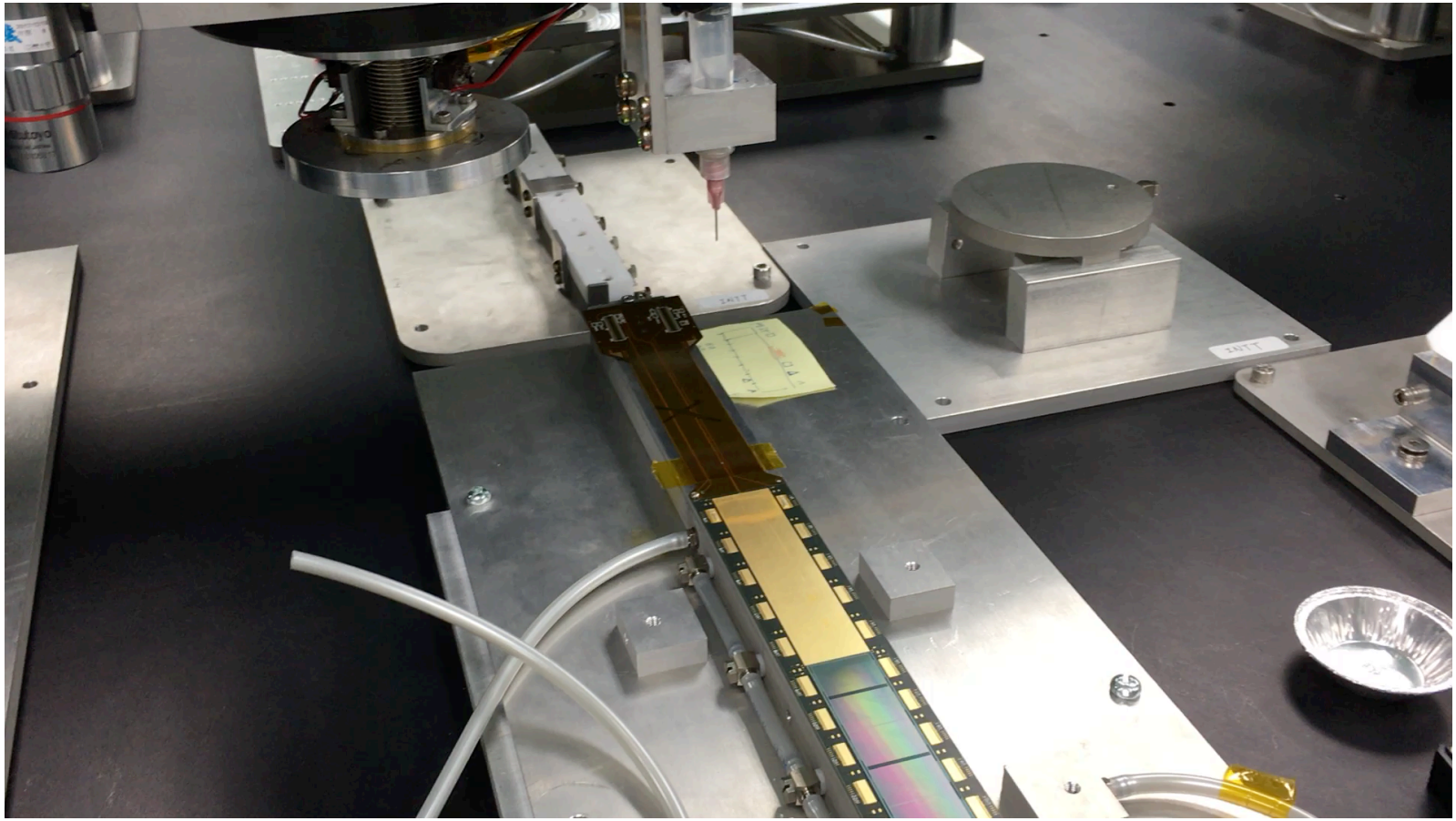
Bonding test



To test the property, put the chips by hand, glue is applied by glue mask

Glue test

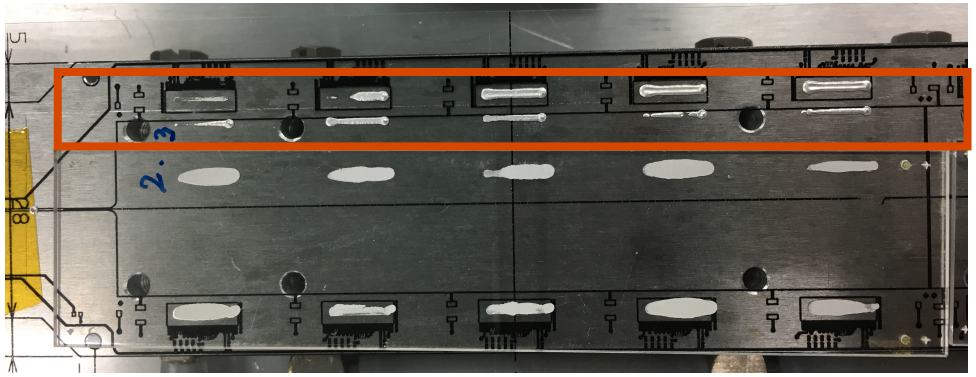
Start from 16 sec



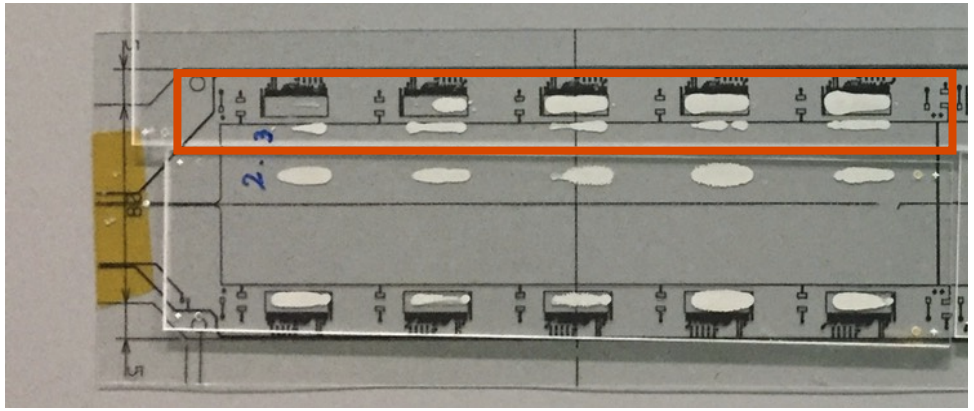
Glue test

Several parameters are tested:
pressure,
waiting time,
applying length,
Diameter of syringe tube

The glue dragging problem solved



Before

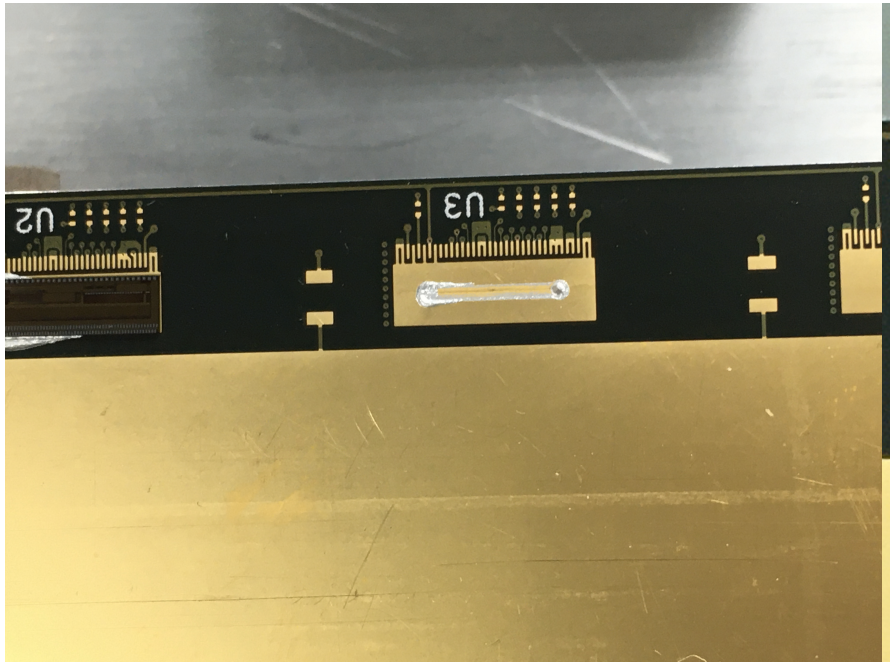


after

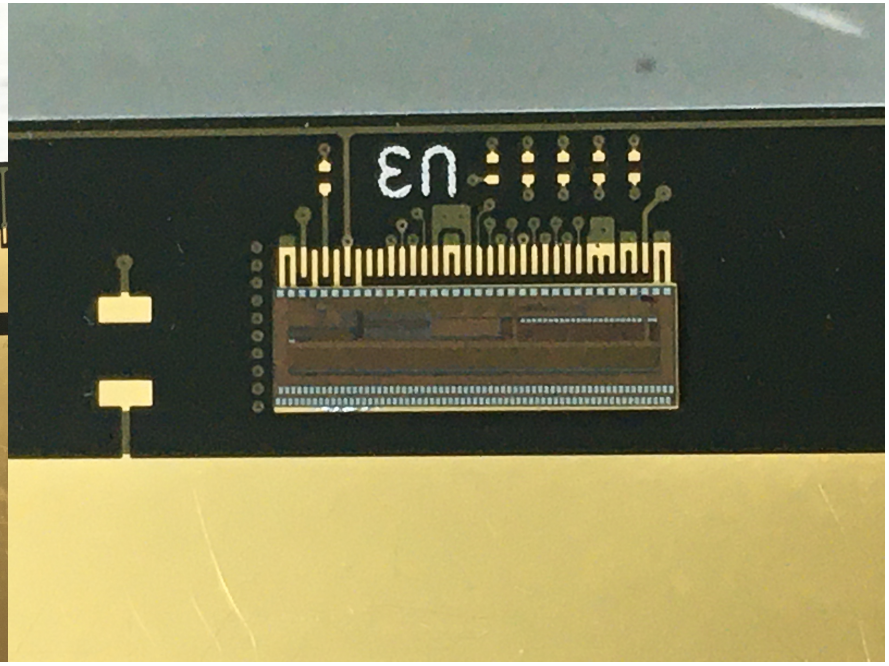
Glue test

First good assembly

Before



After



After mix, wait for 30 mins. To have the glue viscosity higher

Test Bench problem

- Plan : Having two Test Bench system in Taiwan (one in NCU, one in NTU)
- Problem : The one FEM-IB can not work so far.
- Solution : Is it possible to be fixed ?
  Produce a new one possible ?

Name	Request	In NCU
ROC	1	2
BCO/Start board	1	2
FEM	1	3
FEM - IB	1	1
VME crate	1	2
PCIe board	1	1 (can be purchased)

The necessary components

To do list

- This week :
  - Assemble and bond 10 good chips on real HDI in NTU
- Next week :
  - Take the calibration with this “semi - half module” in NCU.
  - Assemble the sensor type B on ”semi - half module” in NTU if all chips are good.
- Week 5/4 :
  - Take the calibration with this “half module” in NCU.

- If it is tested to be good, start the type A part assembly.

Schedule

- ~~Set up Test Bench in NCU.~~
- ~~Solve the glue dragging problem when using syringe to apply glue~~
- Test encapsulation.
- ~~Check the bonding performance with OGP~~
- Try to make a functional module in Taiwan.

Back up

INTT assembly family

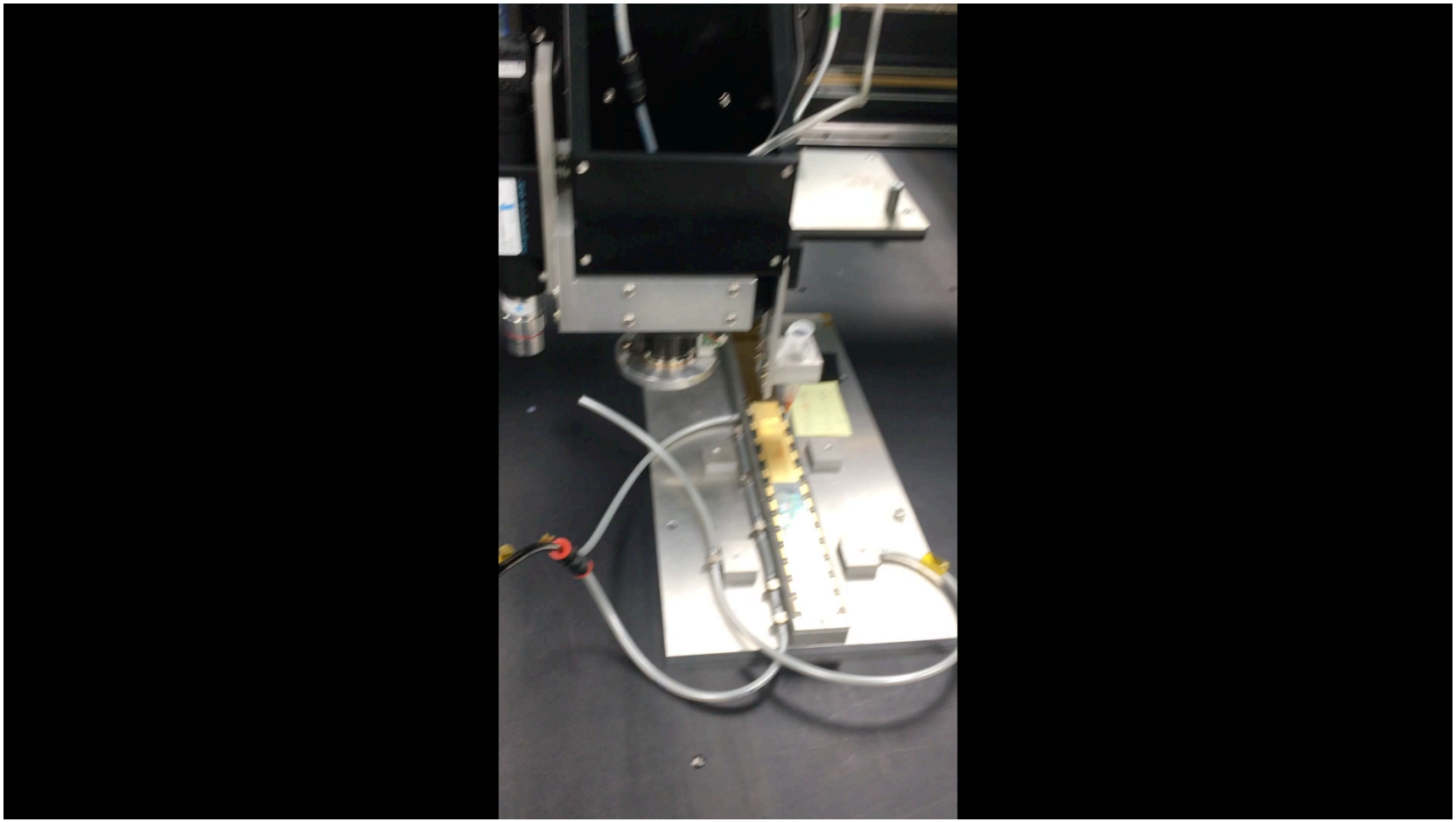
Name	amount	Status
Ladder assembly tray	1	In NTU
Module assembly tray	1	In NTU
HDI handle	3	3 In NTU
Chip sample tray	1	1 in NTU
Sensor sample tray	1	In NTU
Chip pick up tool	1	In NTU
Sensor pick up tool	2 sets (1 set : type A and B)	In NTU
Module pick up tool	1	In NTU
Glue mask	2 sets (1 set :1 for sensor, 1 for chips)	2 In NTU
Shipping box	1	Designing

Summary : all the prototype tools are arrived

Syringe controlling test

2020/03/24

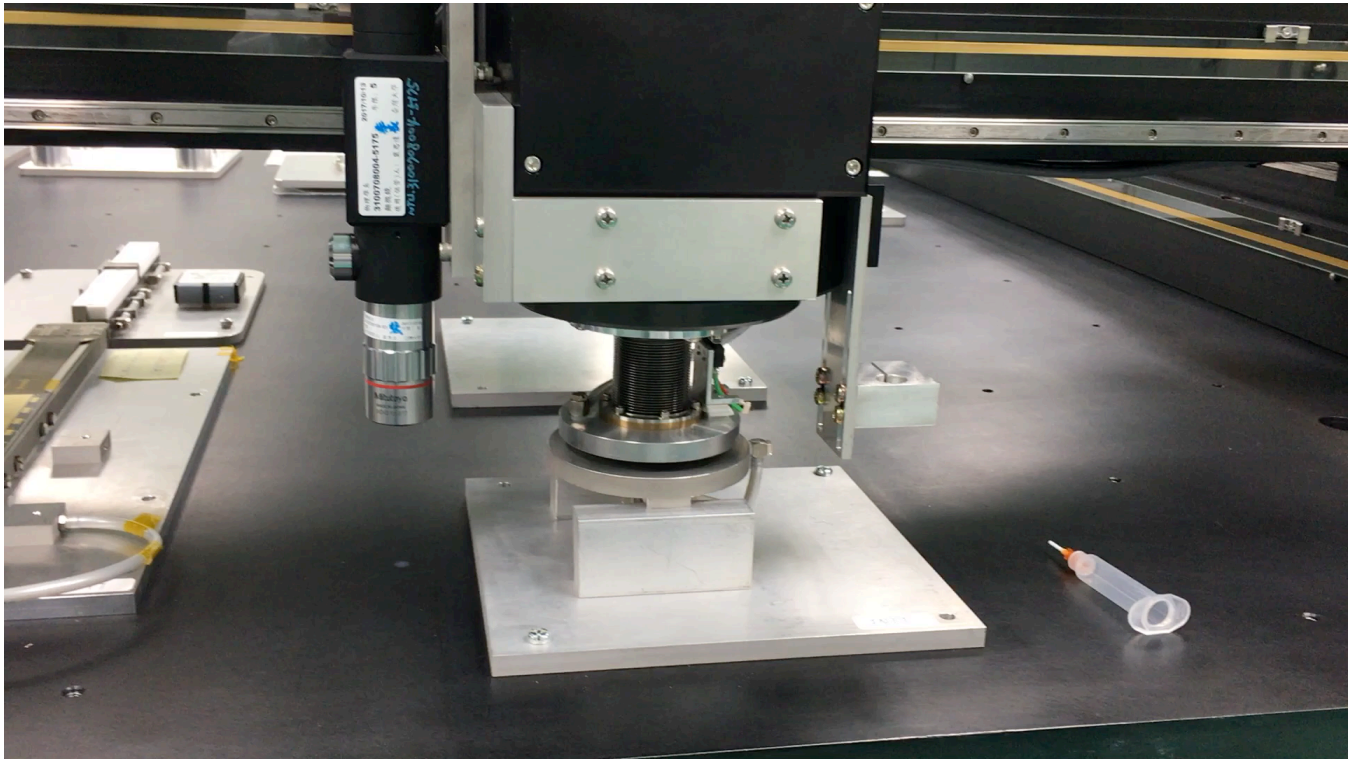
Gantry control code developed by Rong-Shyang Lu



Gantry controlling status

2020/03/24

Gantry control code developed by Rong-Shyang Lu



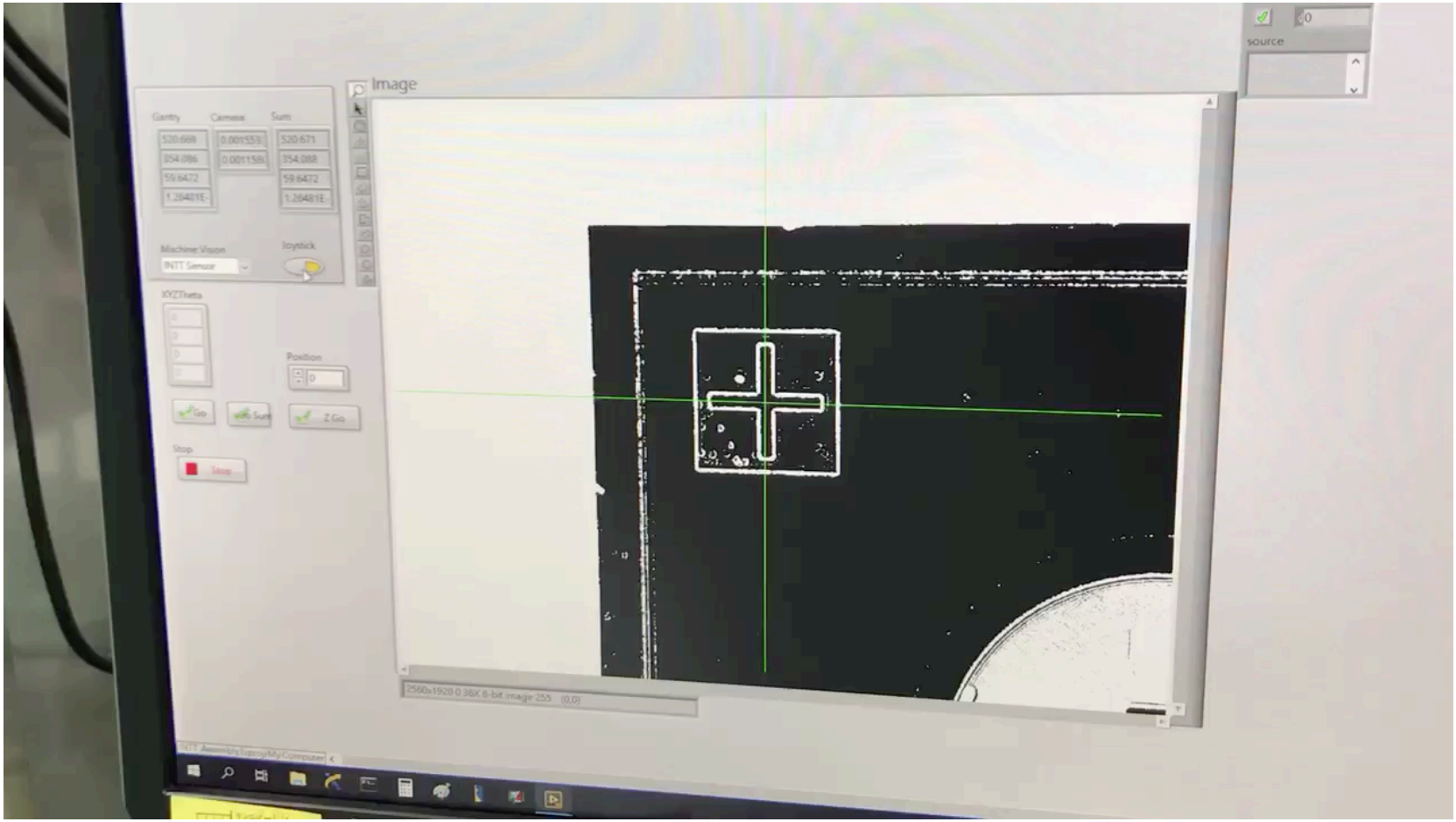


Image
source
Gantry
Camera
Sum
Machine Vision
Joystick
XYZTheta
Position
Go
Z Go
Stop