

Nov 3, 2025

Attending: Halen Davies (Master's with Zisis), Manoj,

Cancelled!

Oct 20, 2025

Attending: Manoj, Chong, Sanghoon,

PNU -

Probe card - designed for v3 - can be updated to v5

Based on a single-chip carrier board,

Probe card production started on Oct 20, 2025

Test setup is up and running

Used for ALPIDE chips - to test the setup

Not just a visual inspection of chips, because it is designed for AstroPix

The chip test machine is waiting for the probe card

End of Nov, early December

Showed a video of the test setup, which works well with a single lane

V3 chip test

Astep-fw and sw

PNU was using a Python package for v3 and v4

V3 chip testing with AStep

Able to test and take data

Will do source scan and data analysis

Argonne -

Sent AStep PCB board package to Sanghoon

Also includes 10 IV'ed AstroPix v3 chips along with one 9chip PCB board

Minho will be working on SEE testing for irradiation test

We can use result to decide if we need SEE testing in QC procedure

If yes, then we can easily implement it in QC scripts

Sep 22, 2025

Attending: Manoj, Bobae

Canceled! No participants.

Aug 11, 2025

Attending: Manoj,

Canceled!

Update from Chong:

As for the probe card, we succeeded in arranging both PCB design company and needle assembly company. They're currently working on it to produce the card. We asked to produce it asap, but currently we cannot say when it'd finish.

July 28, 2025

Attending: Chong, Bobae, Manoj, Maria

Sanghoon at Beam test in CERN PS

PNU -

Design scheme for the test machine - company producing machine - September leadtime

Probe card - required for v3

Plan to use an FPGA and a GECCO + (ribbon cable) + carrier board.

Contacting PCB board designers - carrier boards

List of tests for QC

- Most of the items need to be done from the ITS2 list
- AstroPix doesn't have high-speed links - SPI interface test system needs to be added
- Some QC tests with single-chip carrier boards should be carried out

June 30, 2025

Attending: Chong, Sanghoon, Manoj, Maria

Last Friday, Chong and Sanghoon visited the company for a review of the final design

No specific changes from the last design

Last review before starting to purchase parts and start on production

Keep following up on the progress

We produced some of the injection cards for lab test setups

Registers and capacitors are slightly different from the original ones

If you have some spare then change us voltage cards/injection

June 16, 2025

Attending: Chong, Sanghoon, Manoj, Maria

Production of single chip machine submitted - not sure exact process

Production has started

Expected leadtime - initial good-looking test setup - sometime in August (First ALPIDE)

We keep it machine at company for a while to optimize the test setup

Visit to company several times to finalise the setup

Easy to convert sensor at the chuck

First, it will be tested for ALPIDE

ALPIDE and AstroPix

Conversion will be quite easy - chip design files have already been sent so it should be

Test with ALPIDE will be short

Recently produced v3 single chip carrier boards - 6

For testbeam and QC

Updates on Injection

What kind of test, what to do, and the procedure

Next month or two

This week, the test beam is ongoing at KEK

No test setup available at the lab

Today is the last day of the test beam

Coming days, more lab tests

Can we do metrology on AstroPix (dimensions) on test stand chuck -
depends on the algorithm we use.

We can do distance from reticle edge to physical chip edge

Probe card v3: 30-50 cm (check again), flexible cable between Gecco and single chip

Use GECCO-FPGA can be the same

Addition in probe card - need a circuit to check the connection between the chip pad and probes

Manoj will get the v3 current values

Through every needle, it sets some voltage and current - need to have a current limit for ASIC for AstroPix

- Check how to do it for AstroPix - contact the Chip designer

Going to analyze data from testbeam - system testing

July 1st - testbeam status in System testing meeting

May 19, 2025

Attending: Bobae, Manoj, Sanghoon

PNU -

Start communication with the manufacturer for the test stand, to place an order

Some procedure with v3

Put the order for single chip carrier boards

Test beam in the second week of June

- Test for v3 (not only for QC but also for testbeam)
- The next two weeks can summarize the results

May 5, 2025

Attending: Sanghoon, Bobae, Manoj

Agenda:

Test machine design

QC tests - QC procedure, single chip testing

AstroPix v5 engineering run - KIT to place an order

PNU -

Received the design for the chip QC machine C'ONTECH

Big funding from next year, March 2026

Any budget profile for equipment

Just focusing on the functionality of chip testing

Replace this machine with a multiline next year

The vision system is added to the prototype

Decide how many lines are on the chip loading tray

Initiated procurements - paid advance

Production will start once production is started

By the end of July may have delivery

By August - commissioning

Time processing by machine < 1min

The major contributor will be the QC tests

Ready to proceed with the order

Sending it to the mailing list before placing an order

Targeting it for next Monday

Apr 21, 2025

Attending: Sanghoon, Bobae, Vitaliy, Manoj

QC tests - Start planning a few tests with a single chipboard, so we can begin working on FW/SW

Tried to reach a manufacturer for a probe card (NOTICE - company name, less than a month), and testing - the probe card is relatively easier to get

Chip test machine - have an appointment to finalize the design and initiate the assembly
Develop the procedure with a single chip (v3) - send the v3 chip carrier board to S. Korea (wire bond plan, information)

https://docs.google.com/spreadsheets/d/1w3gPzJTv5pHb9EoUAYuOapxyBJsiOj_nnp0lAQ7FitE/edit?gid=0#gid=0

Next meeting in two weeks - should have finalized the design
Test machine meeting this week

Next Meeting -
Test machine design
QC tests - QC procedure, single chip testing

Module meeting report
Dummy chips module production - Possible to fabricate (for all sites) in South Korea.

Mar 24, 2025

Attending: Manoj, Bobae

The meeting was canceled! - No one showed up except Bobae 🙏

Things to discuss:
V5 chip fabrication status has not changed!
Discuss the schedule for PID.
Status report on:
Chip test machine contract and delivery
Commissioning the test stand - single or multiple?
Program FW/SW to run?
QC tests?

Mar 10, 2025

Attending: Manoj, Adrien, Bobae,

v5 updates: Argonne and AMS are working on the contract. Submission delayed.

The meeting wrapped up with some news! - Lower attendance may be due to the daylight saving change

PNU - (Sanghoon provided some updates offline)
The paperwork for the chip test machine - getting close to making an initial contract.
Contacted another PCB designer to work on the probe card.
Some work has been started to convert the Kicad v3 chip carrier board design to OrCAD.
The specific mechanical design of the probe card will be discussed soon.

Feb 24, 2025

Attending: Manoj, Bobae, Maria, Sanghoon, Regina

Sanghoon's slides from the In-Person workshop

https://indico.bnl.gov/event/22517/contributions/91072/attachments/54555/93355/BIC_Chip_QC20240515.pdf Check slide 9 for a list of QC tests.

Argonne updates -

KIT has this generic chip testing system -

- Something similar for BIC chip QC
- To set the QC procedure

Energy calibration, source scan -

PNU -

Korea Update

Delayed for a while

ConTEch - Sep 2024

Got the initial design and quote

Try to get the machine and payment - administrative procedure

Fit within easier process

Divide into payments - sorted out the issue

Started making payment - this or next week

Production time 2-3 months - in the lab or at the company? - in the lab

Paper work is sorted out

Meantime will work with a probe card - how many? - base on v3 chip carrier board (less complex) (<10k USD)

Yunha will take 10 single chips - chip carrier boards (fabricate them in Korea)

- Can be used to develop test procedure

Will discuss with company to redesign chip carrier board - to - probe card

Also will discuss wafer probing company -

Some information need to send to company

Will contact wafer probing company this week (first time working with the company)

They have engineer who will help us with probe card design

Begin with IV and how system works

Can add threshold card

Test with v3 - Once Yunha is back will work on procedure for the QC test

June 2025

Final version of machine

- Machine most probably is assembled
- Commissioning might not be ready