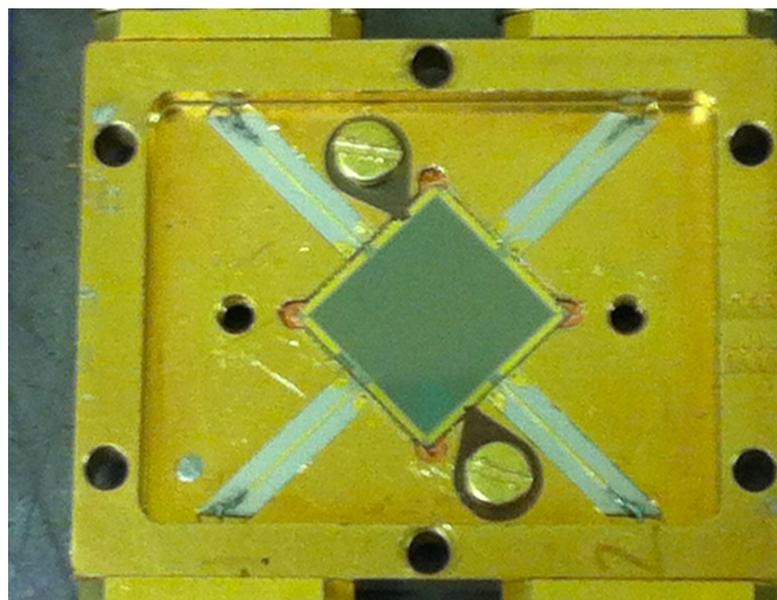


We received a UCSB MKID!

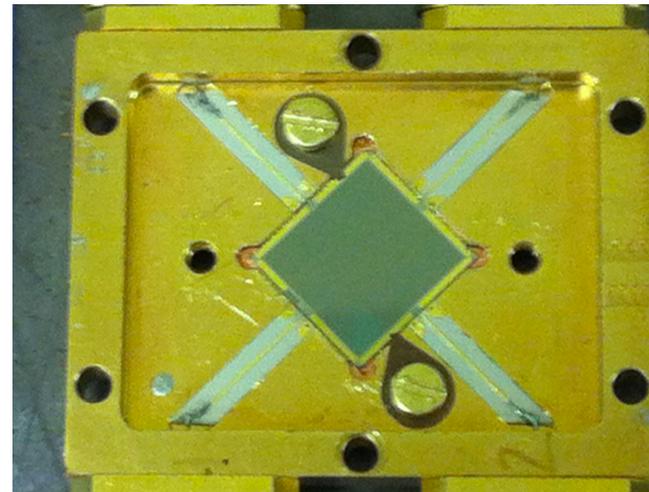
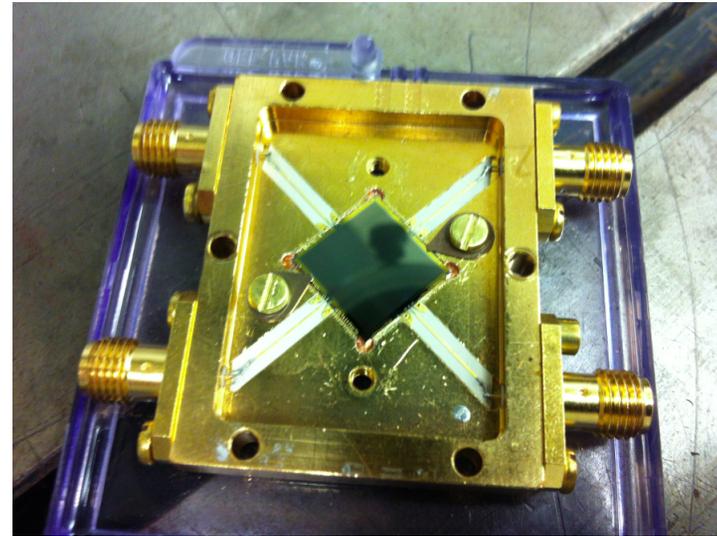


Donna
13Sep2013

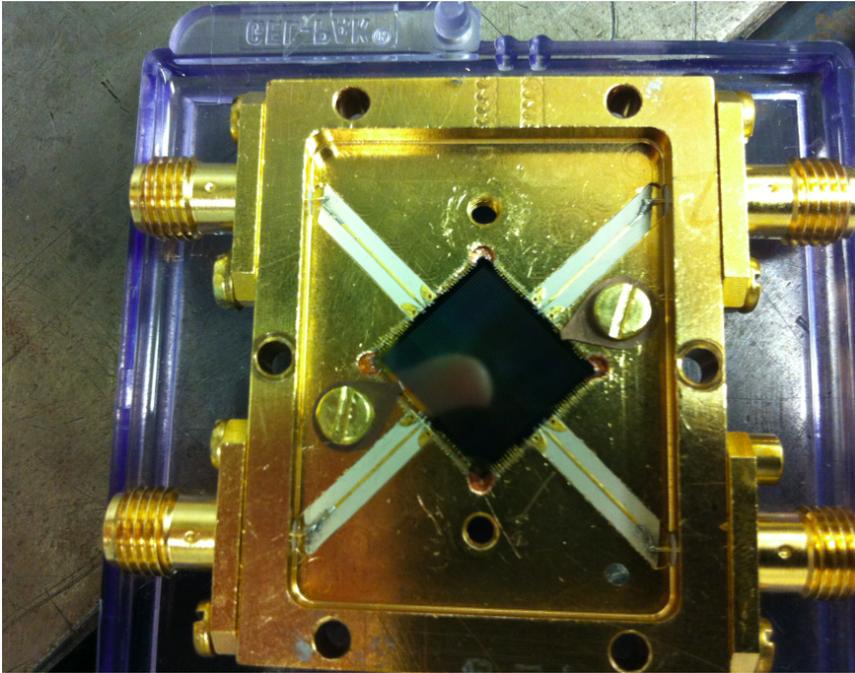
Thank you to Ben for providing answers to my questions, which are included throughout this presentation!

Specifications

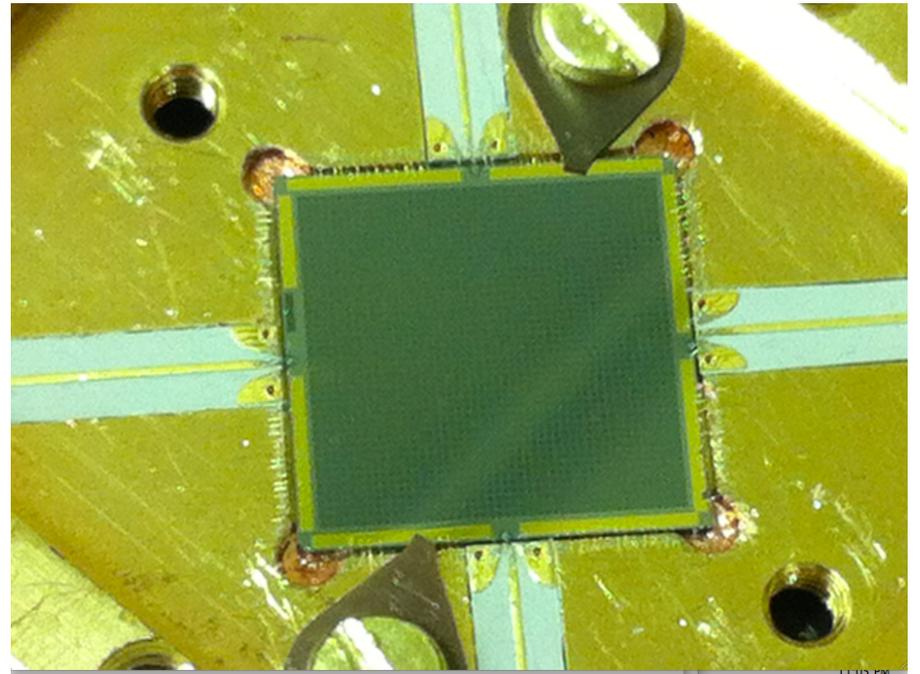
- TiN on Si
- TiN is 60 nm thick
- Box is gold-plated copper (no nickel flash; non-magnetic materials only)
- Gold wire bonds to gold bond pads for chip heat sinking.
- Al wire bonds go to feedlines
- 2 brass screws and BeCu tabs.
 - Tabs hold the chip down and help squish the glue flat so the chip is flush with the bottom.
- What are the (gold on white) “stripline” (?) input/output lines made of?



Zoom in a bit

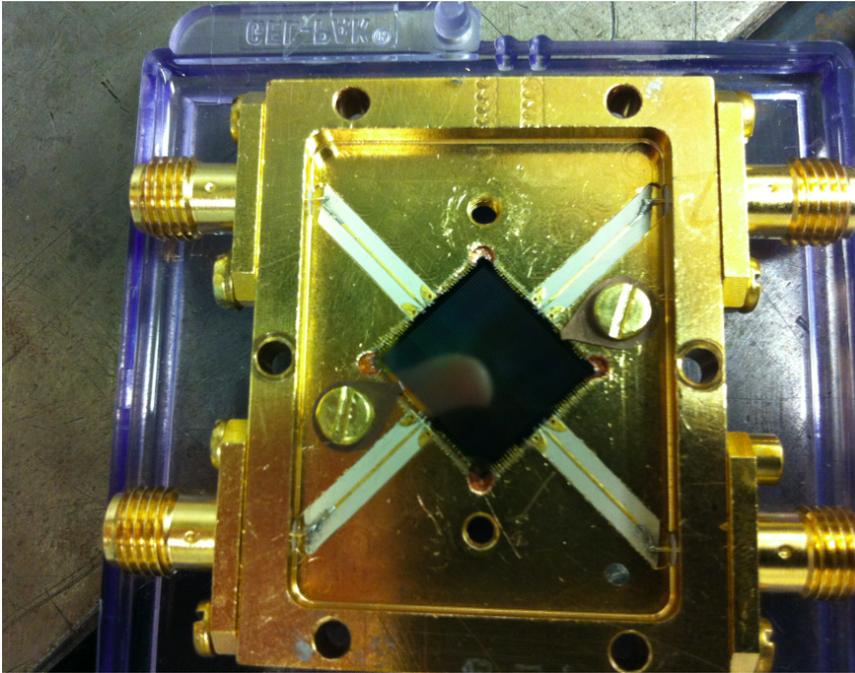


iPhone photo

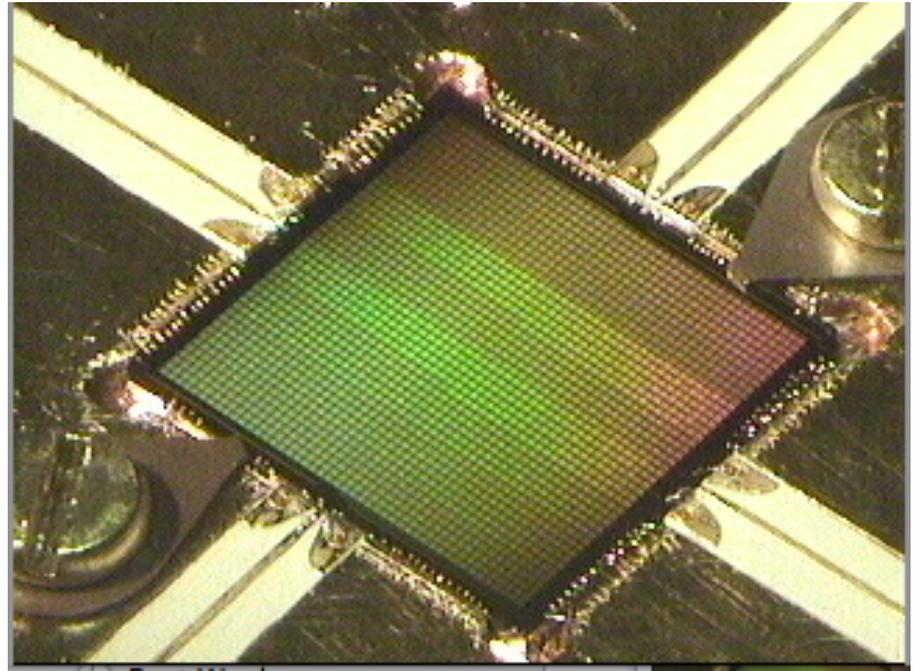


iPhone photo

Zoom in a bit differently

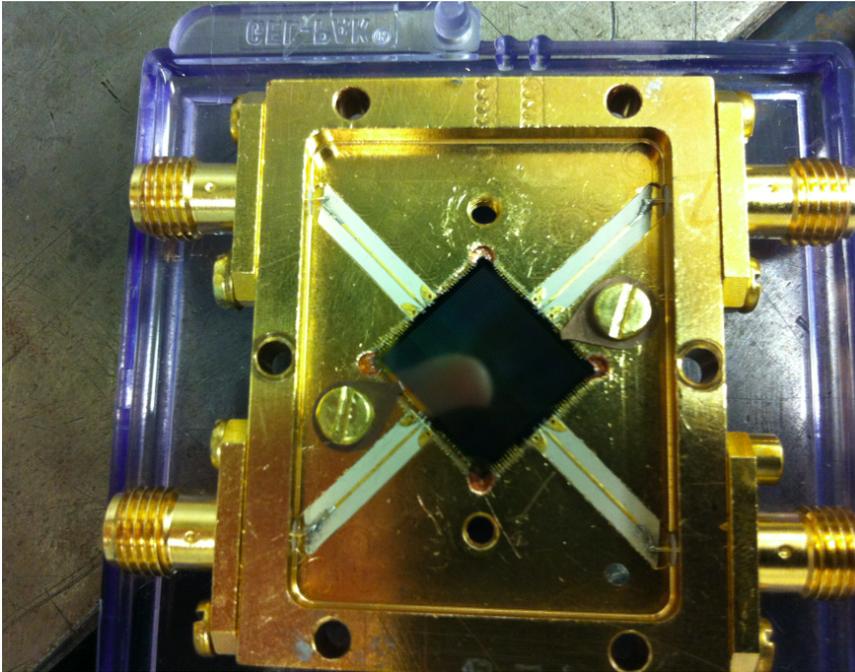


iPhone photo

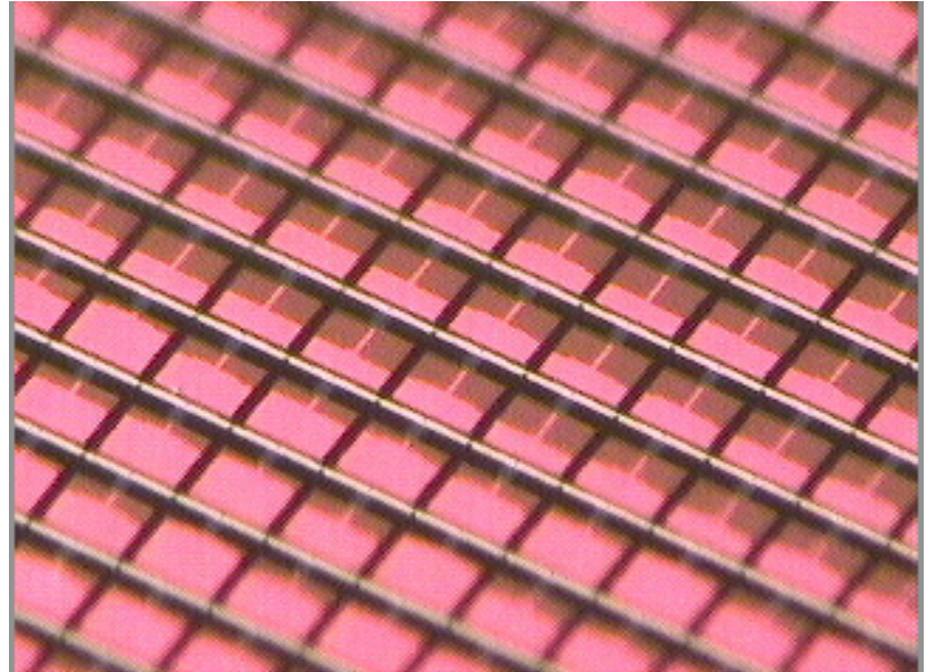


Techno-Look photo

Zoom in on pixels

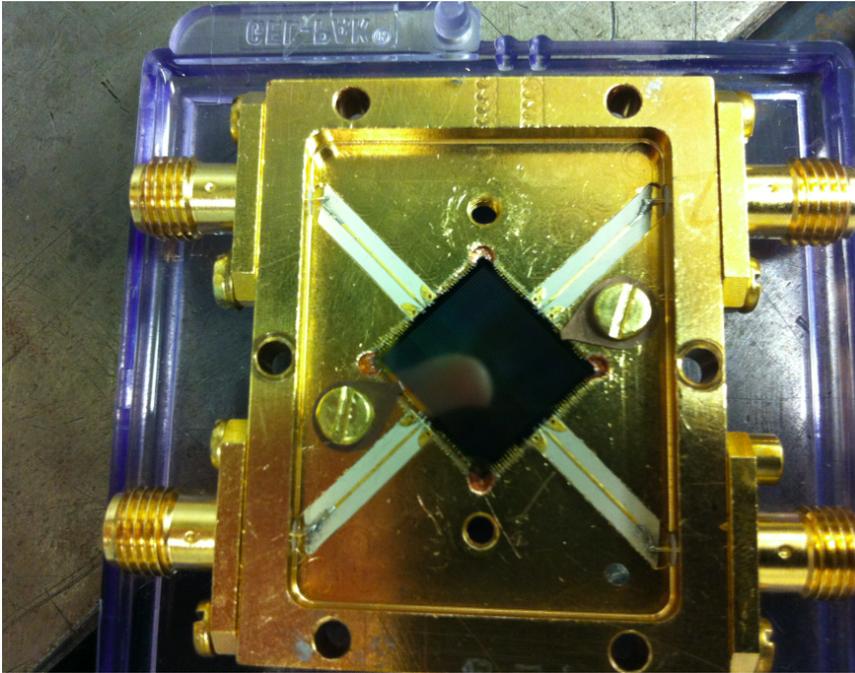


iPhone photo

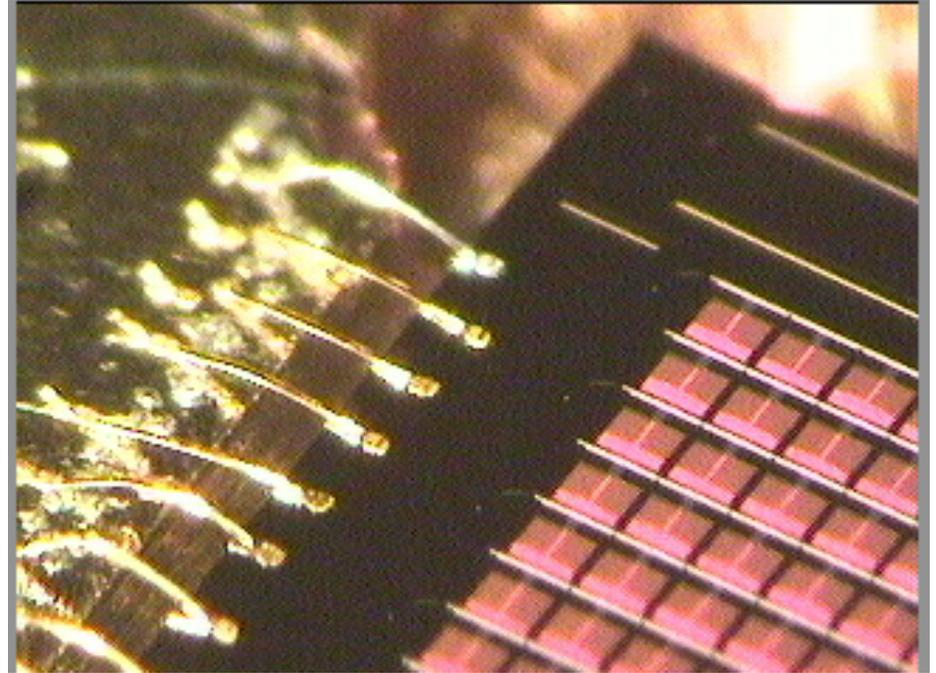


Techno-Look photo

Zoom in on pixels plus gold wire bonds

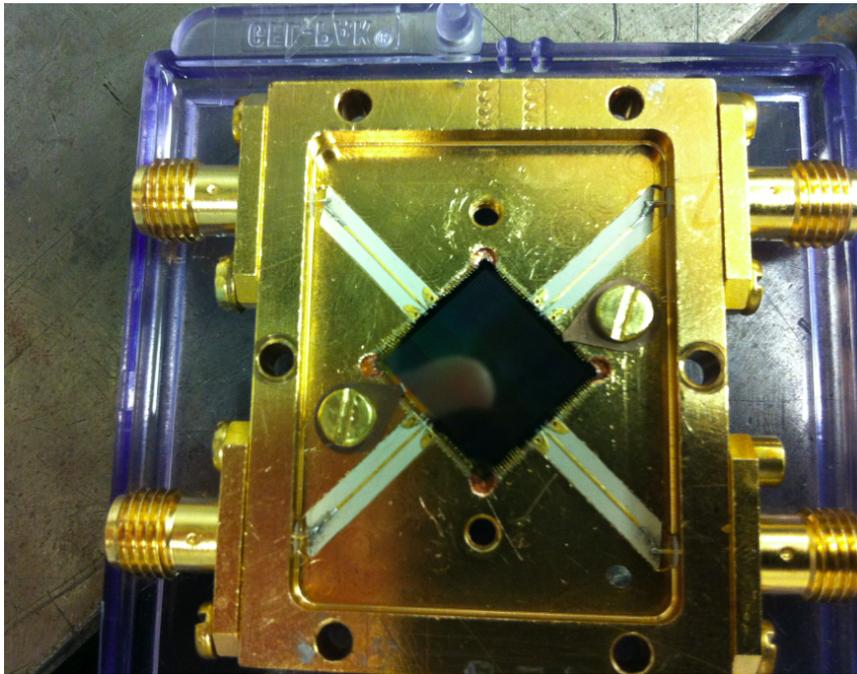


iPhone photo



Techno-Look photo

Zoom in on more gold wire bonds

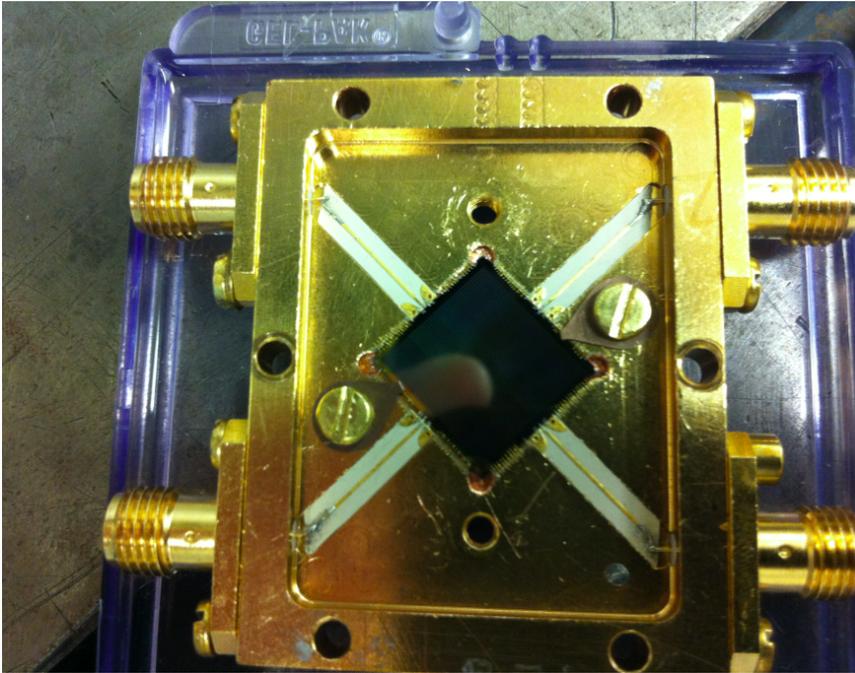


iPhone photo

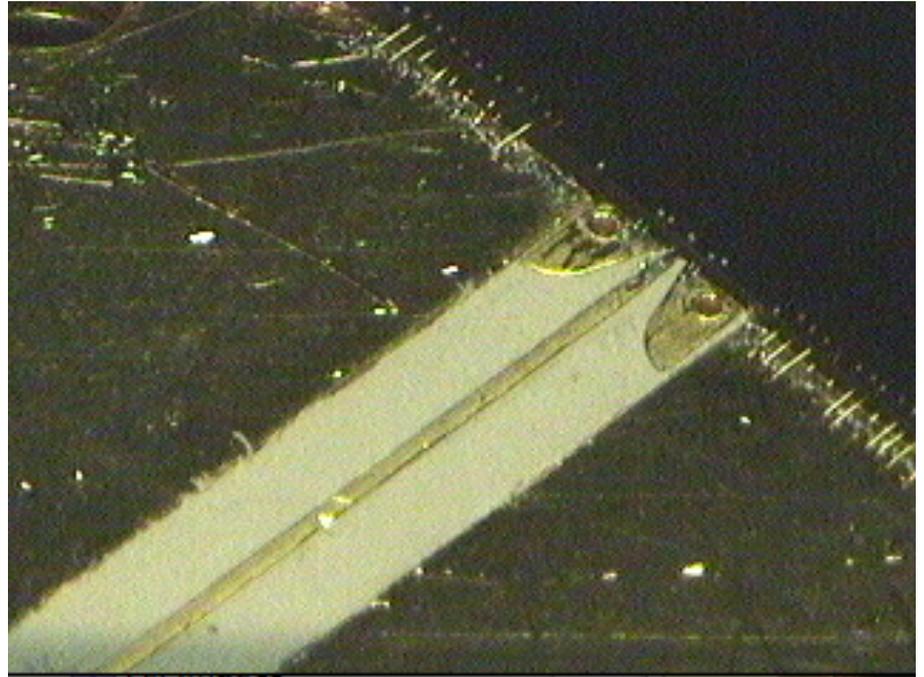


Techno-Look photo

Zoom in on feedlines and Al wire bonds

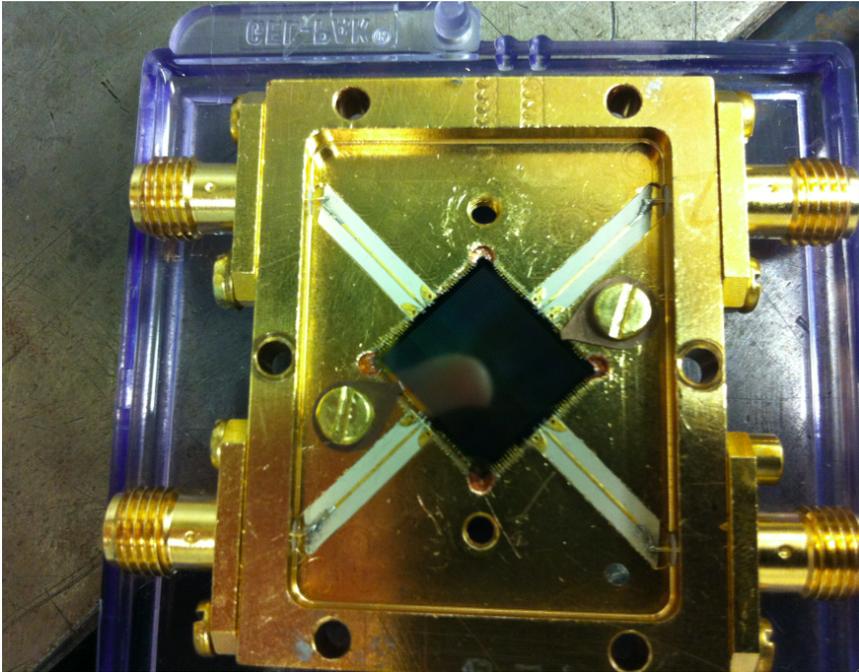


iPhone photo

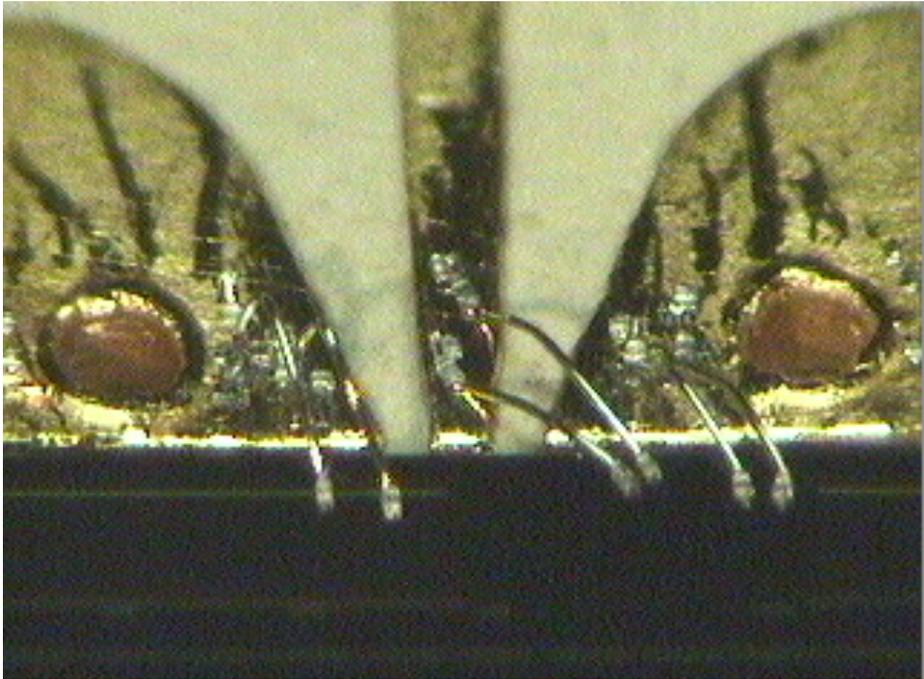


Techno-Look photo

Zoom in on feedline

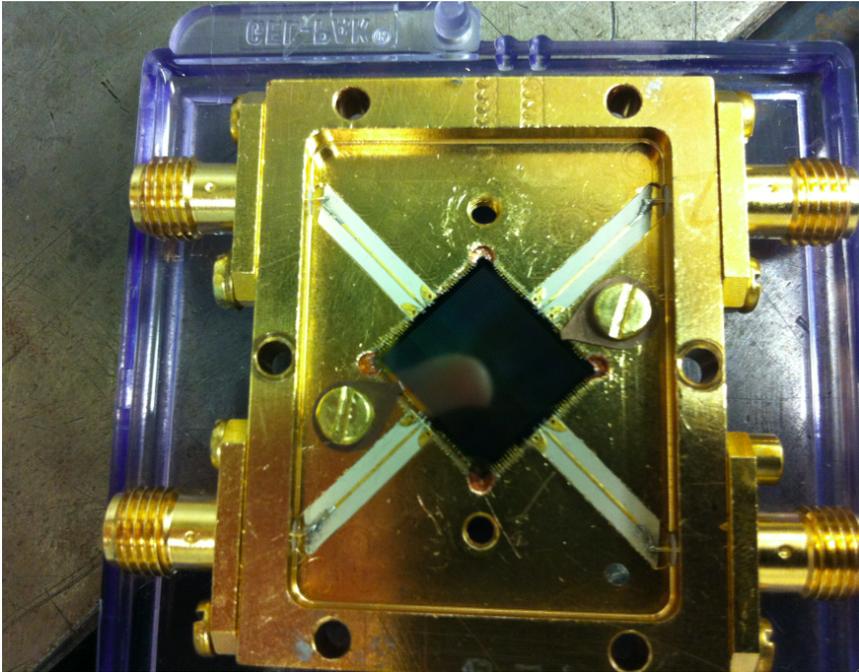


iPhone photo

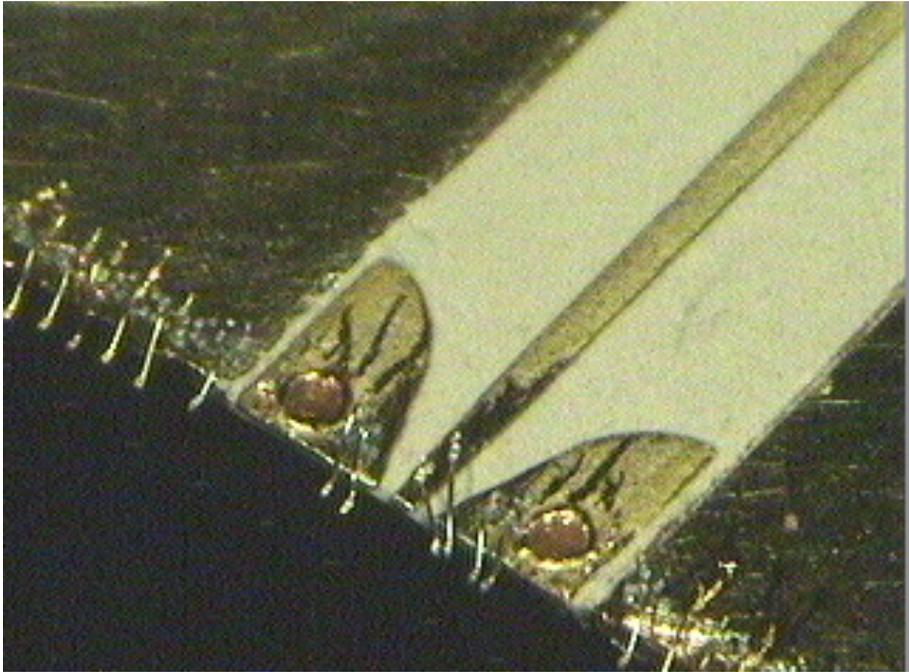


Techno-Look photo

Zoom in on feedline

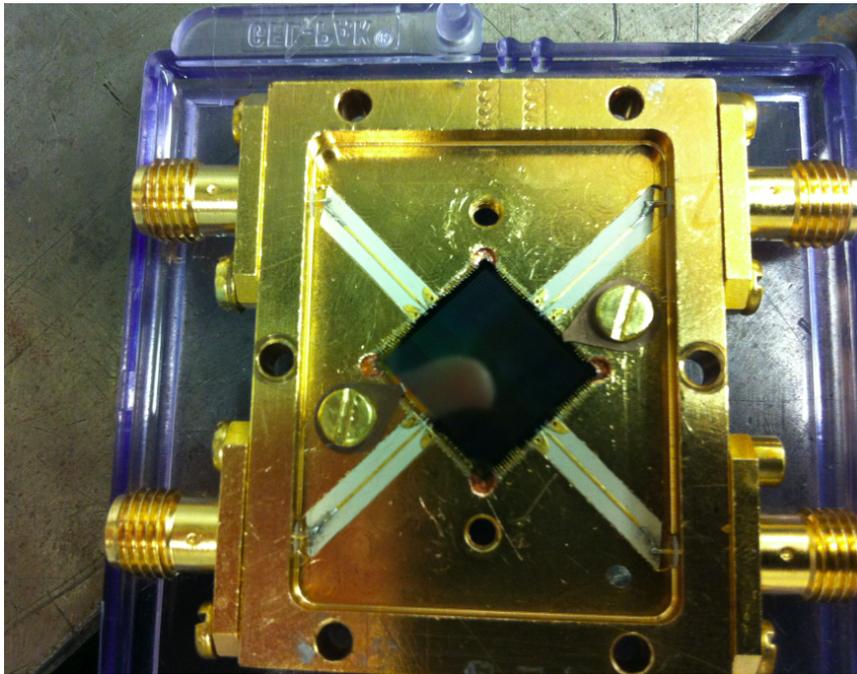


iPhone photo

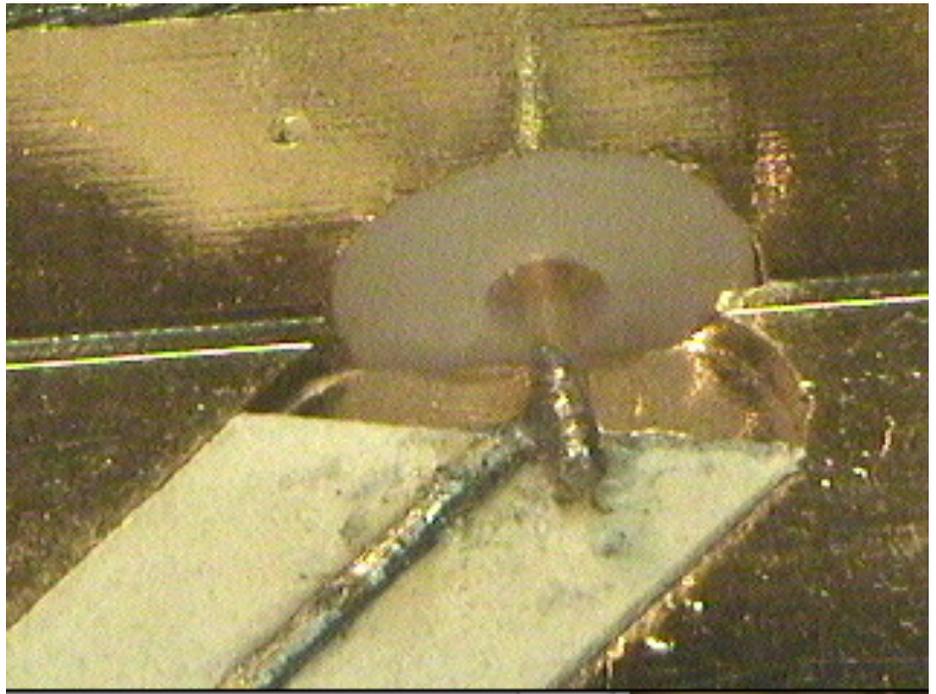


Techno-Look photo

Zoom in on SMA-to-stripline

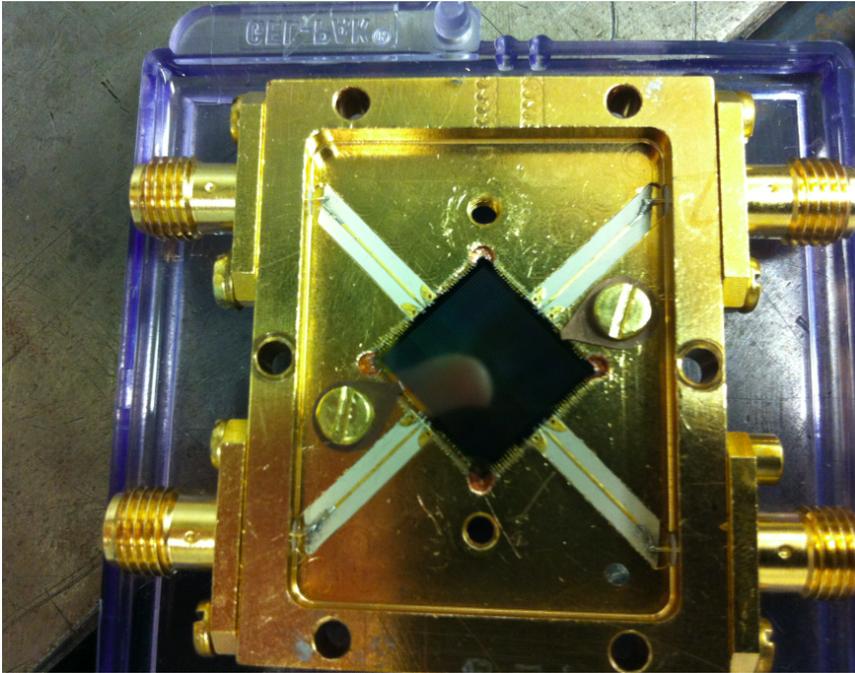


iPhone photo

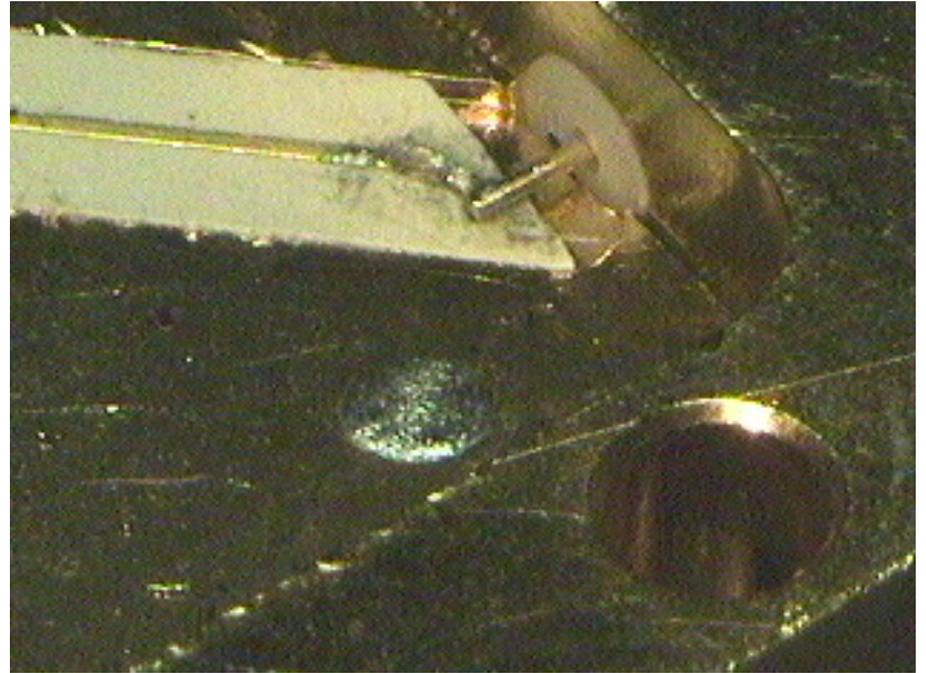


Techno-Look photo

Zoom in on SMA-to-stripline

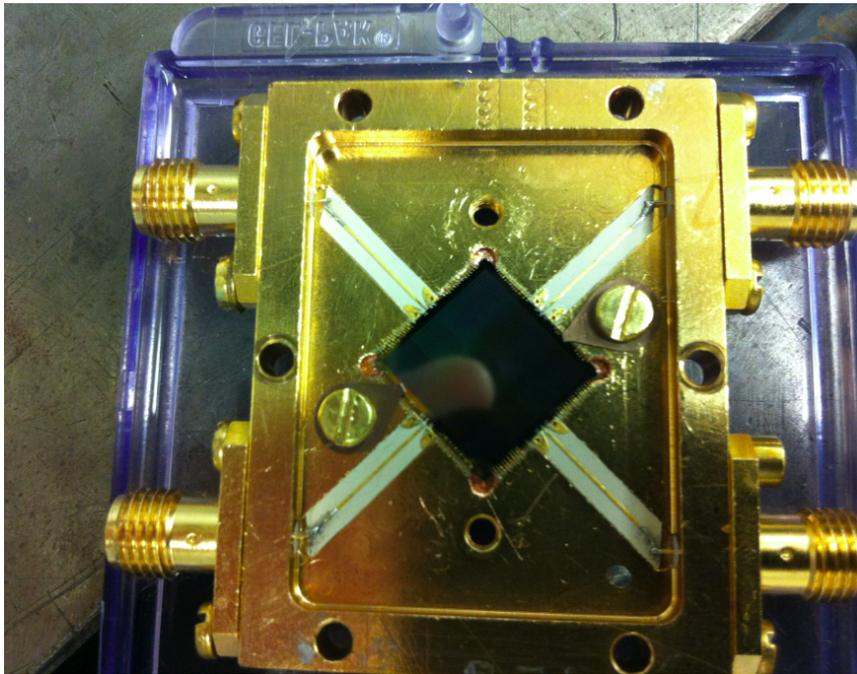


iPhone photo

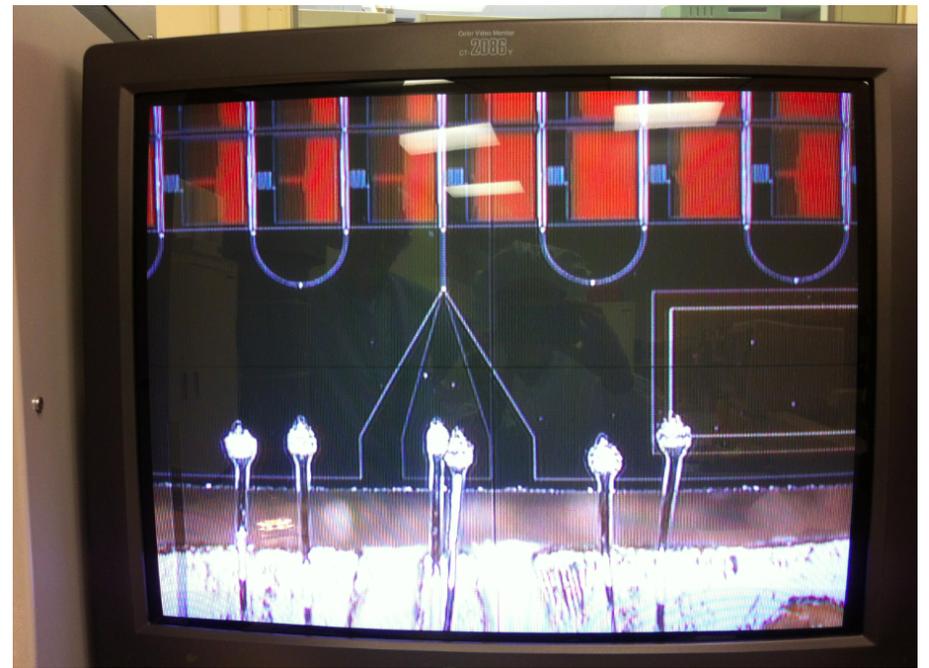


Techno-Look photo

Zoom in on array and *input*???

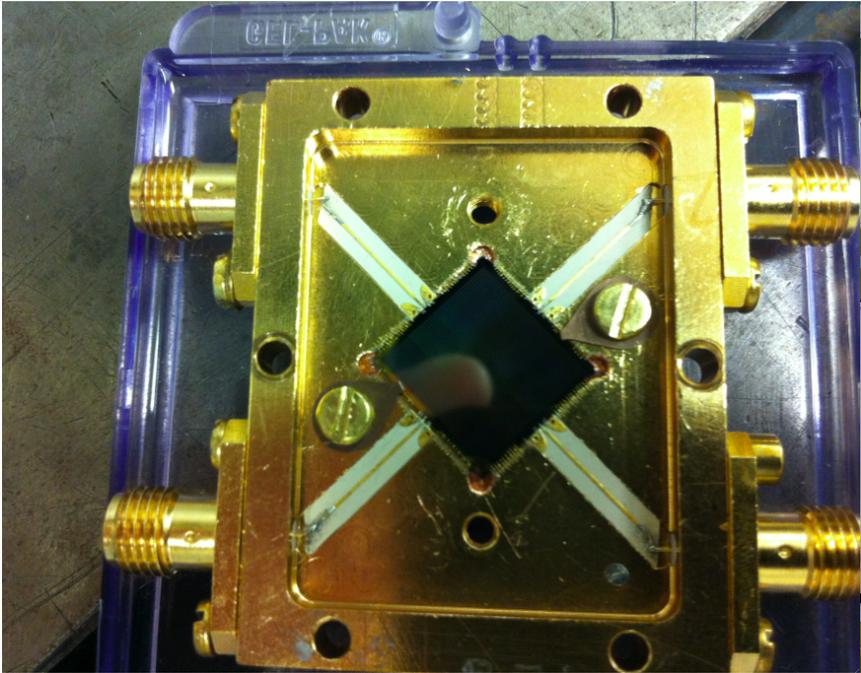


iPhone photo

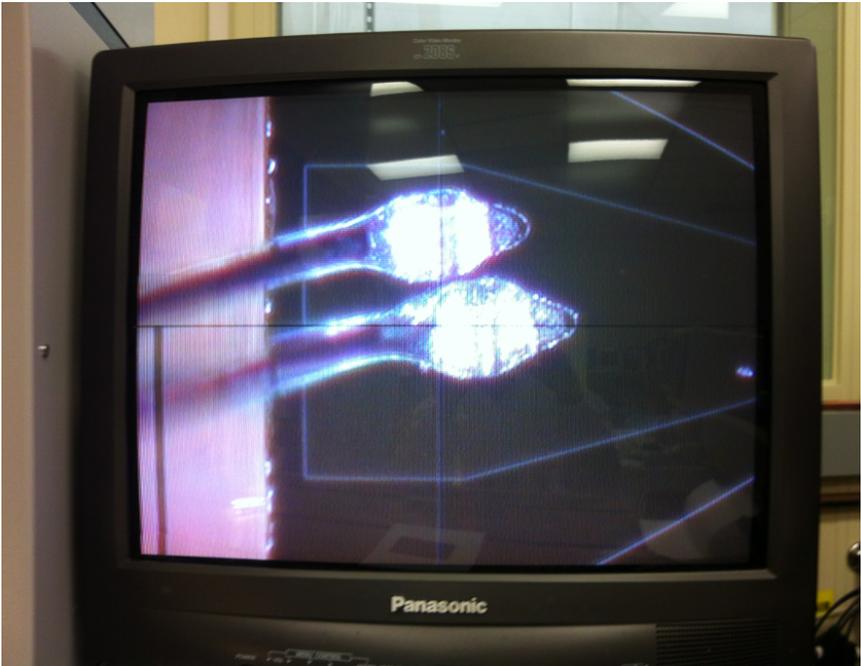


Zeiss + iPhone photo

Zoom in on wirebond to ???

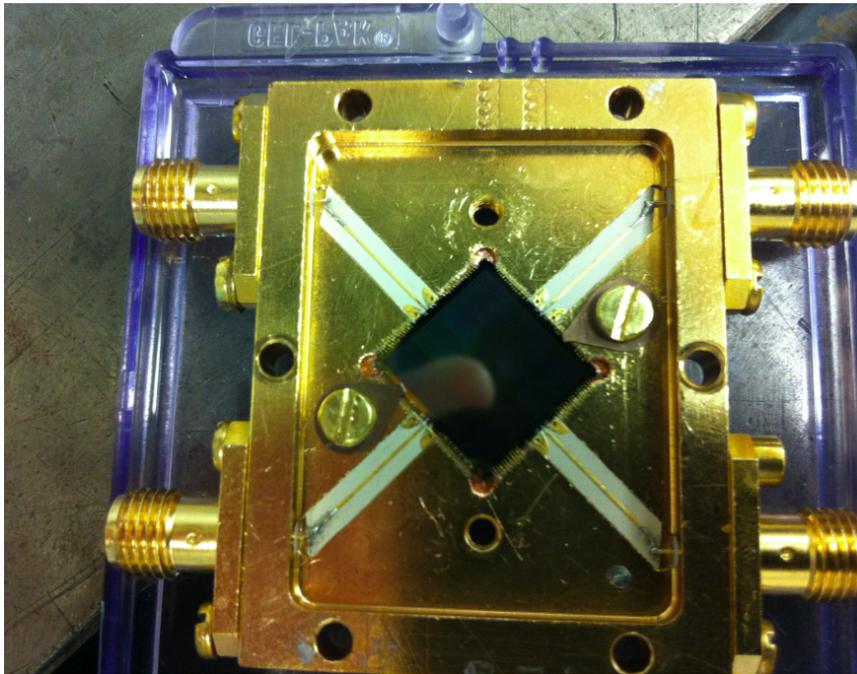


iPhone photo

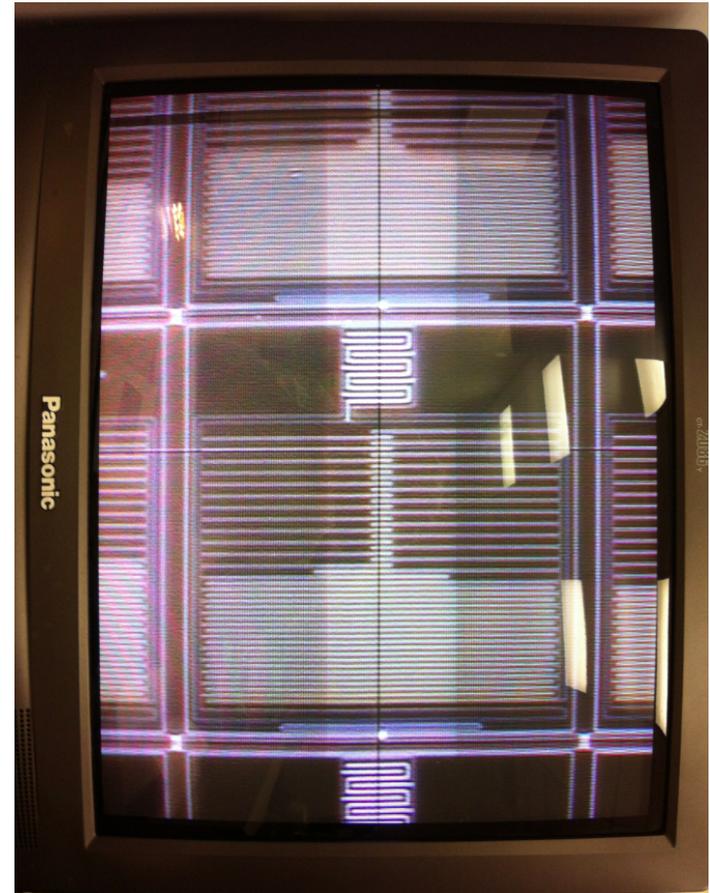


Zeiss + iPhone photo

Zoom in on pixels



iPhone photo



Zeiss + iPhone photo

One pixel from SCI-4A 2024 pixel science array

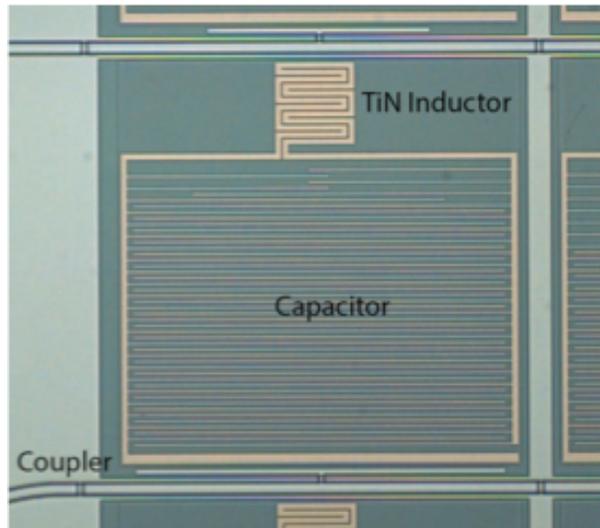
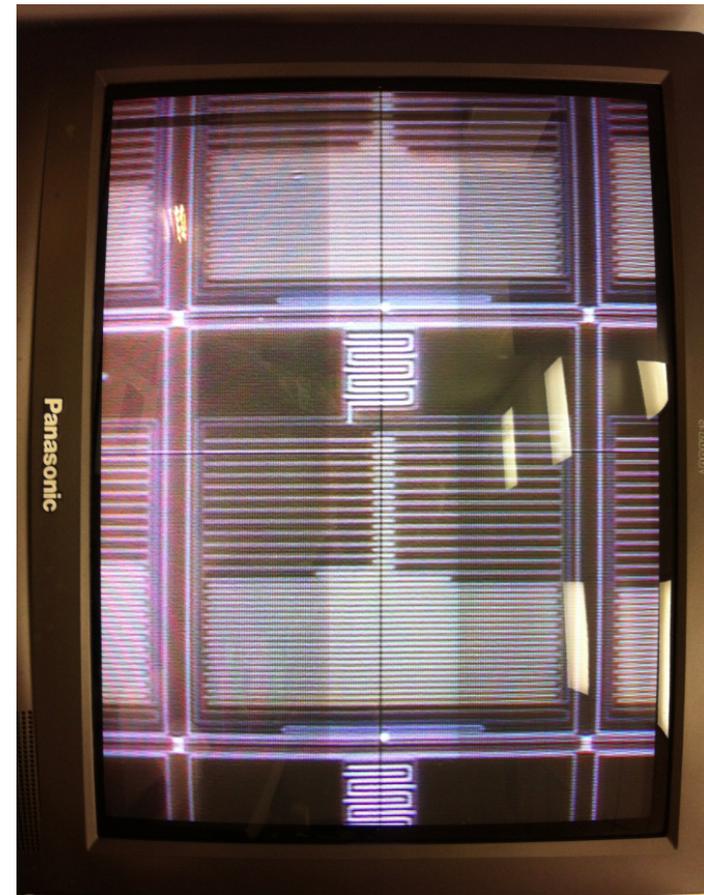


Image from Seth's MKID workshop talk



Zeiss + iPhone photo

Capacitor-tuned frequencies. The inductors are not quite identical; they have slightly different leg widths to give uniform response.

Several pixels from SCI-4A 2024 pixel science array

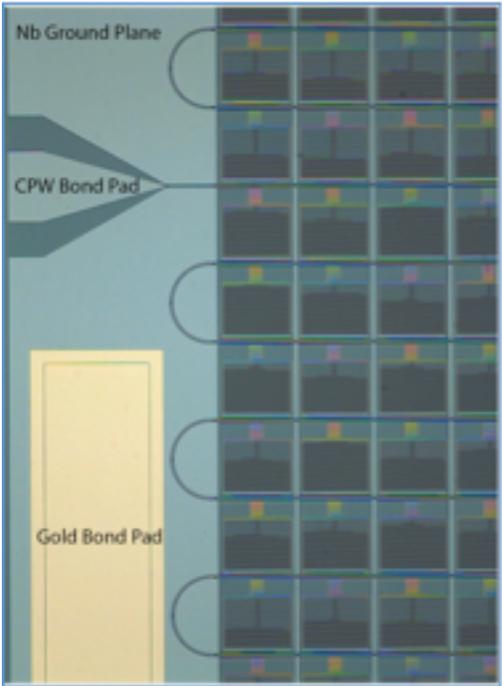
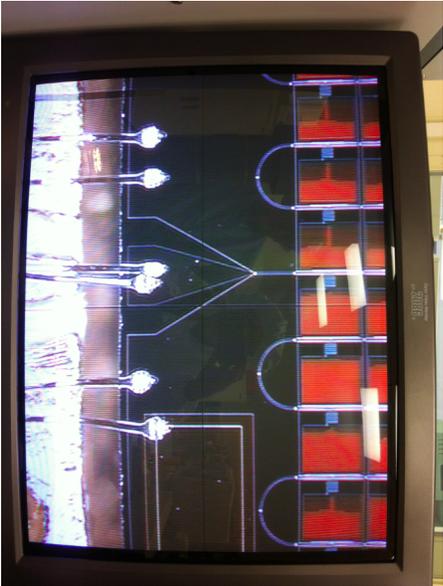
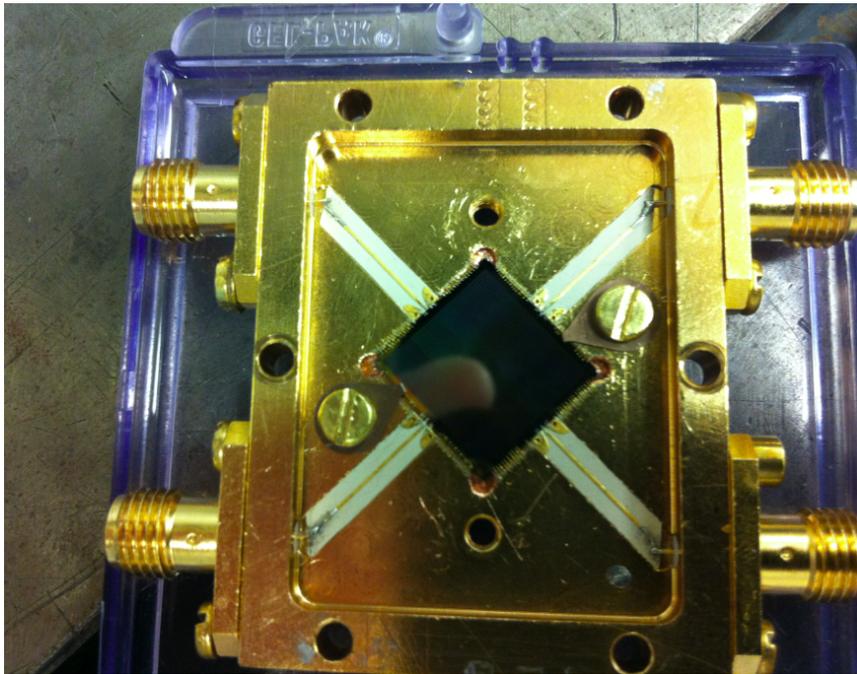


Image from Seth's MKID workshop talk



Zeiss + iPhone photo

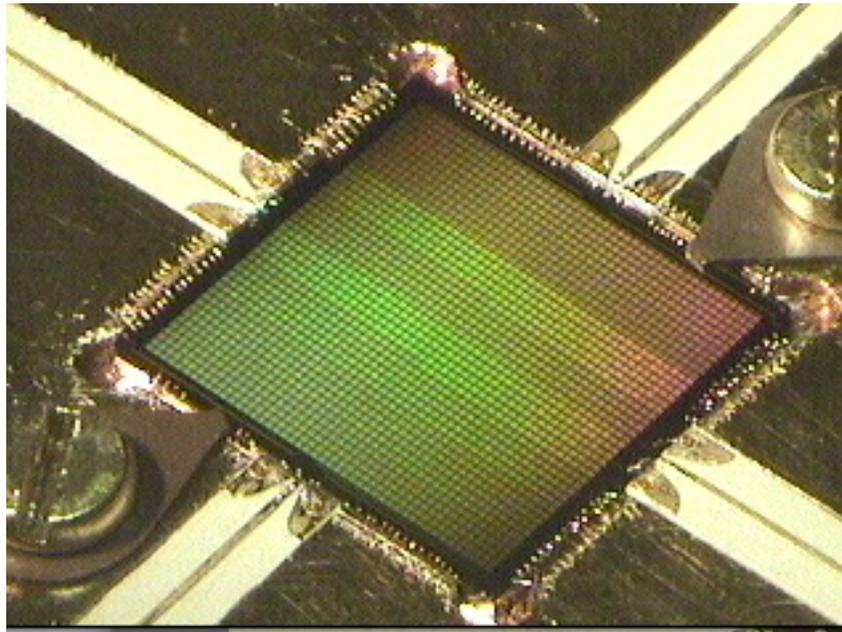
Zoom in on pixel and (what do we call the arc?)



Zeiss + iPhone photo

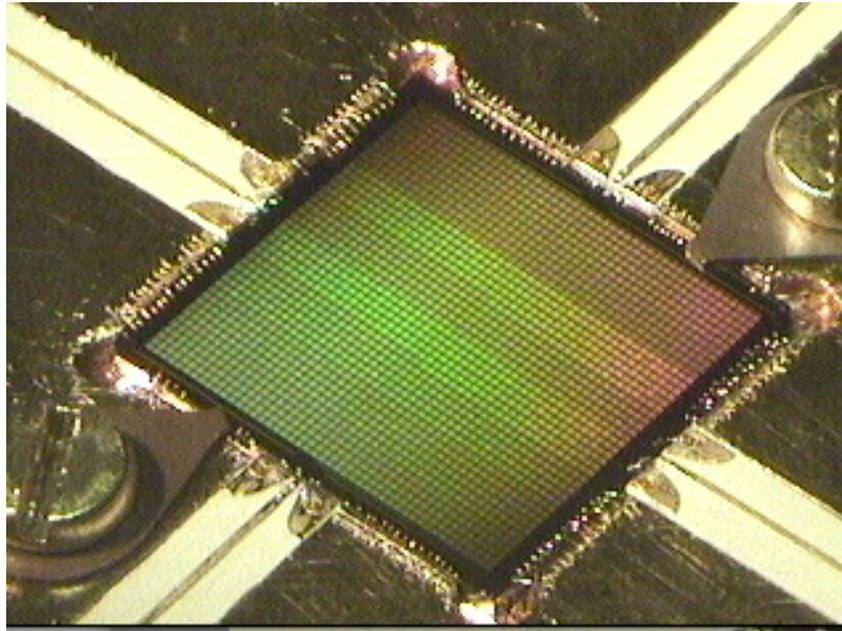
Which are input & output?

Are they symmetric – could swap input & output pairs?

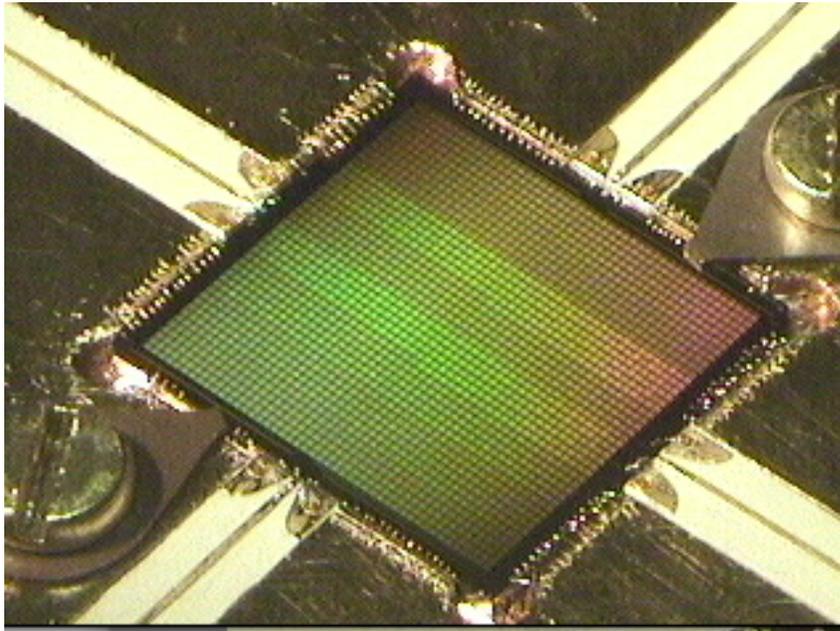


What is the path of the RF signal?

Ben said we should be able to see this with optical scope – I need to look more carefully.

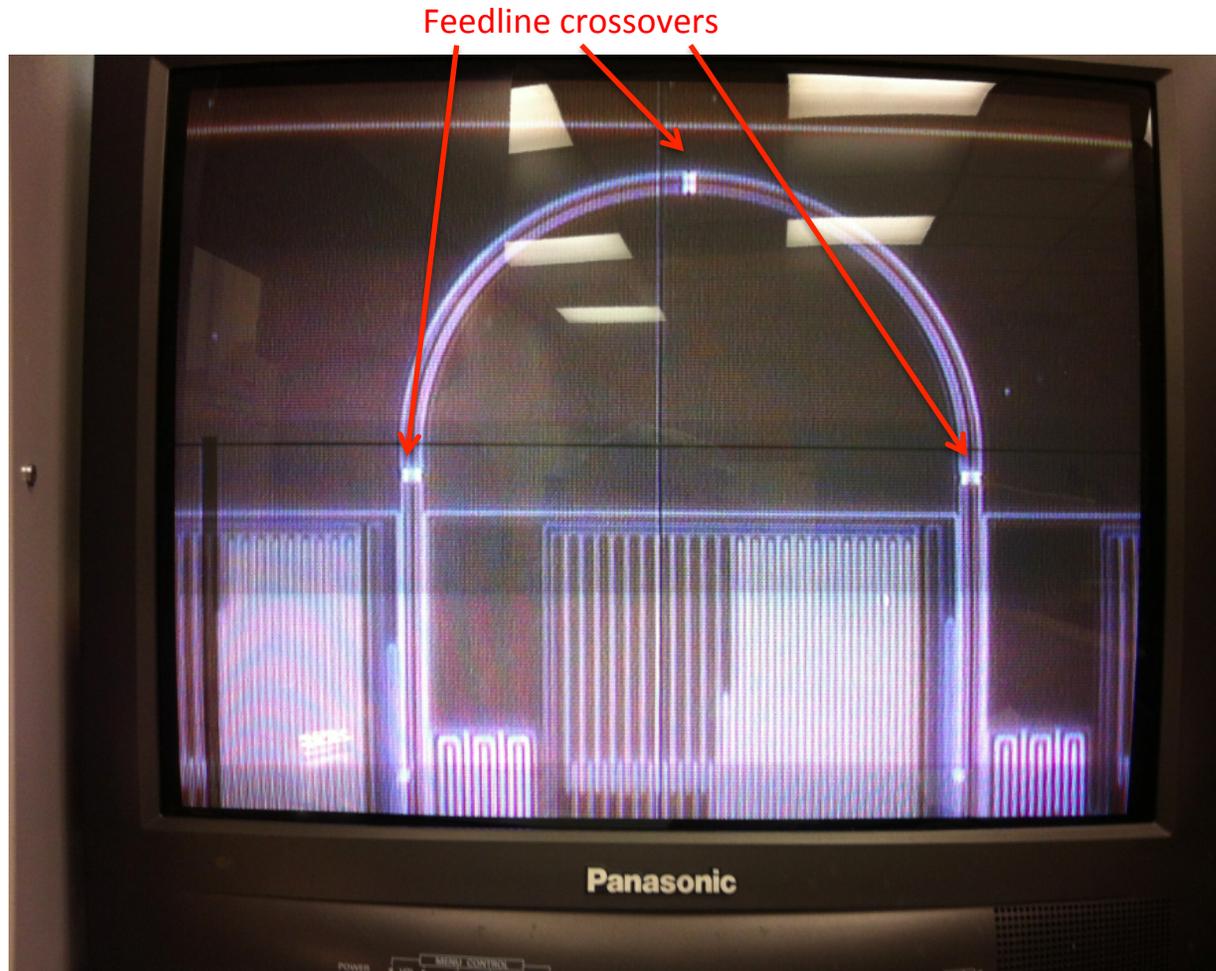


The array is split in half by a vertical line in the middle.
(Need to look for this!)

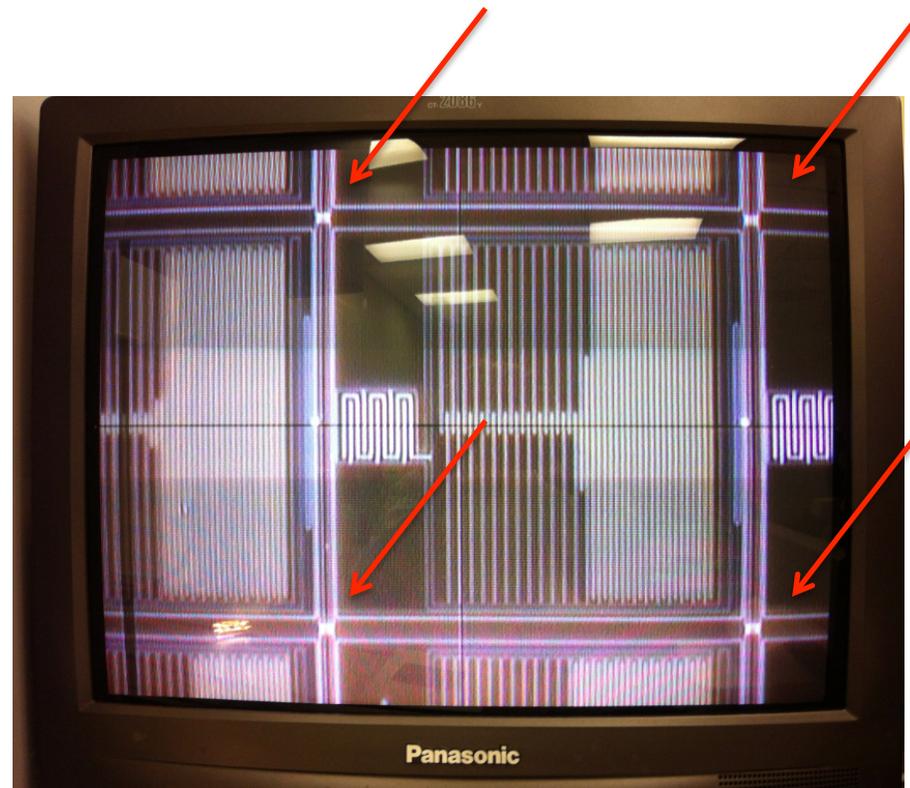


Feedline crossovers

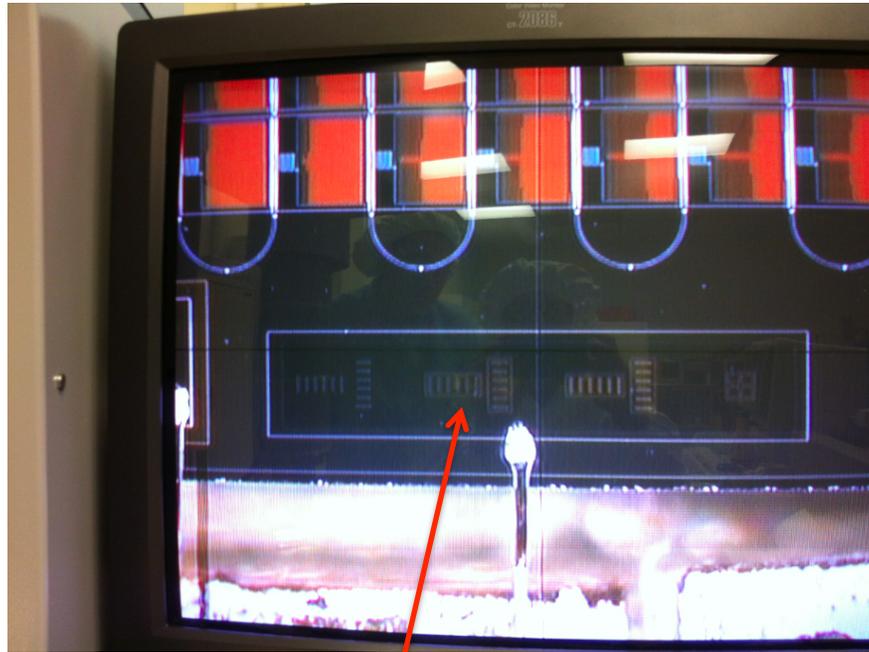
These serve to connect the ground plane across the chip into one big ground plane instead of a bunch of separate ground planes.



More feedline crossovers



Alignment marks



Alignment marks for lithography, non-functional

Instruments used for taking photos

SONY TechnoLook



Zeiss UMM 500

