

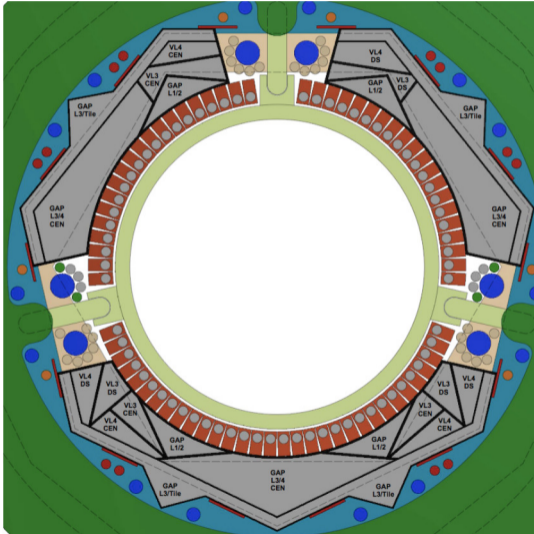
Some cabling thoughts

Frank Meier
Paul Scherrer Institute

February 4, 2020



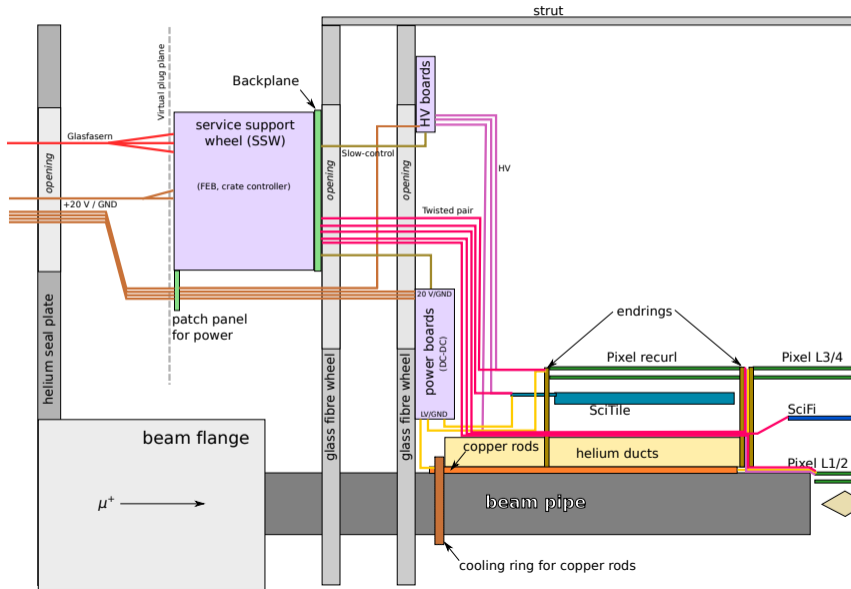
Introduction



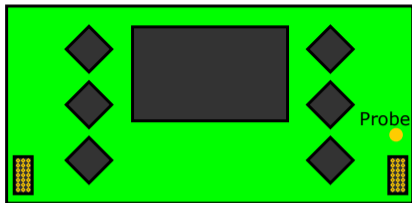
The micro-twisted-pair-cables are the circles around the larger blue circles (SciFi cooling pipes)



Introduction:



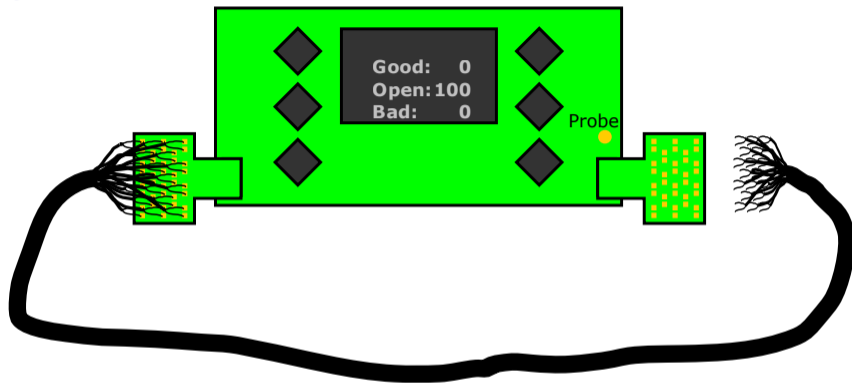
Introduction



A little tester using two analog multiplexers, controlled by a micro-controller, to ohmicly test all connections.



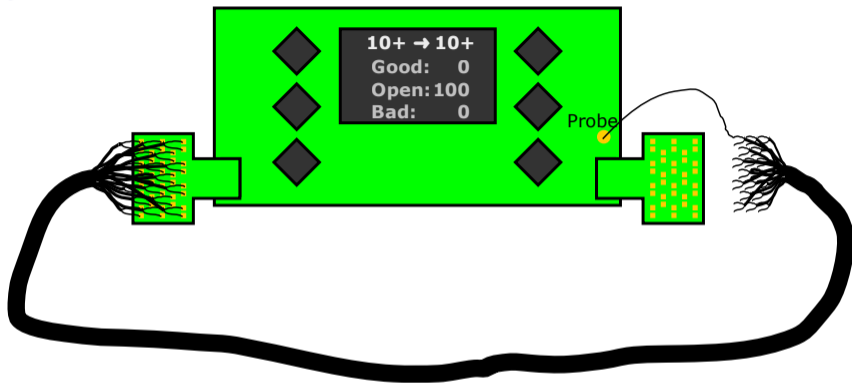
Introduction



A prefabricated cable gets attached. Left side everything soldered already, right side all open.



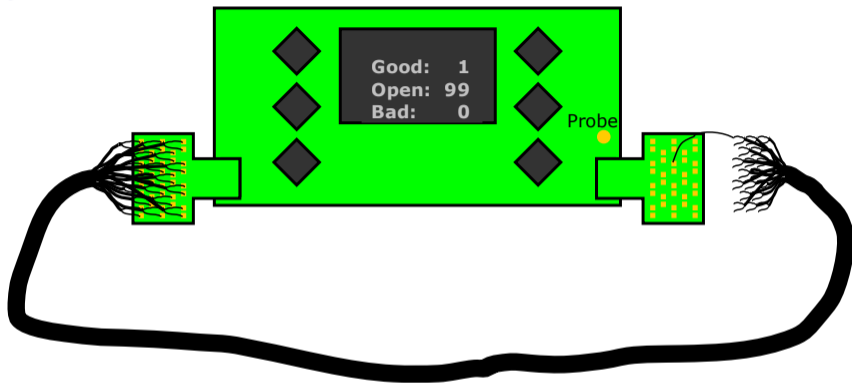
Introduction



Select one wire of a pair, connect it to „probe“. Connection is shown.



Introduction



Solder that wire to the proper pad, immediate confirmation on display.



Introduction

- ▶ Cables need to be solder outside the assembly. Imposes restrictions.
- ▶ We have to install them at a very specific point (before/after helium ducts or water cooling pipes SciFi)
- ▶ At the ends, there will be flexes that do the connections to the next unit
 - ▶ To modules: Endring flexes, will offer interposer (to L3/4) or direct (L1/2, SciFi)
 - ▶ To DC-DC: Several options. Custom compact connectors (Comtronic, 100 pins in about 13 mm^2 fanout area, crimped connection), interposer again, micro edge connector (CMS style, small pitch). Comtronic option will never allow to integrate active components.



Conclusions



ENCORE

