

Optical Levers Layout and Cabling

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Ando Group

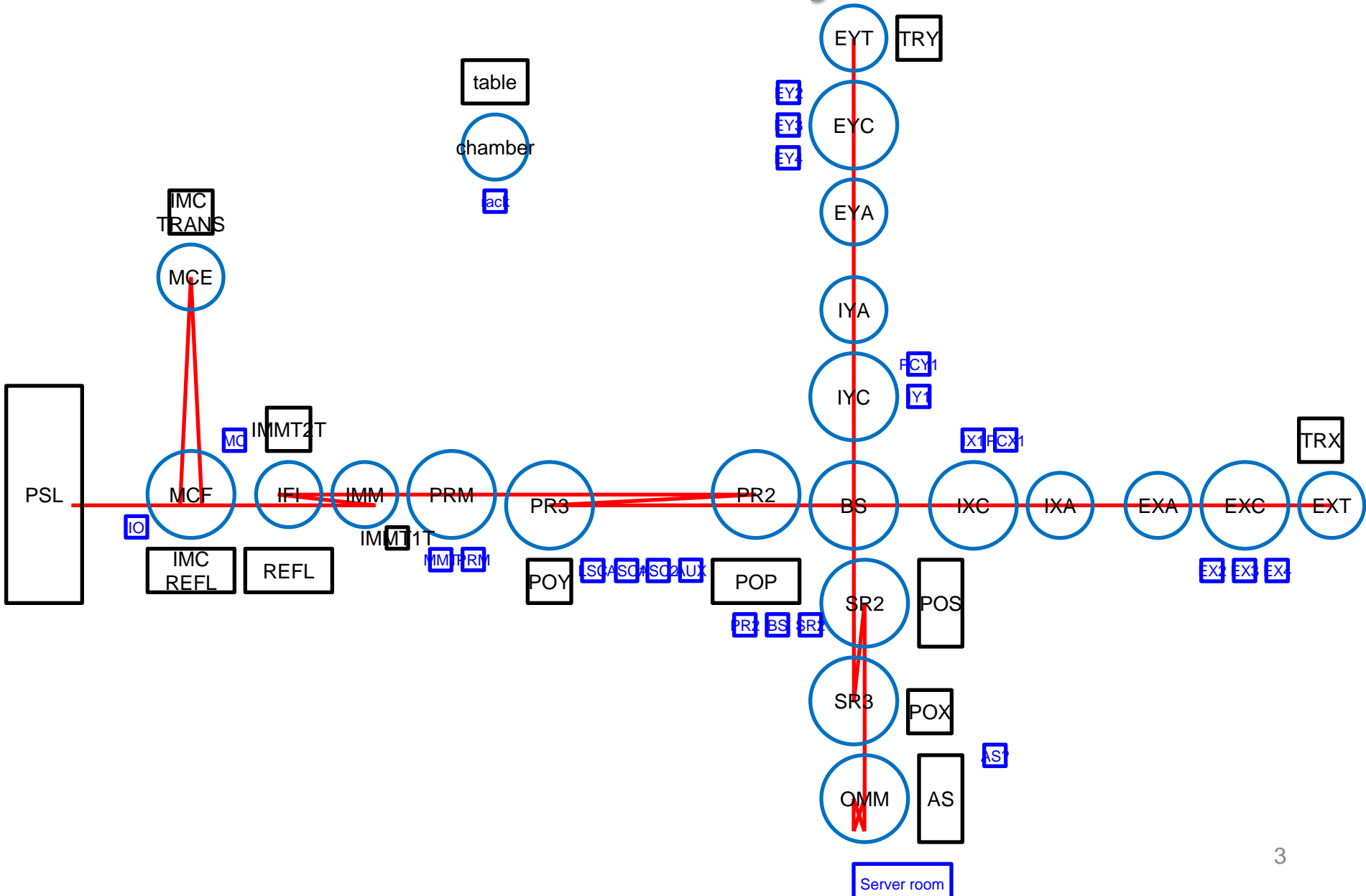
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Scope and Disclaimer

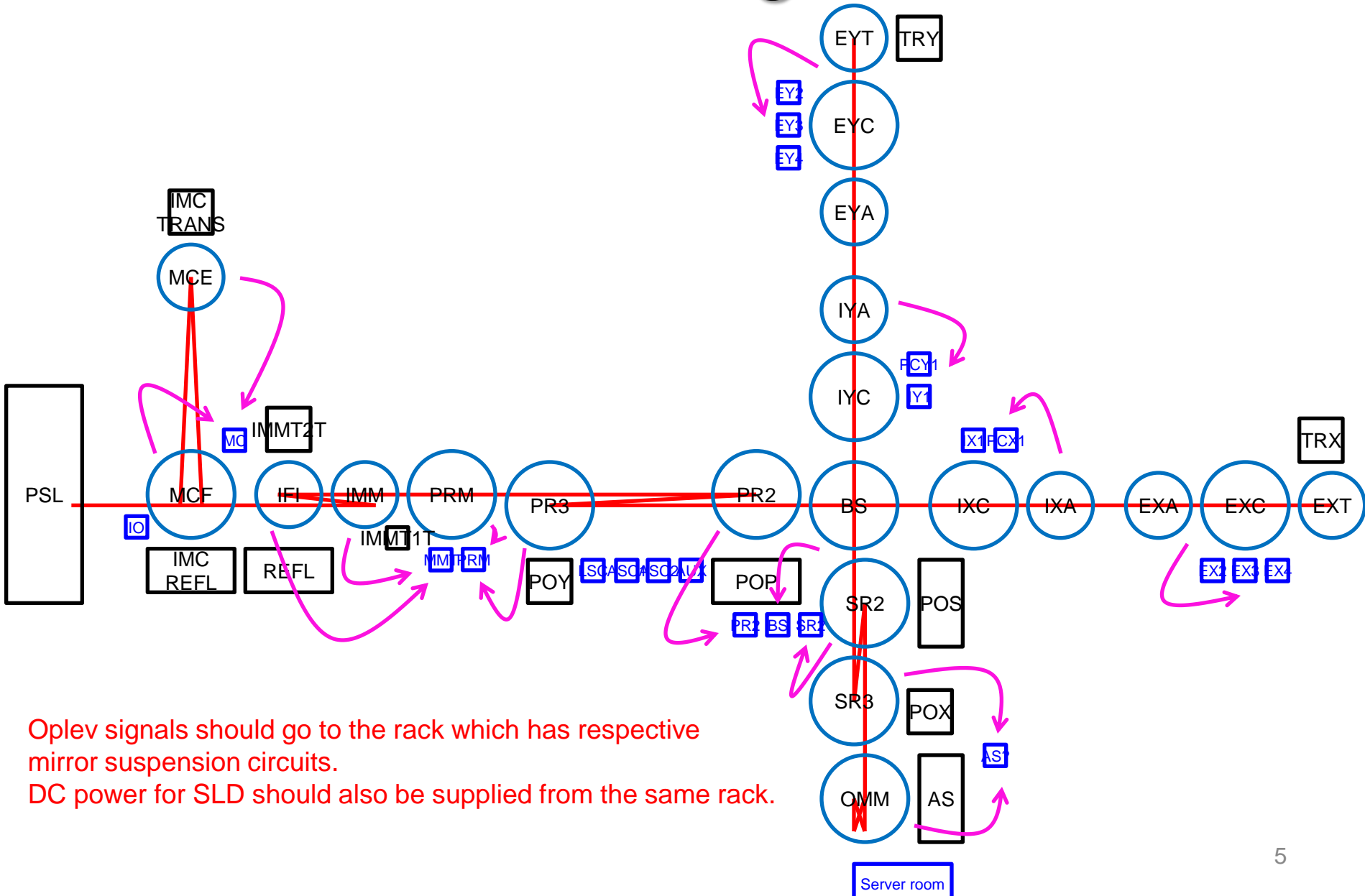
- Draw rough layout and cabling for optical levers (oplevs) for mirrors
- Oplevs for optical tables are not considered yet
- “AS rack” is currently not on the list from DGS/AEL group

- References:
 - [JGW-D1402411](#) (oplev QPD)
 - [JGW-D1302087](#) (oplev QPD interface with whitening)
 - [JGW-D1100425](#) (electronics racks layout)
 - [JGW-D1402831](#) (what’s inside electronics racks)

KAGRA Layout



Where Do Signals Go



Oplev signals should go to the rack which has respective mirror suspension circuits.
DC power for SLD should also be supplied from the same rack.

Light Source

- SLD (Super Luminescent Diode)
- SUPERLUM SLD-MS-261-MP1-FC/APC-PMF
- power ~1 mW, wavelength 680 nm
- needs +15 ~ +24 VDC
(+18V will be supplied from the racks; needs conversion connector)



Oplev QPD

- schematic: [JGW-D1402411](#)
- 4 DC outputs from quadrants (Dsub 15pin)
- needs +/- 15 VDC (Dsub 15pin)
(supplied from whitening filter interface)

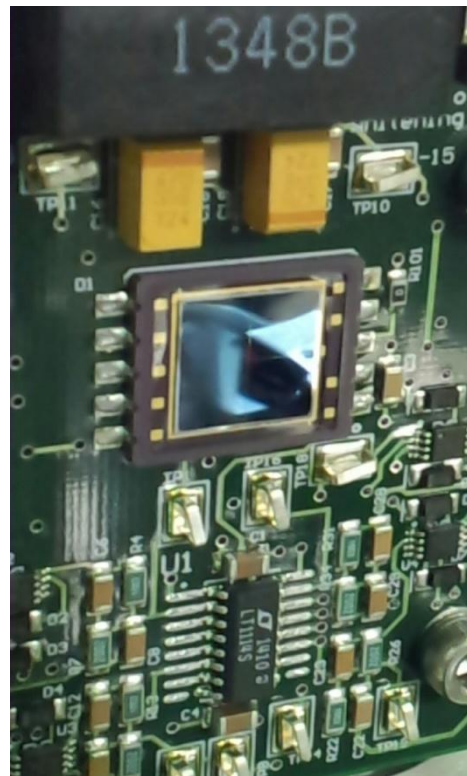
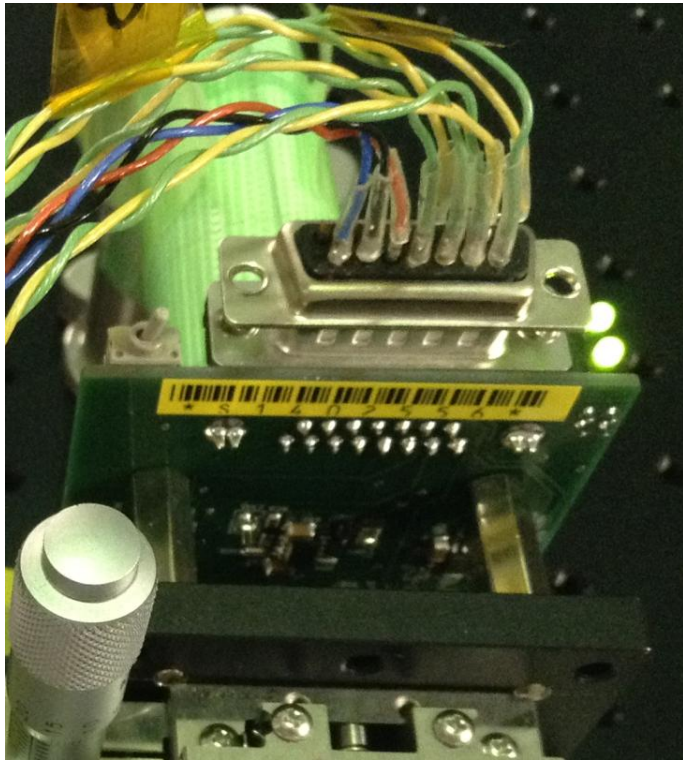
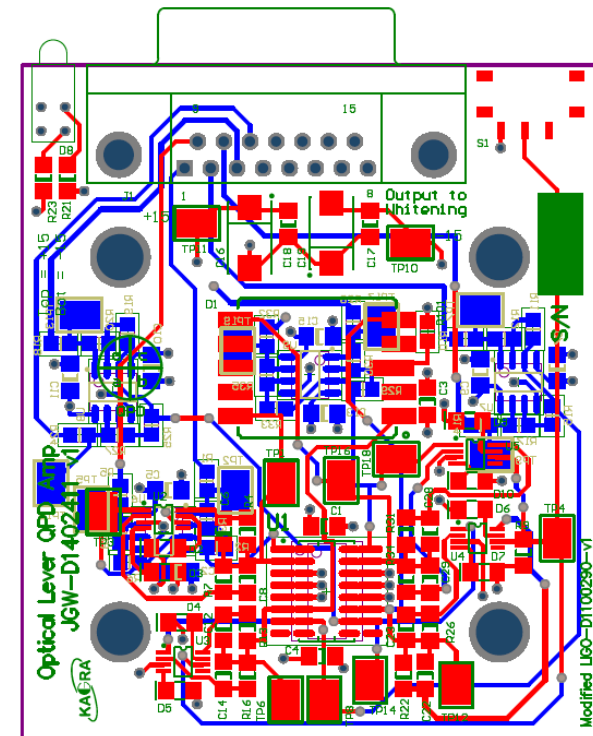


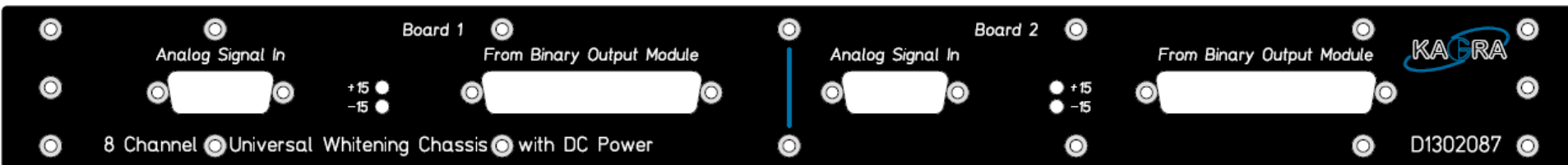
photo by Yaguchi



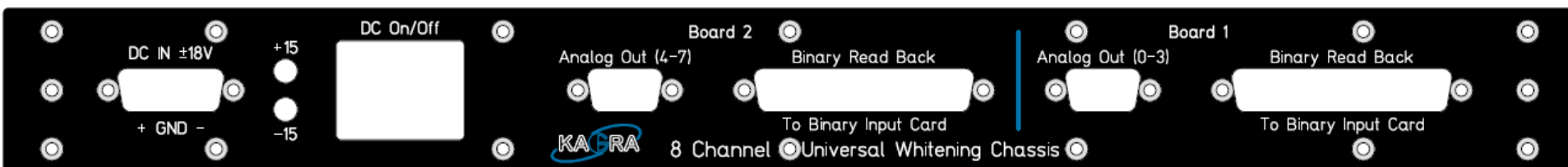
Oplev QPD Interface with Whitening

- schematic: [JGW-D1302087](#)
(Universal whitening filter with DC power) **for 2 QPDs**
- receives Dsub 15pin from QPD, supplies +/- 15 VDC for QPD, apply whitening filters for 4 DC outputs before they go to AA filters
- whitening filters will be switched with BO/BI (Dsub 37pin)
- needs +/- 18 VDC

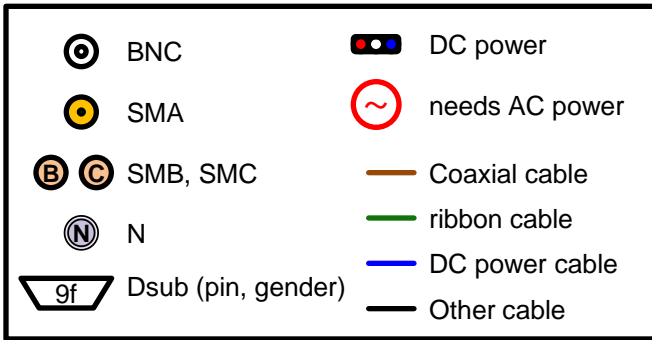
Front Panel



Rear Panel

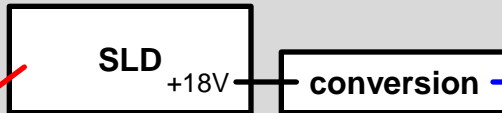


Cabling

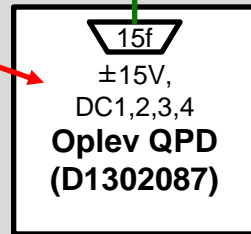


mirror

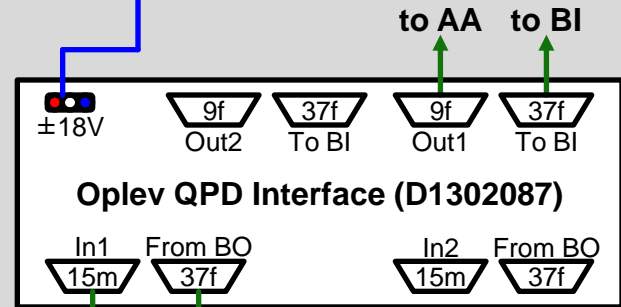
pylon



pylon



rack



from BO

AA: anti-aliasing filter
BO: binary output module
BI: binary input module