LIGO HANFORD OBSERVATORY

PO BOX 159

RICHLAND WA 99352

TEL: 509.372.8106

FAX: 509.372.8137

# MEMORANDUM

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| DATE:TO: | September 22, 2020Slow controls team |
| FROM: | Daniel Sigg |
| SUBJECT: | Modifications to the Beckhoff chassis |
| Refer to: | LIGO-E2000499-v1 |

Due to the elimination of the end station computers the remote access chassis in the end stations can be simplified. A set of terminals is removed including the bridge terminal that was used to communicate between computers.

**Change 1: Remote Access End**

 Drawing: D1100619-v3
 Wiring diagram: E1100455-v3

 Work: Combined the terminals into a single rail and
 remove terminals that are no longer needed
 Needed: 2x D1100095-v2 per end station (4 total/site)

**Change 2: Remote Access Corner**

 Drawing: D1100618-v2

 Work: Verify the position of the EL9400 terminal

The rotation stages are put on a separate rail that can be independently power cycled. As part of the A+ upgrade a picomotor controller for the PSL is added.

**Change 3: PSL/IO/TCS Controls Chassis**

 Drawing: D1101114-v6
 Wiring diagram: E1100530-v8

 Work: Separate rotation stage onto separate rails, add relay for power on/off

 Add picomotor interface terminals for A+

 Needed by rotation stage upgrade:

 1x EK1122

 1x EK1101

 1x EL1094

 1x EL2612

Needed by A+ upgrade:

1x D2000017-v1

2x D1100419-v3

1x EL9410

1x EL3102

1x EL1014

1x EL1872

1x EL2872

Additional picomotor controller interfaces are added to the corner chassis 2 for A+.

**Change 4: EtherCAT Corner 2**

 Drawing: D1100680-v3
 Wiring diagram: E1101126-v3

 Work: Add 3 picomotor controller interfaces

 Needed by A+ upgrade:

 1x D1102268-v2

1x EL9410

3x EL3102

3x EL1014

3x EL1872

3x EL2872

1x D1100419-v3

The EtherCAT chassis near HAM8 may require picomotor controllers as well.

 Needed by A+ upgrade:

 2x D1100419-v3