*LIGO Laboratory / LIGO Scientific Collaboration*

LIGO-T1200082 *Advanced LIGO* 9 February 2012

Beckhoff Breakout Box

Test Procedure

Steve O’Connor

Distribution of this document:

LIGO Scientific Collaboration

This is an internal working note

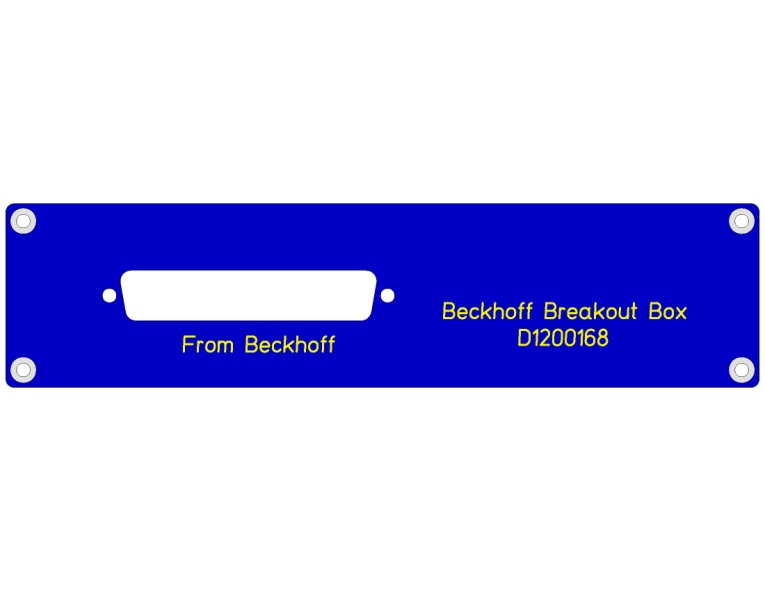
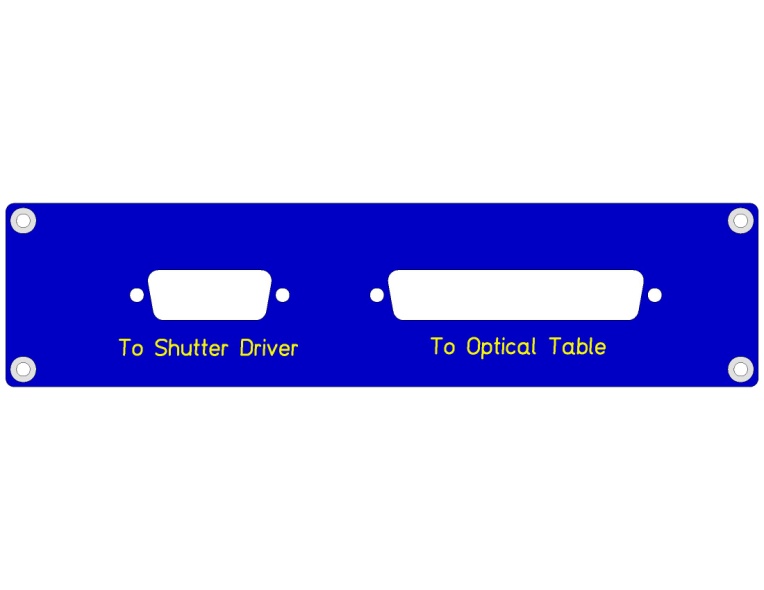
of the LIGO Laboratory.

|  |  |
| --- | --- |
| **California Institute of Technology**  **LIGO Project – MS 18-34**  **1200 E. California Blvd.**  **Pasadena, CA 91125**  Phone (626) 395-2129  Fax (626) 304-9834  E-mail: info@ligo.caltech.edu | **Massachusetts Institute of Technology**  **LIGO Project – NW22-295**  **185 Albany St**  **Cambridge, MA 02139**  Phone (617) 253-4824  Fax (617) 253-7014  E-mail: info@ligo.mit.edu |
| **LIGO Hanford Observatory**  **P.O. Box 1970**  **Richland WA 99352**  Phone 509-372-8106  Fax 509-372-8137 | **LIGO Livingston Observatory**  **P.O. Box 940**  **Livingston, LA 70754**  Phone 225-686-3100  Fax 225-686-7189 |

http://www.ligo.caltech.edu/

# Overview

This test procedure applies to the Beckhoff breakout box LIGO-D1200168. This Box splits the cable from the breakout box into a connector to the shutter driver and a connector to the Hartman optical table at the end station.



Upper Heater Segment

9 Pin D Conn

RTD

9 Pin D Conn

Lowe

I

V

T

# Setup

Using connector breakouts check all connections from 37 pin connector input to the 37 pin output and the 15 pin output.

## Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **FROM** |  |  | Optical |  |
| **37 pin Beckhoff** |  | Beckhoff | table |  |
| **to 37 pin Panel** |  | pin # | pin# | Connected |
|  |  | 1 | 1 |  |
|  |  | 2 | 2 |  |
|  |  | 3 | 3 |  |
|  |  | 4 | 4 |  |
|  |  | 5 | 5 |  |
|  |  | 6 | 6 |  |
|  |  | 7 | 7 |  |
|  |  | 8 | 8 |  |
|  |  | 9 | 9 |  |
|  |  | 10 | 10 |  |
|  |  | 11 | 11 |  |
|  |  | 12 | 12 |  |
|  |  | 13 | 13 |  |
|  |  | 14 | 14 |  |
|  |  | 15 | 15 |  |
|  |  | 16 | 16 |  |
|  |  | 17 | 17 |  |
|  |  | 18 | 18 |  |
|  |  | 19 | 19 |  |
|  |  | 20 | 20 |  |
|  |  | 21 | 21 |  |
|  |  | 22 | 22 |  |
|  |  | 23 | 23 |  |
|  |  | 24 | 24 |  |
|  |  | 25 | 25 |  |
|  |  | 26 | 26 |  |
|  |  | 27 | 27 |  |
|  |  | 28 | 28 |  |
|  |  | 29 | 29 |  |
|  |  | 30 | 30 |  |
|  |  | 31 | 31 |  |
|  |  | 32 | 32 |  |
|  |  | 33 | 33 |  |
| **FROM** |  |  | Optical |  |
| **37 pin Beckhoff** |  | Beckhoff | table |  |
| **to 37 pin Panel** |  | pin # | pin# | Connected |
|  |  |  |  |  |
|  |  | 34 | 34 |  |
|  |  | 35 | 35 |  |
|  |  | 36 | 36 |  |
|  |  | 37 | 37 |  |
|  |  |  |  |  |
| **FROM** |  |  |  |  |
| **37 Pin Beckhoff** |  | to driver | Beckhoff |  |
| **to 15 Pin Shutter** |  | pin # | pin# | Connected |
| **Driver** |  | 1 | 5 |  |
|  |  | 2 | 6 |  |
|  |  | 3 | 7 |  |
|  |  | 4 | 8 |  |
|  |  | 5 | 29 |  |
|  |  | 6 | 31 |  |
|  |  | 7 | 30 |  |
|  |  | 8 | 19 (gnd) |  |
|  |  | 9 | 24 |  |
|  |  | 10 | 25 |  |
|  |  | 11 | 26 |  |
|  |  | 12 | 27 |  |
|  |  | 13 | 10 |  |
|  |  | 14 | 12 |  |
|  |  | 15 | 11 |  |