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Test Procedure for the Picomotor Feedthrough and Breakout

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# Overview

The picomotor feedthrough, [D1101691-v1](https://dcc.ligo.org/public/0069/D1101691/001/D1101691-v1.pdf), connects to the front panel of a picomotor controller, [D1100323-v2](https://dcc.ligo.org/public/0039/D1100323/002/D1100323-v2.pdf), using a DB25 cable. The 2 DB9 outputs connect to a picomotor breakout box, [D1101738-v2](https://dcc.ligo.org/public/0069/D1101738/002/D1101738-v2.pdf), which contains 4 RJ-11 sockets to connect to 4 different picomotor axes. The picomotor controller is connected to a EtherCAT/Beckhoff system. The test software is described in [T1100458-v1](https://dcc.ligo.org/public/0069/T1100458/001/T1100458-v1.pdf).

# Test Equipment

* Picomotor controller, [D1100323-v2](https://dcc.ligo.org/public/0039/D1100323/002/D1100323-v2.pdf).
* Computer with EtherCAT/Beckhoff software for controlling picomotors.
* 1 DB25 m-f cable.
* 2 DB9 m-f cable.
* 1 picomotor with RJ-11 connector.
* DC power supplies.

# Feedthrough Test

Power up the measurement equipment and connect the picomotor feedthrough (DUT) as well as 1 or 2 picomotor breakout boxes. Connect the picomotor to the first axis and use the computer to drive it. Continue this for all 8 axes.

|  |  |  |
| --- | --- | --- |
| **Breakout** | **Axes** | **Pass/Fail** |
| 1 | 1X |  |
| 1 | 1Y |  |
| 1 | 2X |  |
| 1 | 2Y |  |
| 2 | 1X |  |
| 2 | 1Y |  |
| 2 | 2X |  |
| 2 | 2Y |  |

# Breakout Box Test

Power up the measurement equipment and connect a picomotor feedthrough as well as the picomotor breakout box (DUT). Connect the picomotor to the first axis and use the computer to drive it. Continue this for all 4 axes.

|  |  |
| --- | --- |
| **Axes** | **Pass/Fail** |
| 1X |  |
| 1Y |  |
| 2X |  |
| 2Y |  |