

# LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

**-LIGO-**

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<b>TCS Laser Chiller Chassis Gain Revisions</b>		
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## 1. Overview

The Thermal Compensation System (TCS) Laser Chiller Summing Chassis (D1500268-v1) houses a TCS Laser Chiller Summing Board (D1500265-V1), and a Chassis Power Supply Board (D1000217). It's function is to supply a DC level and sum it in with the DAC command, to allow the DAC level to be near zero under normal operating conditions, and maintain its level when the DAC freezes up. Revisions are needed to lower the summing weight of the DAC path, so that the chiller does not trip the laser when the DAC is restarted.

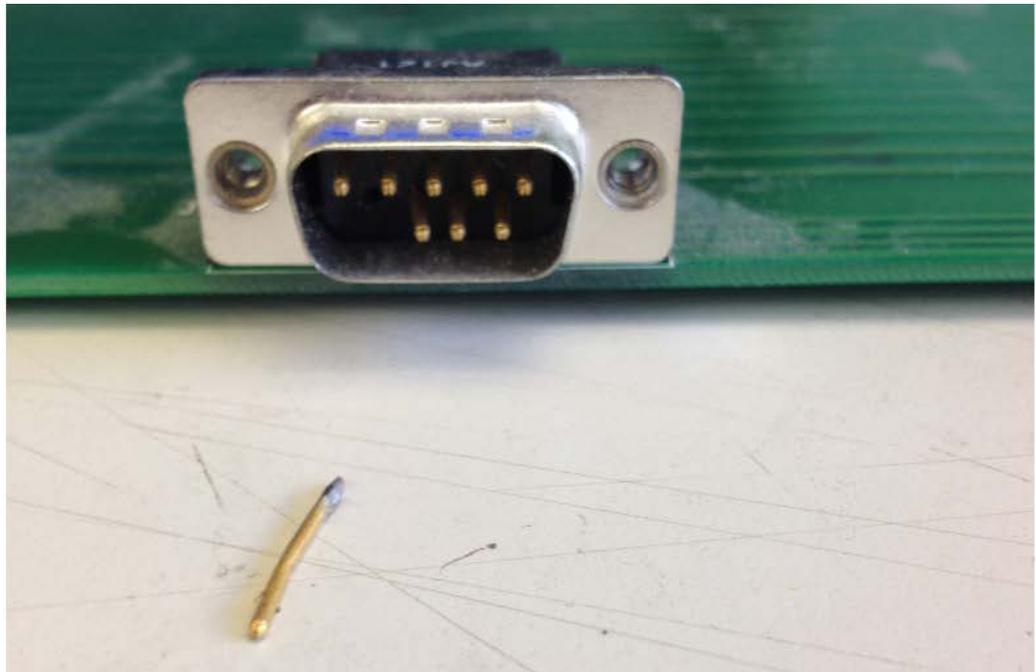
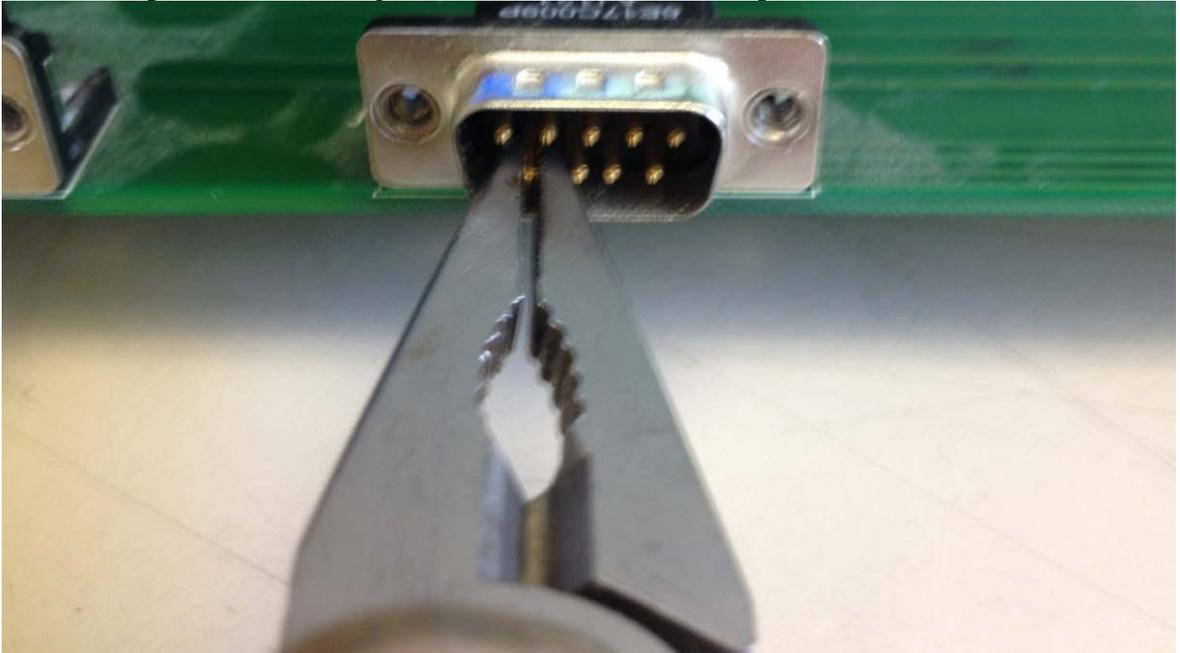
Revisions to the TCS Laser Chiller Summing Chassis:

Pin 6 removal to stop grounding the negative DAC leg:

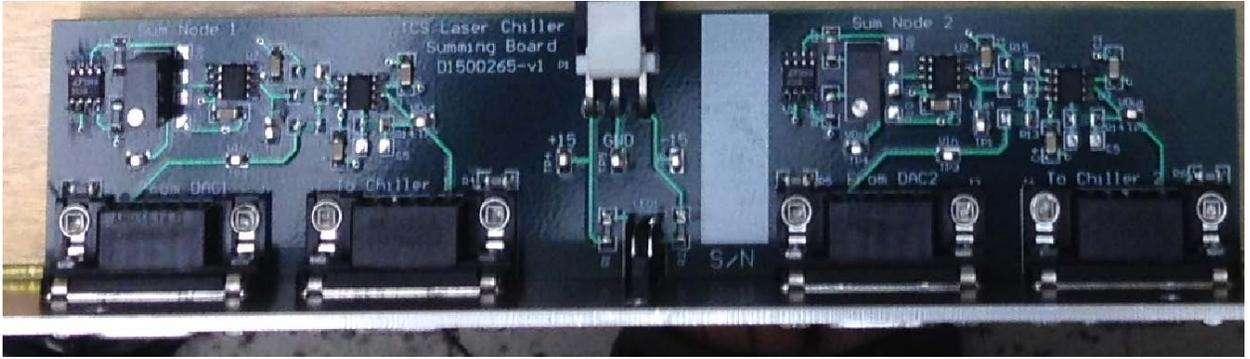
With a pair of needle-nosed pliers, forcibly extract pin 6 from the “From X-Arm DAC”, and “From Y-Arm DAC” connectors on the front of the TCS Laser Chiller Summing Chassis:



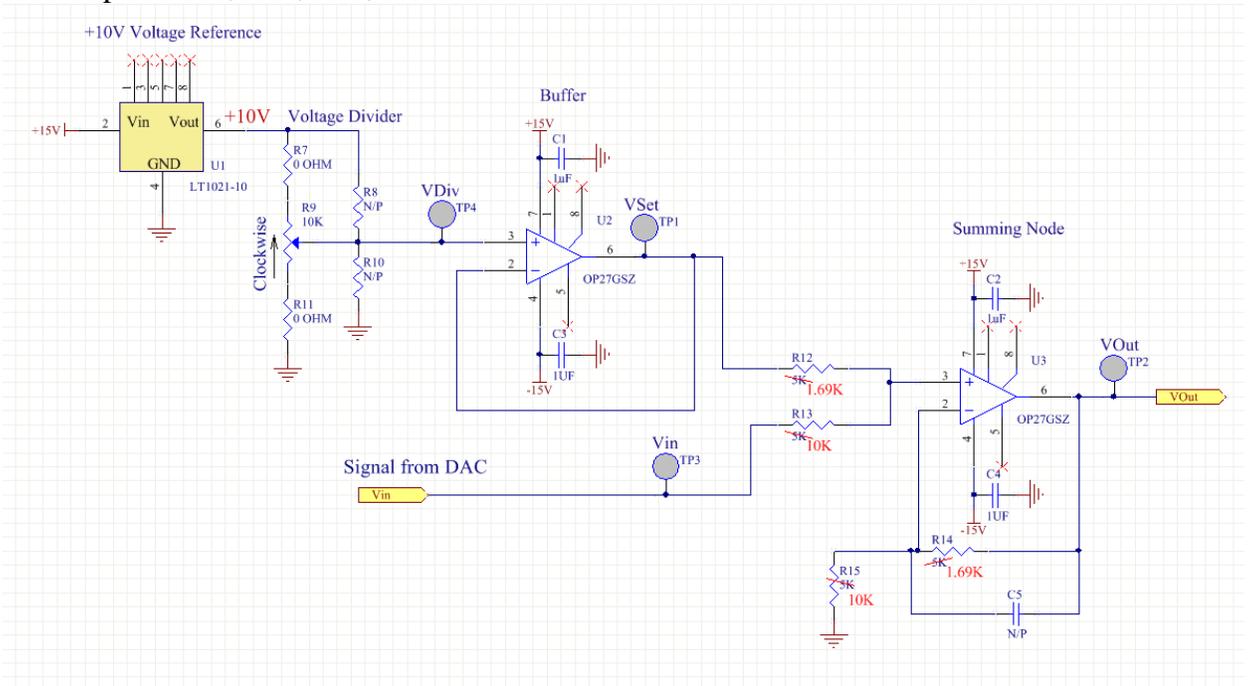
Here is a representation, using a different board as an example:



Discard the pin and remove the front panel, to expose the internal board:



Four resistors need to be changed for each chiller (8 resistors total), to reduce the gain of the DAC path: R12, R13, R14, and R15. Here are the new values:



Example part numbers from Digikey are: (1.69K) P1.69KBCCT-ND and (10K) TNP10.0KACCT-ND.

Re-assemble the chassis, and check that the gain of the DAC path is 0.17V/V.