

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

-LIGO-

CALIFORNIA INSTITUTE OF TECHNOLOGY

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Test Procedure	T1500540-v1	
TCS Laser Chiller Chassis Test Procedure		
B. Abbott		

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California Institute of Technology
LIGO Project – MS 18-33
Pasadena, CA 91125
Phone (626) 395-2129
Fax (626) 304-9834
E-mail: info@ligo.caltech.edu

Massachusetts Institute of Technology
LIGO Project – MS 20B-145
Cambridge, MA 01239
Phone (617) 253-4824
Fax (617) 253-7014
E-mail: info@ligo.mit.edu

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

Performed by: _____

Date: _____

Chassis Serial Number: _____

Board Serial Number: _____

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.

2. Test Equipment

- 2.1 +/- 18V Power supply
- 2.2 Two 9-pin Dsub Breakout boards
- 2.3 Digital Multimeter (DMM)
- 2.4 Voltage calibrator
- 2.5 Oscilloscope

3. Preliminaries

- 3.1 Perform visual inspection of the Chassis to make sure nothing looks overtly broken.
- 3.2 Connect the +/-18V power supplies to the back power connector, and turn on the chassis. The back panel +/-18V LEDs and the front panel +/-15 LEDs should all light up.

Are all 4 LEDs lit? Yes/No _____

4. Electrical Tests

- 4.1 Attach a 9-pin Dsub breakout board to the connector labeled "From X-Arm DAC", and connect the Voltage Calibrator to pins 1(+) and 6(-). Turn it on, but keep it set to 0V.
- 4.2 Attach another 9-pin Dsub breakout board to the connector labeled "To ChillerX", and connect the Digital Multimeter, and an oscilloscope to pins 1(+) and 6(-).
- 4.3 Open the box cover, and adjust R9 in "Sum Node 1" until the DMM reads 4.15V. Change the calibrator to 1V, and make sure that the DMM reads 5.15V, +/- 0.1V.

Enter Voltage Output: _____ V

- 4.4 At both voltage settings, check the scope, and make sure that there are no noticeable oscillations.

Clear of Oscillations? (Yes/No) _____

- 4.5 Next, attach the 9-pin Dsub breakout board to the connector labeled “From Y-Arm DAC”, and connect the Voltage Calibrator to pins 1(+) and 6(-). Turn it on, but keep it set to 0V.
- 4.6 Attach another 9-pin Dsub breakout board to the connector labeled “To ChillerY”, and connect the Digital Multimeter and an oscilloscope to pins 1(+) and 6(-).
- 4.7 Open the box cover, and adjust R9 in “Sum Node 2” until the DMM reads 4.15V. Change the calibrator to 1V, and make sure that the DMM reads 5.15V, +/- 0.1V.

Enter Voltage Output:_____V

- 4.8 At both voltage settings, check the scope, and make sure that there are no noticeable oscillations.

Clear of Oscillations? (Yes/No)_____