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LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

-LIGO-

CALIFORNIA INSTITUTE OF TECHNOLOGY

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GS-13_L4-C Emulation Module Design Document		
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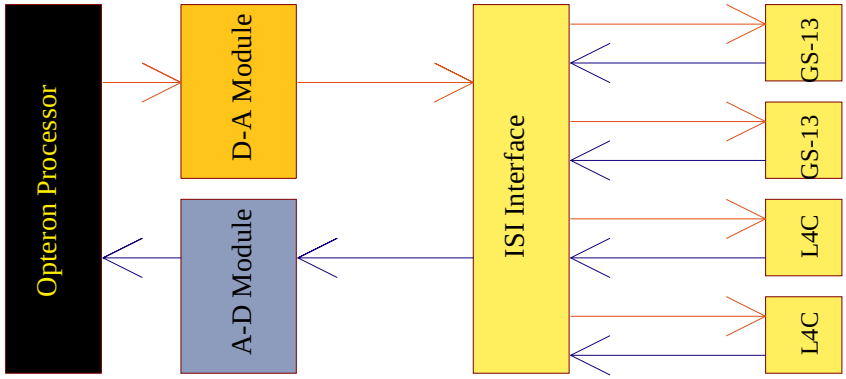
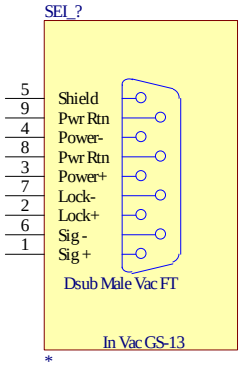
1 Introduction

This document describes the design of a module that will emulate the functionality of an L4C or GS-13 seismometer. This one module will be able to mimic either module with a selector switch that determines which seismometer type it is emulating. The emulation module will be able to take the place of either seismometer so that the control system software and wiring can be checked out with no danger of damaging the actual seismometers. The 15-pin D-Sub connector will have the same pin-out and gender (male) as the connector that currently exists on the external face of the seismometer in-vacuum pods

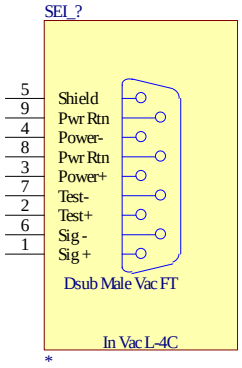
2 Block Diagram



3 L4C and GS-13 Pinouts



The GS-13 differs from the L4-C pinout only in pins 2 and 7. What is Lock+ and Lock- on The GS-13, is Test+ and Test- on The L4-C



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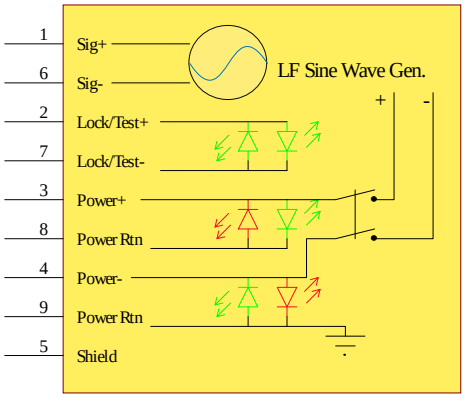
4 Functionality

The simplest version of the emulation module might consist of a low-frequency sine wave generator to simulate a 10Hz seismic signal, and LEDs that show the presence and polarity of lock/test signals, positive power and negative power. It would be powered from the incoming power, once the power LEDs indicate that the power has the correct polarity. With this scenario, no bulky bench power supply would be needed.



More bells and whistles might include BNC jacks to inject an alternate sine wave, and other BNCs to read out the other signals and power lines.