

# LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

**-LIGO-**

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<b>aLIGO IO Expansion Chassis Assembly Procedure</b>		
J. Heefner, T. Etzel		

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<b>California Institute of Technology</b>	<b>Massachusetts Institute of Technology</b>
<b>LIGO Project – MS 18-33</b>	<b>LIGO Project – MS 20B-145</b>
<b>Pasadena, CA 91125</b>	<b>Cambridge, MA 01239</b>
Phone (626) 395-2129	Phone (617) 253-4824
Fax (626) 304-9834	Fax (617) 253-7014
E-mail: info@ligo.caltech.edu	E-mail: info@ligo.mit.edu

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

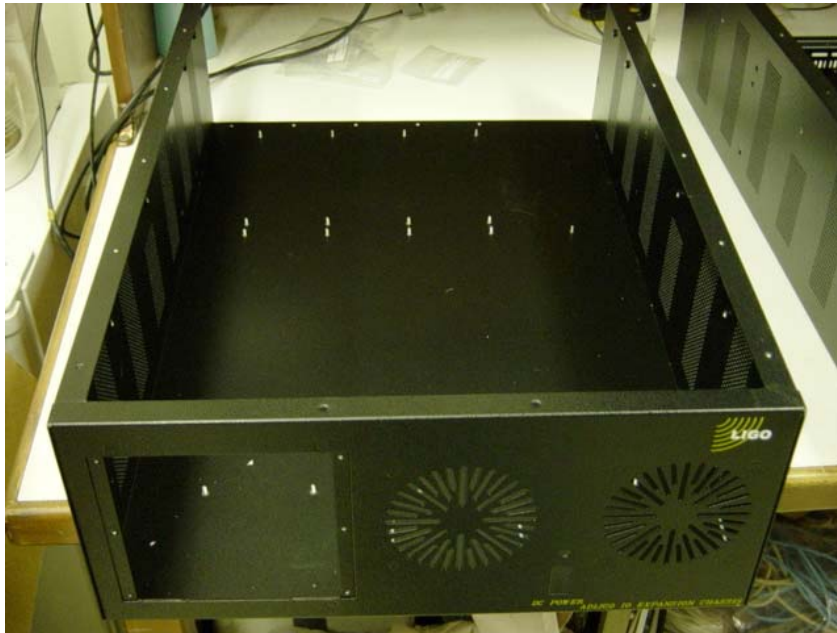
# 1 Introduction

This document covers the assembly procedure for the aLIGO IO Expansion Chassis. The top level assembly drawing for the chassis is LIGO Document D1001715, "IO Expansion Chassis- Top Assembly Drawing". The procedure described below is not absolutely required, but has been found to be the most efficient method.

# 2 Procedure

The basic box will come in 6 major pieces: The box, the rear panel, the center divider, the timing slave bracket, the large base plate and the small base plate.

The figure below shows the box chassis base (D1001701) with no pieces installed.



**Figure 1: IO Chassis Base (D1001701)**

Step 1—Attach the rear panel (D1001703) to the base.

Step 2—Insert the Internal Bracket (D1001705) in the base

Step 3—Insert the Internal Panel (D1001706) in the base and attach with nuts and screws per drawing.

Step 4—Insert the Rear Bottom Panel (D1001707) into the base and attach with nuts per the drawing.



**Figure 2: Chassis Base with Rear Panel and Internal Bracket, Internal Panel and Rear Bottom Panel Installed**

Step 5—Mount the power supply to the Rear Panel.



**Figure 3: Power Supply Mounted in Chassis Base. Note that Internal Panel has been removed for picture and the power supply being installed may be slightly different than the one shown.**

Step 6—Mount fans and front panel power Indicator Lamp. Fans should be oriented so that airflow in into chassis. Fans should be attached with nuts per the drawing.

Step 7— Install spacers in the Internal Bracket and Rear bottom Panel per the drawing. These are used to attach the two internal backplanes to their respective panels.

Step 8—Mount the Trenton BPX6806 expansion backplane to the Internal Panel per the drawing.

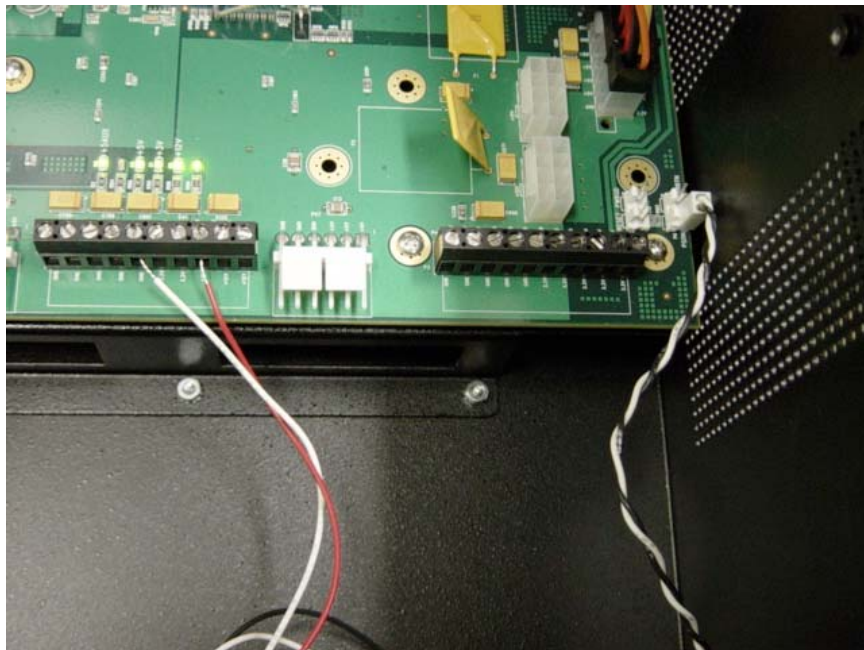
Step 9—Mount the IO Interface Board (D0902029) to the Rear Bottom Panel per the drawing.

Step 10—Connect ATX Power cable to Trenton Backplane. Cable should be routed as shown in the picture below.



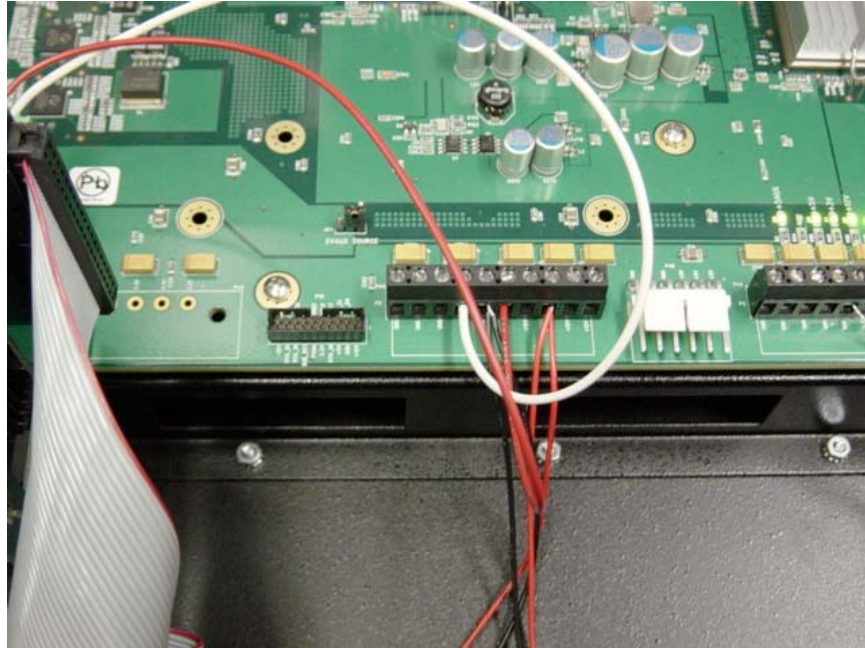
**Figure 4: ATX Power Cable Connection to Backplane**

Step 11—Connect fan power supply leads and front panel indicator to terminal blocks on Trenton backplane as shown in the pictures below.



**Figure 5: Front Panel Switch (White and Black wires) and Front Panel Indicator (Red and White wires) connections to Backplane Terminal Blocks**





**Figure 6: Fan Wire (Red and Black) Connections to Trenton Backplane. Note that Red and White wires are not used in this version of the chassis**

Step 12—Install front panel switch. Attach wires to switch and connect to Trenton backplane as shown in Figure 5 above.

Step 13—Connect HDD power cable to IO backplane (D0902029).

Step 14—Dress all unused power supply cable neatly in the space between the power supply and the Internal Panel (D1001706).

Step 15—Mount the Timing Slave Assembly into the Chassis Base per the drawing.

Step 16—Connect the Timing Slave Power Cable (Need drawing for power Cable) between the slave and the IO backplane.

Step 17—Connect the 40 Pin ribbon cable between the Timing Slave Interface Board and the IO Backplane.

Step 18—Install Rackmount Rails on sides of Chassis Base

Step 19—Install Handle Brackets (D1001702), handles and ferrules per the drawing.