

**LASER INTERFEROMETER GRAVITATIONAL WAVE
OBSERVATORY**

-LIGO-

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Document Type Technical	DCC Number LIGO-T020060-00-C	April 24, 2002
SEISMIC SIGNAL REMOTE INTERFACE BOX ACCEPTANCE TEST PROCEDURE		
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MICRO-SEISMIC SYSTEM REMOTE INTERFACE BOX ACCEPTANCE TEST PROCEDURE

Serial Number: _____

Date Tested: _____

Tested By: _____

1.0 INTRODUCTION

The Micro-Seismic System Remote Interface Box buffers seismic signals picked up by the Streckeisen Tri-Axial Seismometer (STS-2) to provide local display and circuitries to interface with control and storage media in the control rack. Besides passing the differential X, Y, Z axes seismic signal from the Host Box directly to the Post Processor, it picks off a portion of them to generate local monitoring points. Provide capability to excite Host's Mass Position of Sensor U, V, and W from the front panel; provides power supply to the Host Box and function control for the AUTZ, CALSW, SIGSW and PERSW switches.

2.0 EQUIPMENT

The following equipment, or its equivalent, shall be used to perform this acceptance test:

1. Tektronix Model TDS3034 300 MHz Oscilloscope with two probes
2. Stanford Research Model DS345 Synthesized Function Generator
3. One Tenma Model DCPS 72-2082 Dual output Power Supply

3.0 TEST EQUIPMENT SET UP

- 3.1 All test equipment shall be properly calibrated according to manufacturer's operation manuals, where applicable, prior to use.
- 3.2 Set up the equipment as shown in Figure 1 below.

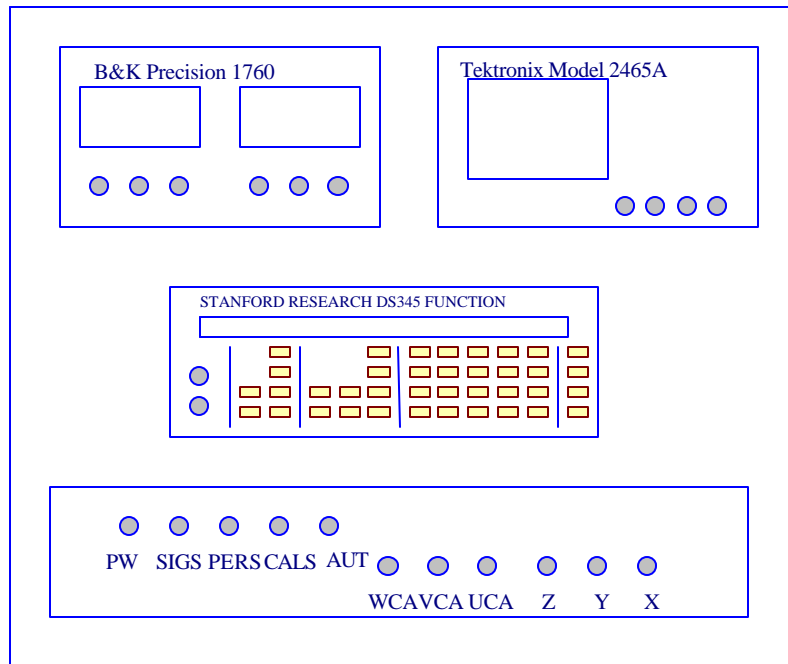


Figure 1. Remote Interface Box Test Setup

4.0 TEST PROCEDURE

- 4.1 Perform visual inspection on the Unit Under Test (UUT) to make sure that it is in good order.
- 4.2 Set the power supply to + 24 Vdc.
- 4.3 With the power supply turned OFF, connect +24V to J6-7 and/or J6-14; +24V RETURN (RTN) to J6-6 and/or J6-13.
- 4.4 Turn on power to all equipment; make sure that power light on the UUT front panel is ON.
- 4.5 Allow the equipment to warm up for approximate 5 minutes then record the following:

Table 1.0 Power Supply Current

+ 24V POWER SUPPLY		
	NOMINAL	ACTUAL
+24V	200 mA	

5.0 SEISMIC SIGNAL TEST PROCEDURE

5.1 Set output of the function generator to a sine wave at 100 Hz with amplitude of 1.0 volt peak-to-peak. Sequentially apply this signal to the between pins J1-D (Signal) and J1-J (RTN) etc, measure the output amplitude between J2-A (Signal) and J2-B (RTN) as shown in Table 2.0:

Table 2.0 Seismic Signal Functionality Test

INPUT	OUTPUT	AMPLITUDE
J1-D and J1-J	J2-A and J2-B	
J1-D and J1-J	J3	
J1-C and J1-H	J2-C and J2-D	
J1-C and J1-H	J4	
J1-B and J1-G	J2-E and J2-F	
J1-B and J1-G	J5	
J1-T and J1-S	J2-G and J2-H	
J1-V and J1-S	J2-J and J2-K	
J1-U and J1-S	J2-L and J2-M	

6.0 CONTROL SIGNAL TEST PROCEDURE

6.1 Sequentially apply a +5.0 Vdc signal through a 2.7K Ohm resistor to J2, J3, J10 and J11 and +5V RTN to J6-4 and measure the outputs amplitude at J1-E, J1-R, J1-K and J1-L with respect to J1-S. Record the condition of the corresponding LED on the front panel on Table 3.0:

Table 3.0 Control Signal Functionality Test

INPUT	OUTPUT	AMPLITUDE (>4.0 V Nominal)	LED
J6-2 AND J6-4	J1-E and J1-S		
J6-10 and J6-4	J1-K and J1-S		
J6-3 and J6-4	J1-R and J1-S		
J6-11 and J6-4	J1-L and J1-S		

7.0 CALIBRATION SIGNAL TEST PROCEDURE

7.1 Sequentially apply the 1.0 volt peak-peak sine wave from the generator to the inputs J7, J8 and J9, record their respective output amplitude between J1-Q (Signal) and J1-M (RTN) etc, below:

Table 4.0 Calibration Signal Functionality Test

INPUT	OUTPUT	AMPLITUDE
J7	J1-Q and J1-M	
J8	J1-N and J1-M	
J9	J1-P and J1-M	

8.0 HOST BOX POWER SUPPLY VERIFICATION

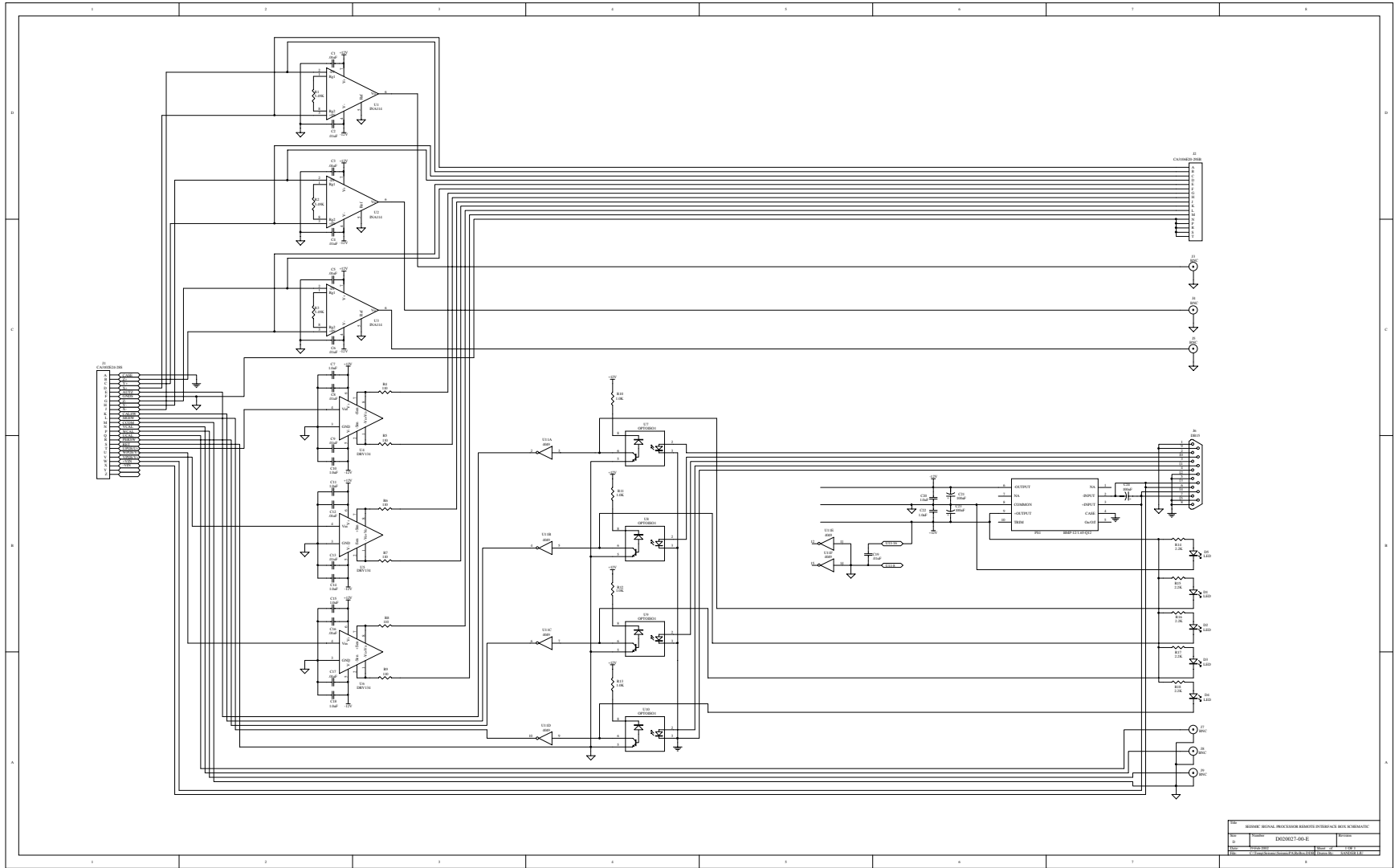
8.1 Measure the voltage between pins J1-W and J1-X (Return) and record in Table 8.0 below:

Table 5.0 Host Box Power Supply Verification

INPUT	VOLTAGE (Nominal +24V)
J1-W and J1-X	

9.0 CONCLUSION

This concludes the acceptance test procedure for the Seismic Signal Remote Interface Box.



BOMAC SERIAL PROCESSOR REMOTE INTERFACE W/ALU MEMOZAP			
REV	DATE	DESIGNED BY	DATE
1		DK0007-00-E	
2			
3			
4			
5			
6			
7			
8			
9			
10			