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# LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

**-LIGO-**

**CALIFORNIA INSTITUTE OF TECHNOLOGY**

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

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<b>Universal Dewhitening Board (Rev B5) Test Plan</b>		
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# 1 Introduction

The tests described below are required to verify the correct operation of the Universal Dewhiting Board Rev B5 (D000183, Rev B5).

# 2 Test Equipment

Dynamic Signal Analyzer  
 Oscilloscope  
 Power supplies

# 3 Tests

## 3.1 Input Power

Record the input voltage and current in the table below. Values should be +/-20mA of the nominal values.

Supply	Nominal Current	Actual	Pass/Fail
+15 V	0.15 A		
-15 V	0.15 A		

## 3.2 Butterworth Response

The nominal response of each section of each channel, when the filter is engaged, has 2 real poles at 15 Hz and two real zeros at 100 Hz. Using the dynamic signal analyzer, verify and record the response of each section of each channel in the table below. Channels are considered to be responding correctly if the magnitude and phase are within 1dB and 5 degrees, respectively of the nominal values.

Channel/ Section	Jumpers	Filter Enable	Gain/Phase at 1Hz Nom 9.6dB/ 178deg	Gain/Phase at 50Hz Nom -11dB/ 68deg	Gain/Phase at 1KHz Nom -23dB/ 174deg
1/1	Jb1, 1-2 Jb2, 2-3 Jb3, 2-3	P1-1A ground			
1/2	Jb1, 2-3 Jb2, 1-2 Jb3, 2-3	P1-1A ground			
2/1	Jb4, 1-2 Jb5, 2-3 Jb6, 2-3	P1-2A ground			
2/2	Jb4, 2-3 Jb5, 1-2 Jb6, 2-3	P1-2A ground			
3/1	Jb7, 1-2 Jb8, 2-3 Jb9, 2-3	P1-3A ground			
3/2	Jb7, 2-3 Jb8, 1-2 Jb9, 2-3	P1-3A ground			
4/1	Jb10, 1-2 Jb11, 2-3 Jb12, 2-3	P1-4A ground			

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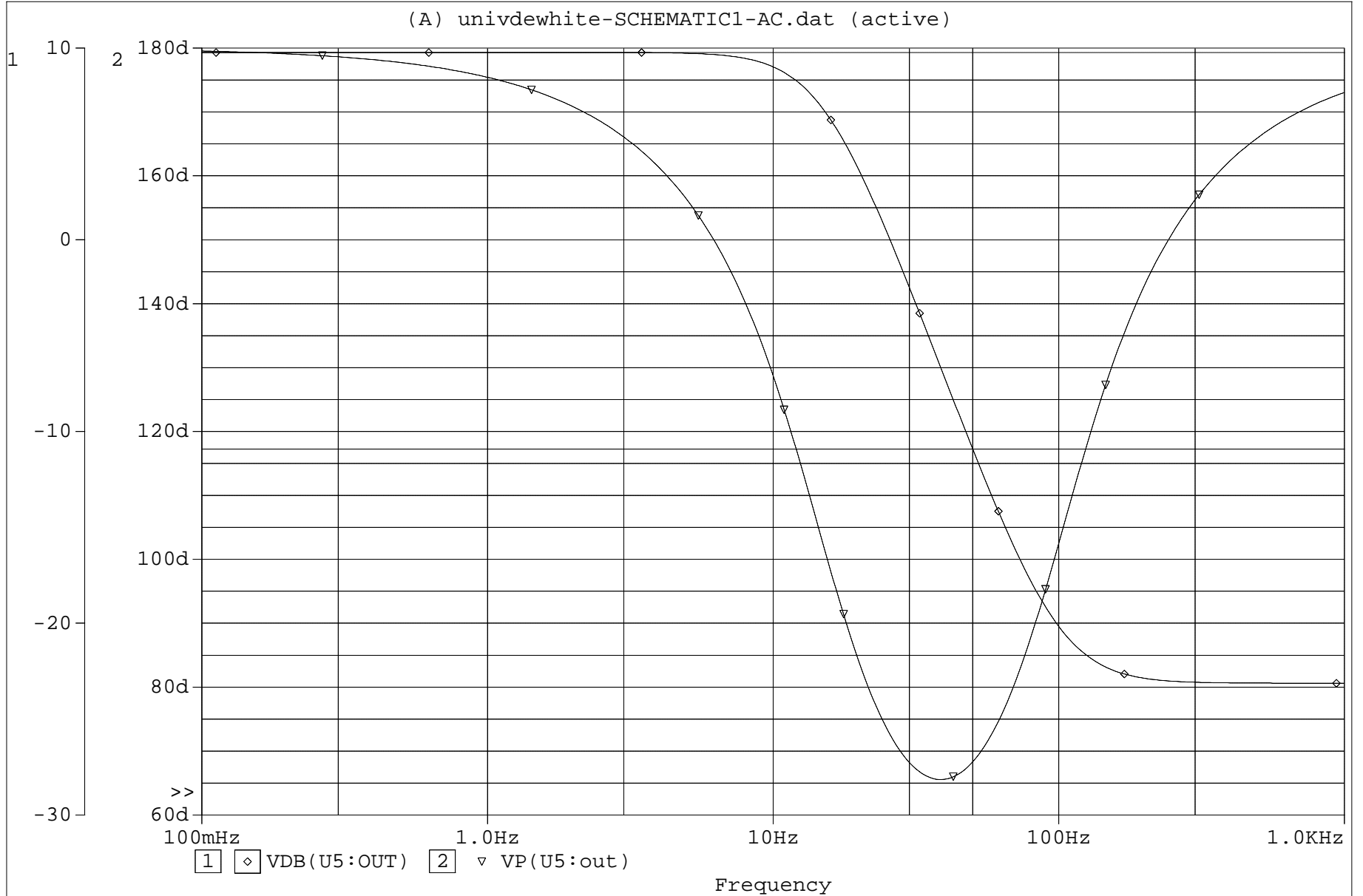
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4/2	Jb10, 2-3 Jb11, 1-2 Jb12, 2-3	P1-4A ground			
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### 3.3 Bypass Enable/Disable

The nominal response of each channel, when the filter is bypassed, is a flat response (gain=9.6dB) from DC to freq>10KHz. Using the dynamic signal analyzer verify that the response of each channel is flat to 10KHz.

Channel	Bypass enable	Response flat?
1	P1-1A open	
2	P1-2A open	
3	P1-3A open	
4	P1-4A open	



A1:(49.949,-10.909) A2:(100.000m,9.771) DIFF(A):(49.849,-20.680)