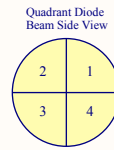
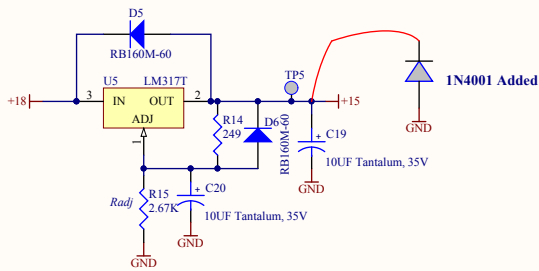
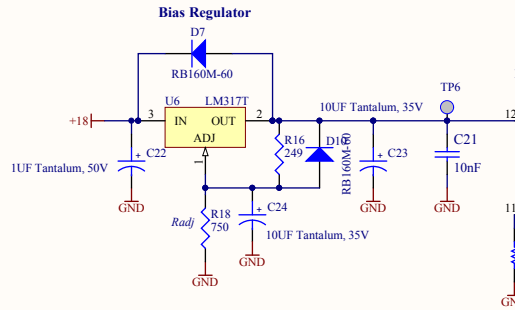


Main Interface for DC Signals and Power

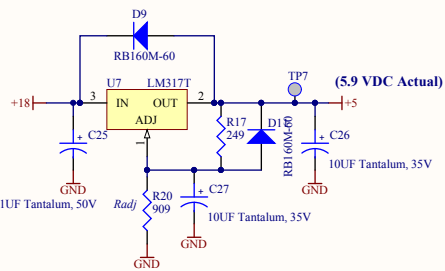


Quadrant Diode Beam Side View

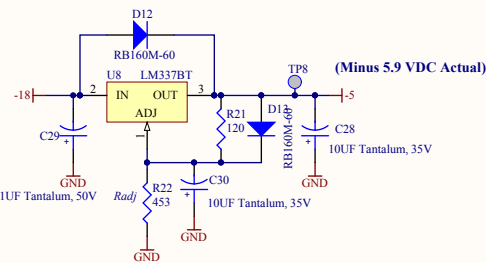


Bias Regulator

4 Quadrant Photodiode



(5.9 VDC Actual)

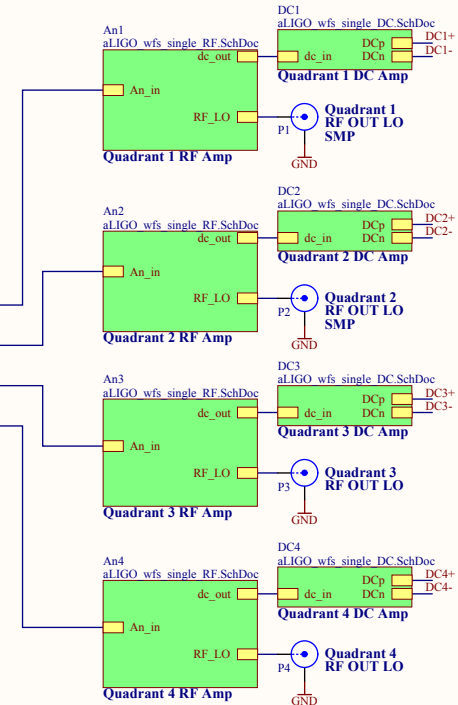
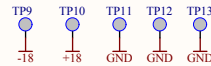


(Minus 5.9 VDC Actual)

Nominal Power Supply Current	
+18	= 0.14 amps
-18	= 0.14 amps

Voltage Regulator Equations	
LM337	$V_o = -1.25(1 + \text{Radj}/120) + (50\mu\text{A} * \text{Radj})$
LM317	$V_o = 1.25(1 + \text{Radj}/249) + (100\mu\text{A} * \text{Radj})$

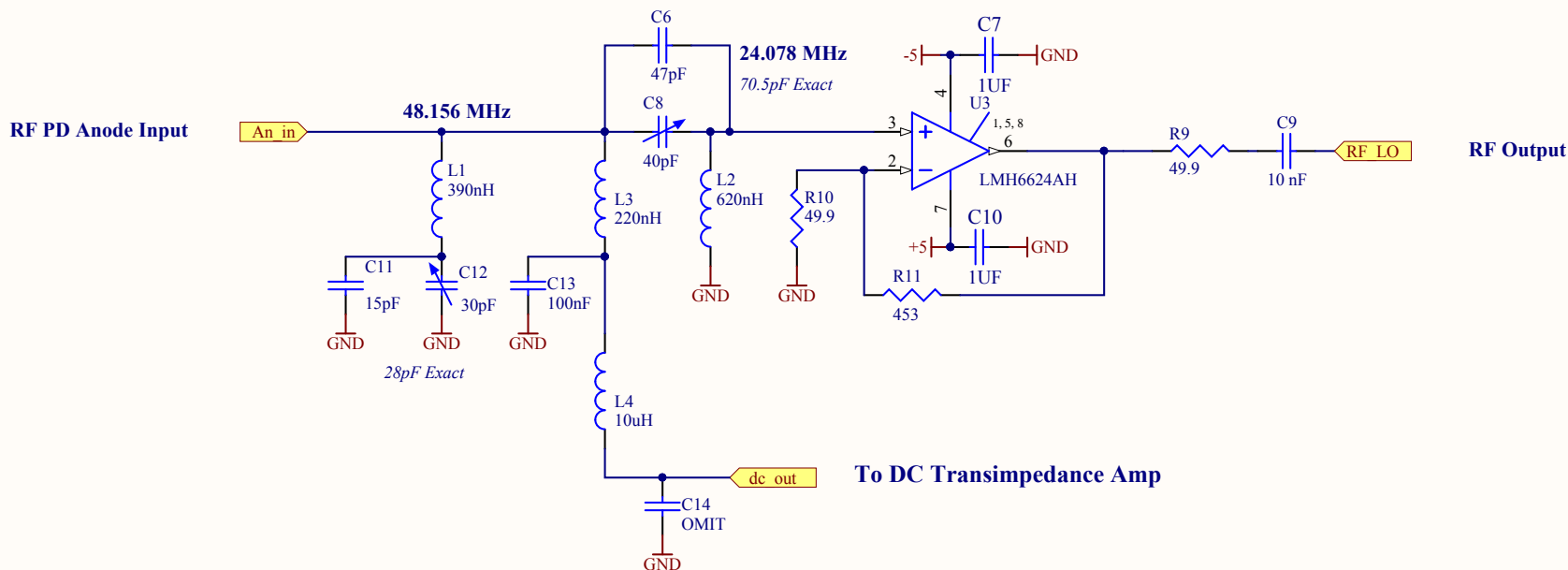


Revision History:  
 Rev1 - Initial release  
 Rev2 - Updated component values on RF resonant circuits to correspond to input MC frequencies  
 Rev3 - In response to single supply sensitivity, changed U2 from AD8597 to LT1128, changed U1 from AD8599 to AD8672, removed C14 to stabilize LT1128. Bypassed C16 and C19 with reverse biased 1N4001 diode to clamp the +/-15V regulated supplies.

Last Edited: 05 February 2013

Title <b>aLIGO ASC RF Photodetector</b>		LIGO Laboratory California Institute of Technology Massachusetts Institute of Technology		LIGO	
Size: B	DCC Number: D1200066	Revision: v3	Engineer: R. Abbott	Date: 2/6/2013	Time: 3:11:22 PM
File: C:\Rich's Files\Mycadfiles\ISC\Adl_RFPPD\2012 aLIGO WFS Single\WFS Single v3\aligo wfs single top sheet 1 of 3					

### Input MC Frequencies Shown



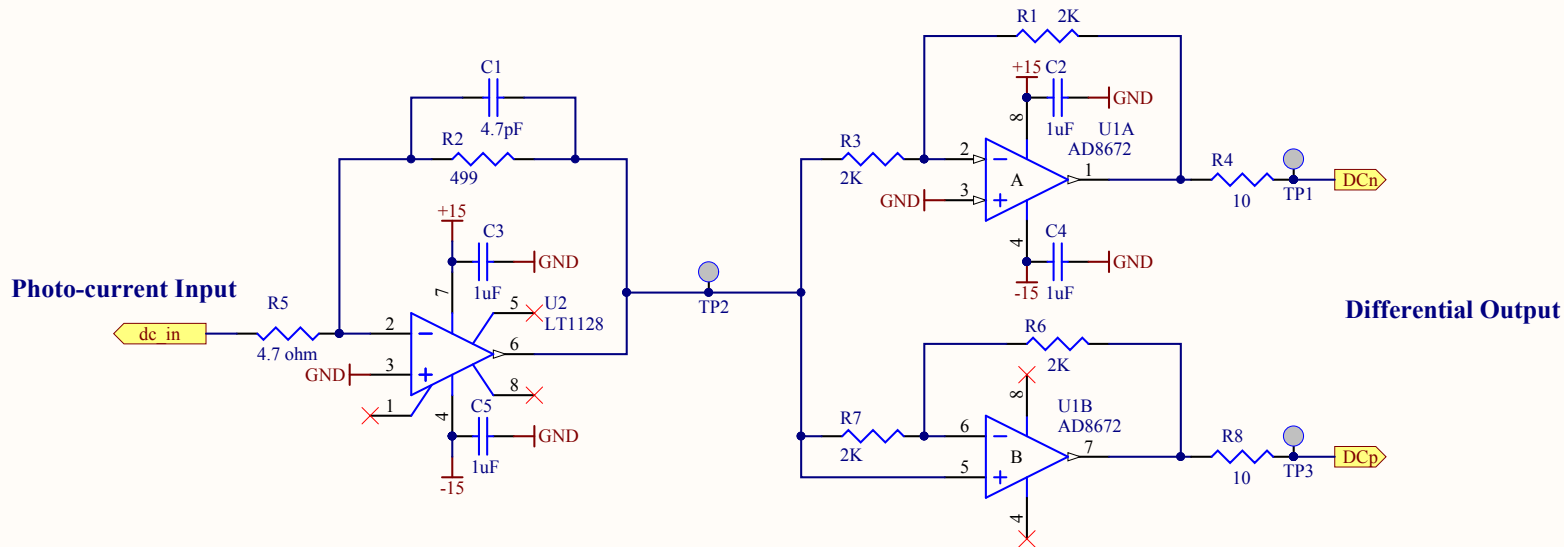
24/48 MHz Design Corresponds to: C:\Rich's Files\LT Spice\PhotodiodeAnalysis\lsc\_rfpds\alIGO\_ASC\_2011\24.1\_ASC\_v1.asc

See page 13 of the following for signal levels  
<https://dcc.ligo.org/DocDB/0012/T1000298/002/lscfd.pdf>

Last Edited: 05 February 2013

Title <b>RF Section</b>		LIGO Laboratory California Institute of Technology Massachusetts Institute of Technology		LIGO	
Size: A	DCC Number: D1200066	Revision: v3	Engineer: R. Abbott	Date: 2/6/2013	Time: 3:11:22 PM
File: C:\Rich's Files\Mycadfiles\ISCA\DL_RFPD\2012_aLIGO_WFS_Single\WFS_Single_v3\alIGO_wfs_single_RF_Sch_Sheet 2 of 3					

### DC Transimpedance Amp (15mA Maximum Photo-current)



Last Edited: 05 February 2013

Title <b>DC Section</b>		LIGO Laboratory California Institute of Technology Massachusetts Institute of Technology		<b>LIGO</b>
Size: A	DCC Number: D1200066	Revision: v3	Engineer: R. Abbott	Date: 2/6/2013
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Sheet 3 of 3				

