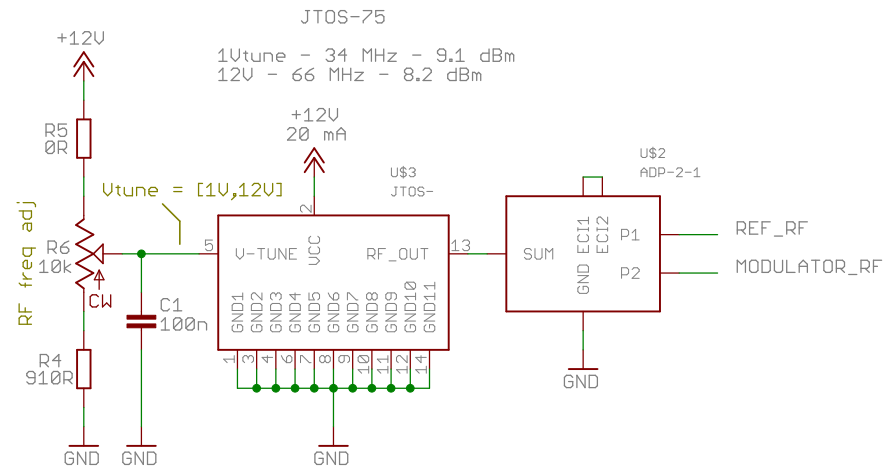
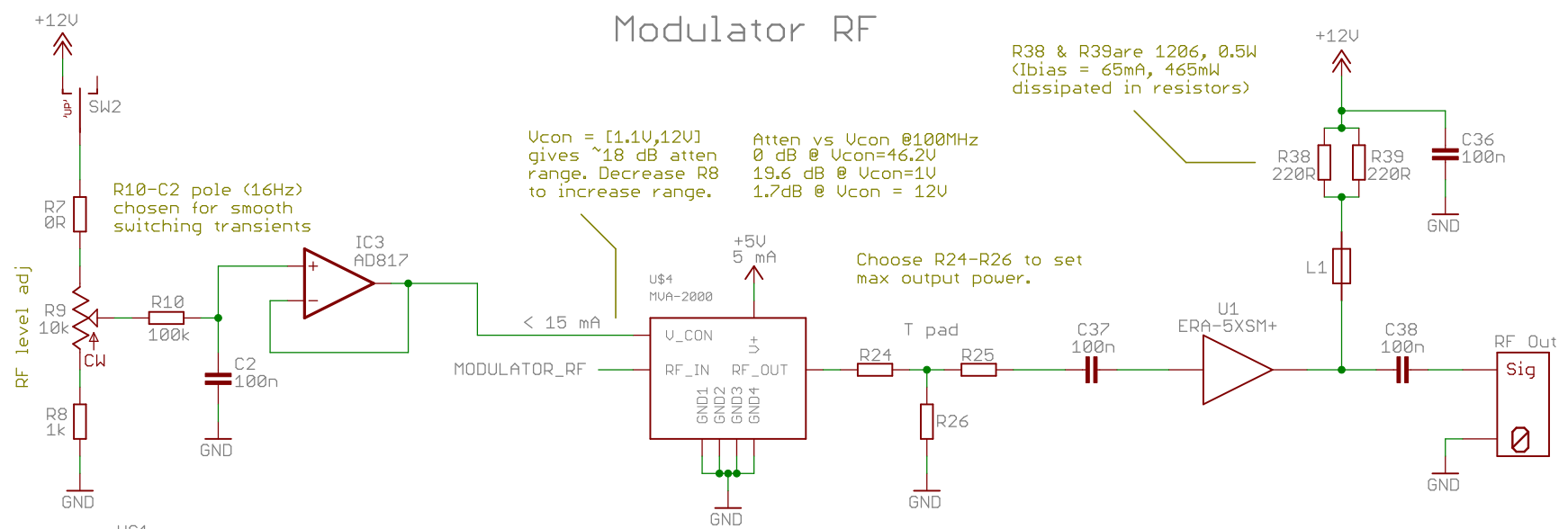


# RF Source



# Modulator RF



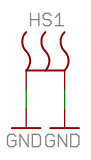
R10-C2 pole (16Hz) chosen for smooth switching transients

$U_{con} = [1.1V, 12V]$  gives ~18 dB atten range. Decrease R8 to increase range.  
 Atten vs  $U_{con}$  @100MHz  
 0 dB @  $U_{con}=46.2V$   
 19.6 dB @  $U_{con}=1V$   
 1.7dB @  $U_{con} = 12V$

R38 & R39 are 1206, 0.5W (Ibias = 65mA, 465mW dissipated in resistors)

Choose R24-R26 to set max output power.

RF level adj



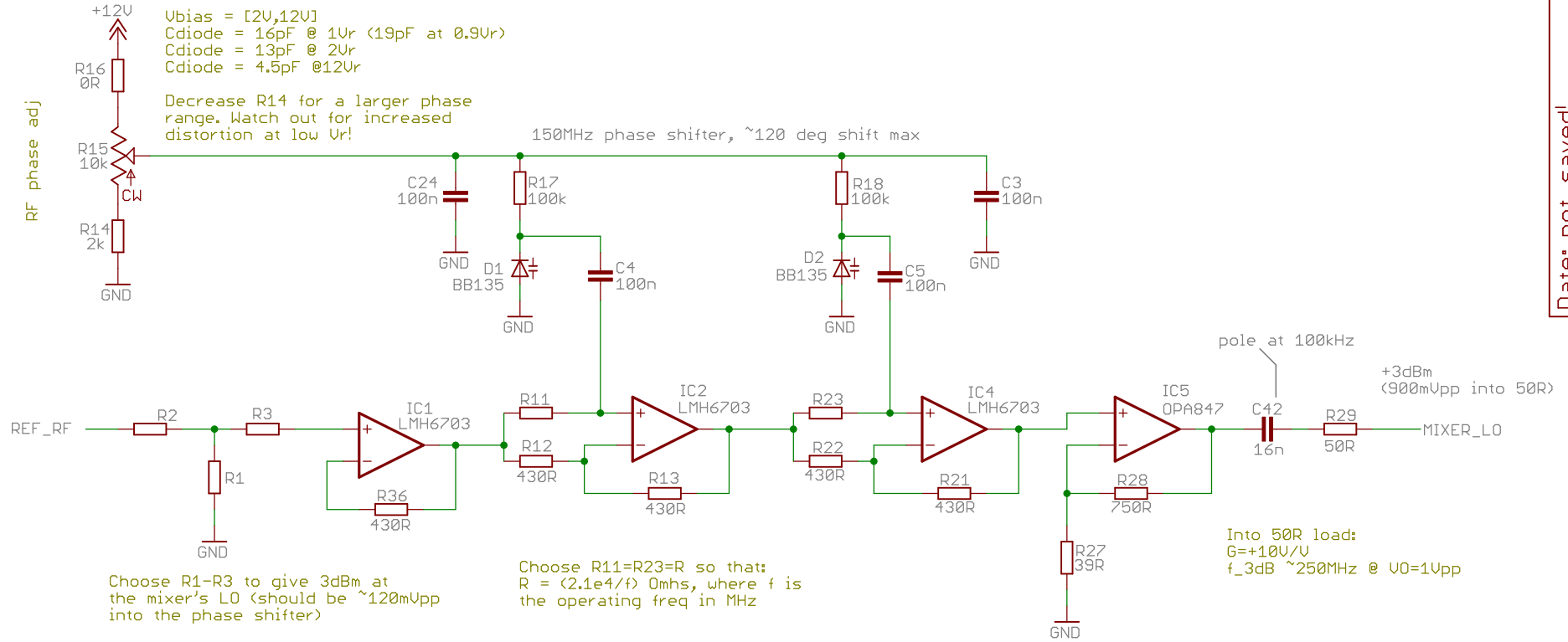
For an EOM:  
 Populate R38, R39, C36, L1 & U1  
 R24 =  
 R25 =  
 R26 =

For laser Bias-T modulation:  
 Connect SJ1, leave R38, R39, C36, L1 & U1 un-populated  
 RMS current modulation is ~8mA/sqrt(mW).  
 For IR diodes ? dBm should be fine

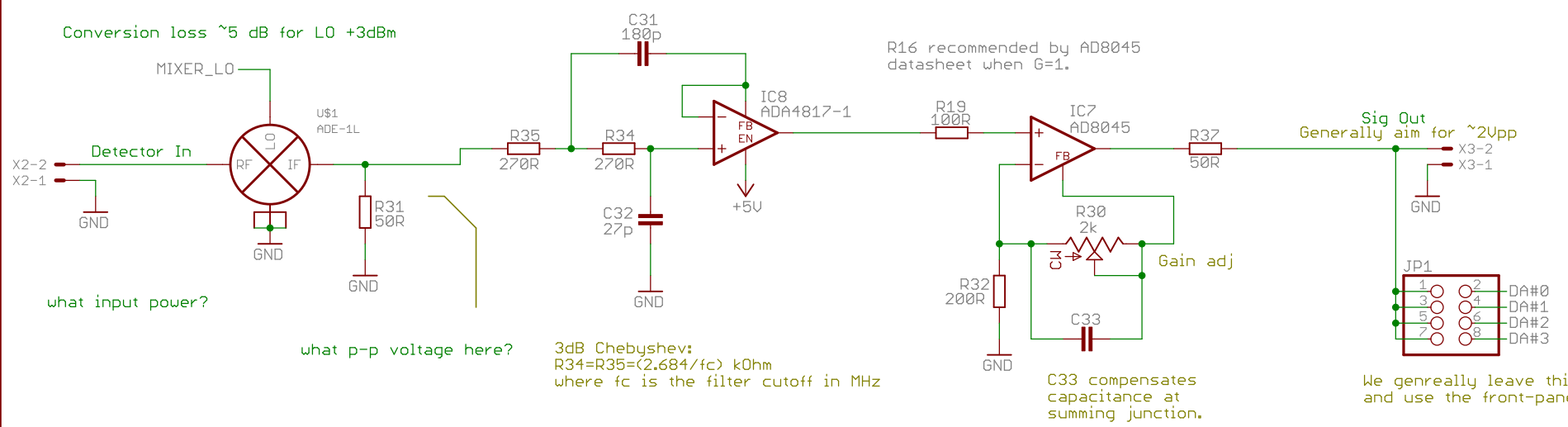
Suggested T pad:  
 R24 =  
 R25 =  
 R26 =

\*\* To avoid reverse biasing the laser diode, turn on \*\*  
 \*\* diode current before modulation! \*\*  
 \*\* 50ohm terminate cable going into laser. \*\*

# Ref RF Phase Shifter



## Demodulator & Filter



| fc = 5MHz (R=510R):   | fc = 7MHz (R=390R):     | fc = 10MHz (R=270R):  | fc = 15MHz (R=180R):  |
|-----------------------|-------------------------|-----------------------|-----------------------|
| 0.5MHz: +0.01dB, 5deg | 0.5MHz: +0.04dB, 3.7deg | 0.5MHz: +0.02dB       | 0.5MHz: +0.01dB, 2deg |
| 1MHz: +0.4dB, 11deg   | 1MHz: +0.2dB, 8deg      | 1MHz: +0.1dB, 5deg    | 1MHz: +0.04dB, 4deg   |
| 3MHz: +2.7dB, 49deg   | 3MHz: +1.5dB, 28deg     | 3MHz: +0.8dB, 18deg   | 3MHz: +0.35dB, 11deg  |
| 5MHz: 0dB, 114deg     | 5MHz: +3dB, 67deg       | 5MHz: +2dB, 35deg     | 5MHz: +1dB, 20deg     |
| 40MHz: -39dB, 175deg  | 40MHz: -33dB, 173deg    | 40MHz: -27dB, 170deg  | 40MHz: -20dB, 165deg  |
| 80MHz: -51dB, 178deg  | 80MHz: -45dB, 176deg    | 80MHz: -39dB, 175deg  | 80MHz: -32dB, 173deg  |
| 150MHz: -62dB, 179deg | 150MHz: -56dB, 178deg   | 150MHz: -50dB, 178deg | 150MHz: -43dB, 176deg |

- Standard Optica Analog Bus Lines
- DA#0 - SC ch. 1 feed forward output/DCC modulation input
  - DA#1 -
  - DA#2 - lock piezo path output/SC offset input
  - DA#3 -

