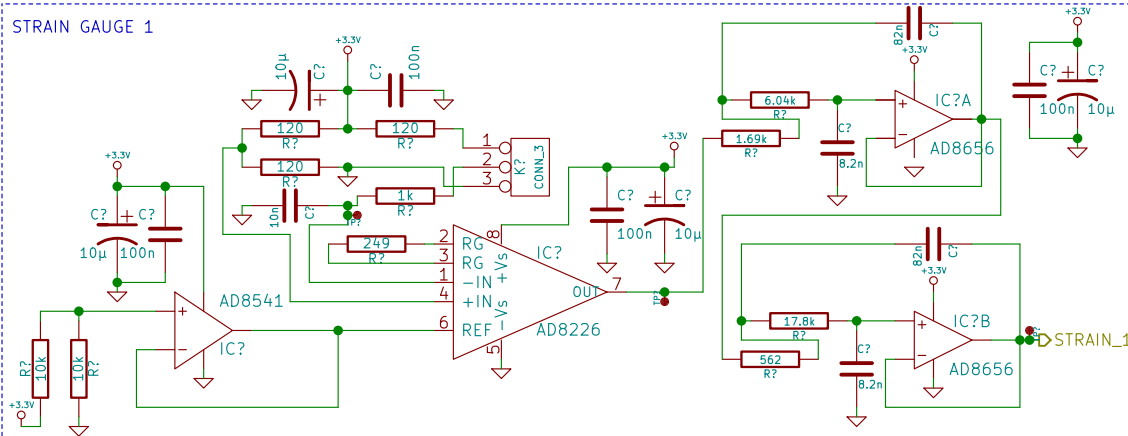




# STRAIN GAUGES

STRAIN GAUGE 1



## FILTERING

=====

Signals of interest: 0 to 1200Hz  
Nyquist: 10kHz  
Sample: 20kHz

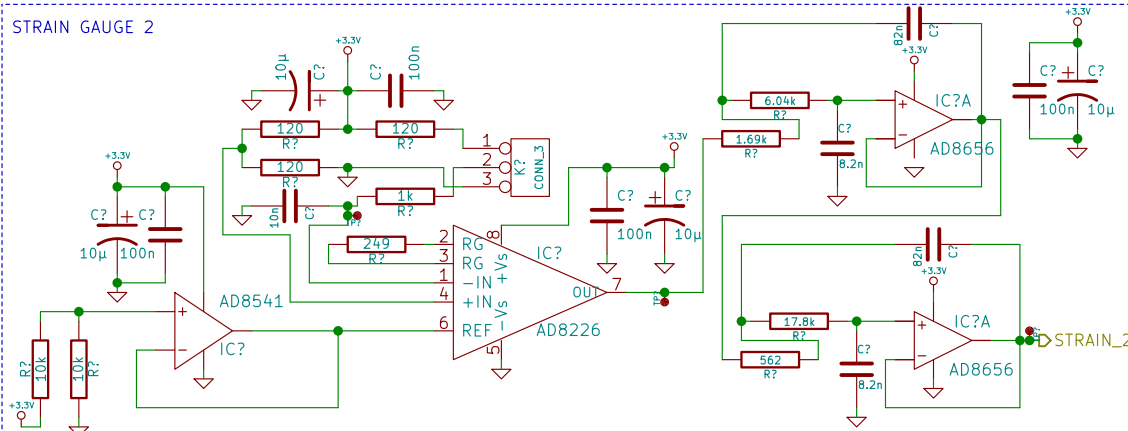
## FRONTEND FILTER

$F_c = 1/(2 \pi RC) = 16\text{kHz}$

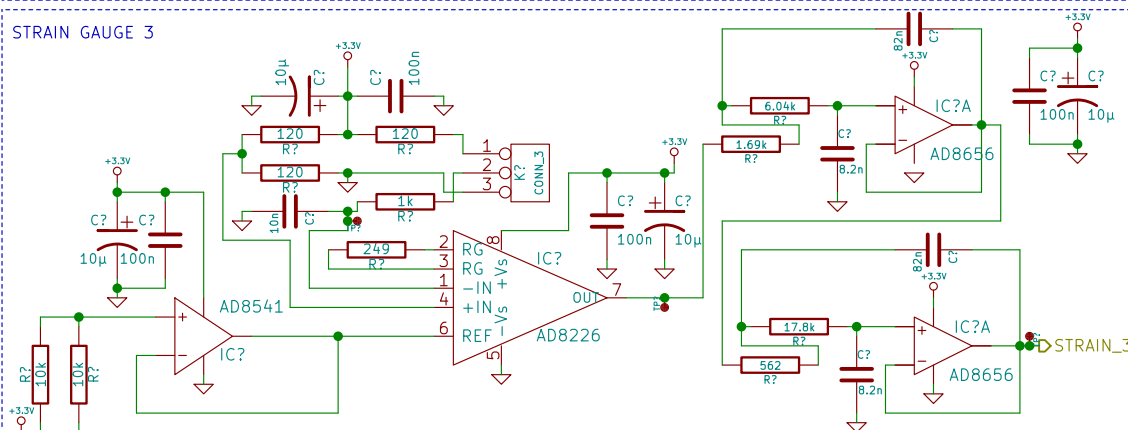
## ANTI\_ALIAS FILTER

-3dB: 2kHz  
Rejection at Nyquist: -55dB

STRAIN GAUGE 2



STRAIN GAUGE 3



Drawn By: Adam Greig  
**Cambridge University Spaceflight**

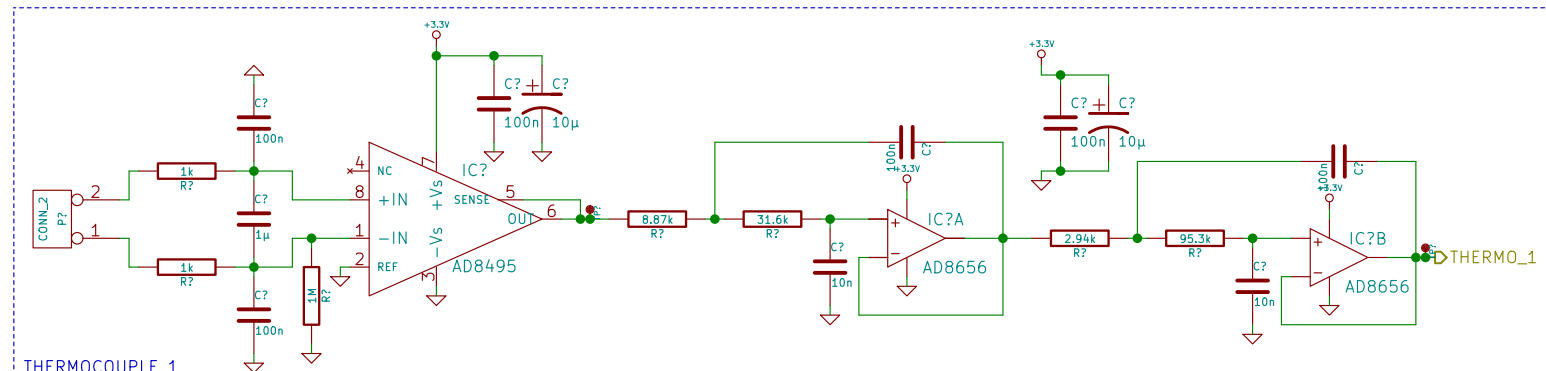
Sheet: /StrainGauges/  
File: straingauges.sch

**Title: Martlet 2 Flight Computer**

Size: A4 Date: 05 Jul 2014  
KiCad E.D.A. eeschema (2014-jan-25)-product

**Rev: 1**  
Id: 2/6

## THERMOCOUPLES



### FILTERING

=====

Signals of interest: 0 to 100Hz  
Nyquist: 1kHz  
Sample: 2kHz

### FRONTEND FILTER

-----

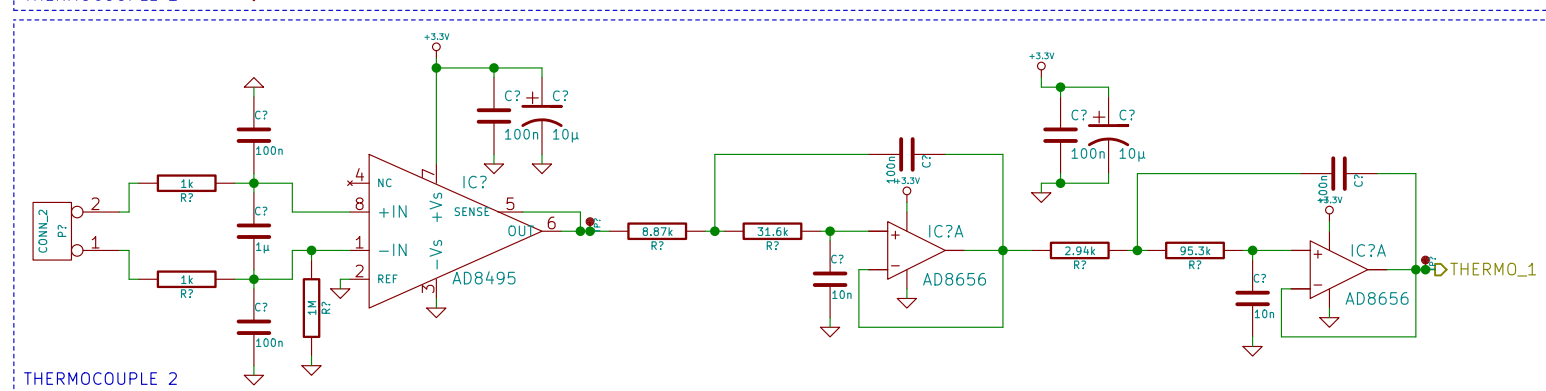
Freq. Diff:  $1/(2 \pi R (2C_c + C_d)) = 132\text{Hz}$   
Freq. CM:  $1/(2 \pi R C_c) = 1591\text{Hz}$

### ANTI\_ALIAS FILTER

-----

-3dB: 300Hz  
Rejection at Nyquist: -40dB

THERMOCOUPLE 1



THERMOCOUPLE 2

Drawn By: Adam Greig  
**Cambridge University Spaceflight**

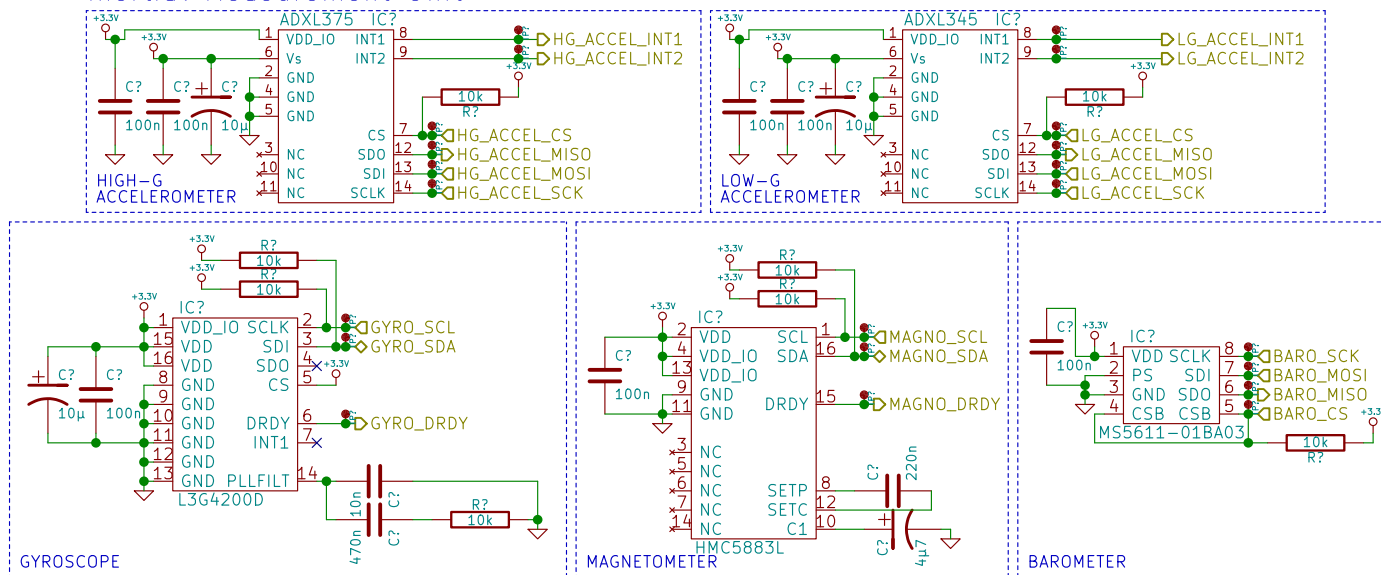
Sheet: /Thermocouples/  
File: thermocouples.sch

**Title: Martlet 2 Flight Computer**

Size: A4 Date: 05 Jul 2014  
KiCad E.D.A. eeschema (2014-jan-25)-product

**Rev: 1**  
Id: 3/6

## Inertial Measurement Unit



Drawn By: Adam Greig  
Cambridge University Spaceflight

Sheet: /IMU/  
File: imu.sch

**Title: Martlet 2 Flight Computer**

Size: A4 Date: 05 Jul 2014  
KiCad E.D.A. eeschema (2014-jan-25)-product

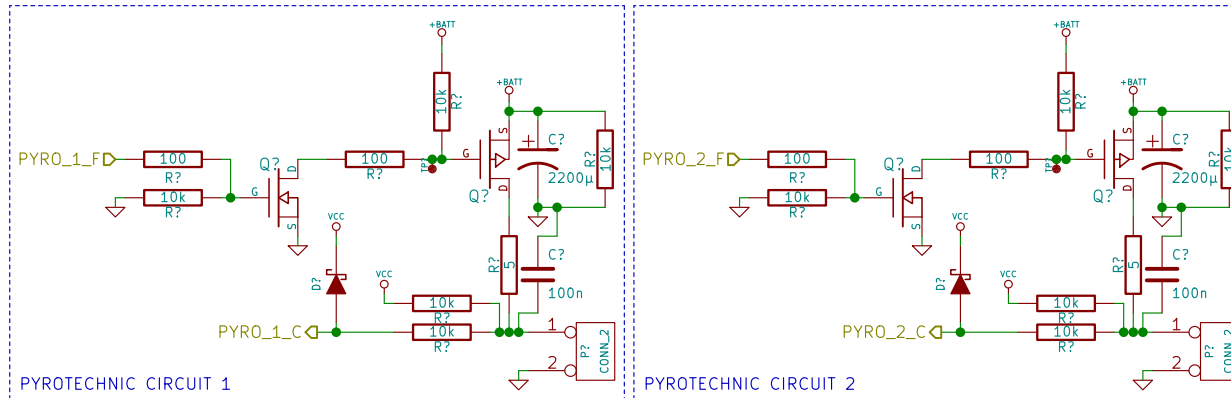
Rev: 1  
Id: 4/6

Sheet: /10/  
File: io.sch

**Title: Martlet 2 Flight Computer**

Size: A4	Date: 05 Jul 2014	Rev: 1
KiCad E.D.A. eeschema (2014-jan-25)-product		Id: 5/6

## PYROTECHNIC CHANNELS



Drawn By: Adam Greig  
**Cambridge University Spaceflight**

Sheet: /Pyros/  
File: pyros.sch

**Title: Martlet 2 Flight Computer**

Size: A4	Date: 05 Jul 2014
KiCad E.D.A. eeschema (2014-jan-25)-product	

Rev: 1  
Id: 6/6