

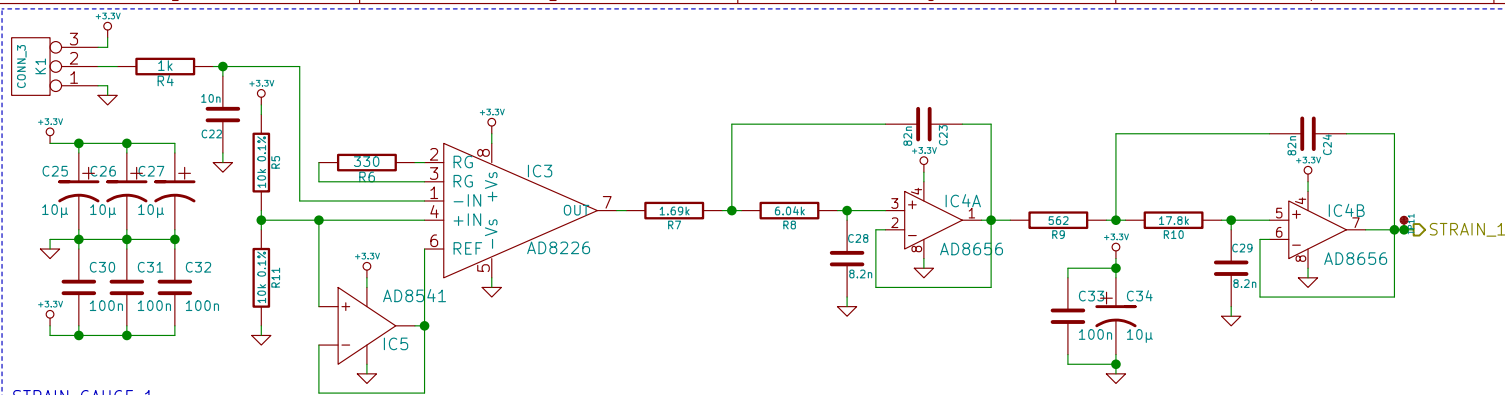
Drawn By: Adam Greig
Cambridge University Spaceflight

Sheet: /
File: m2fc.sch

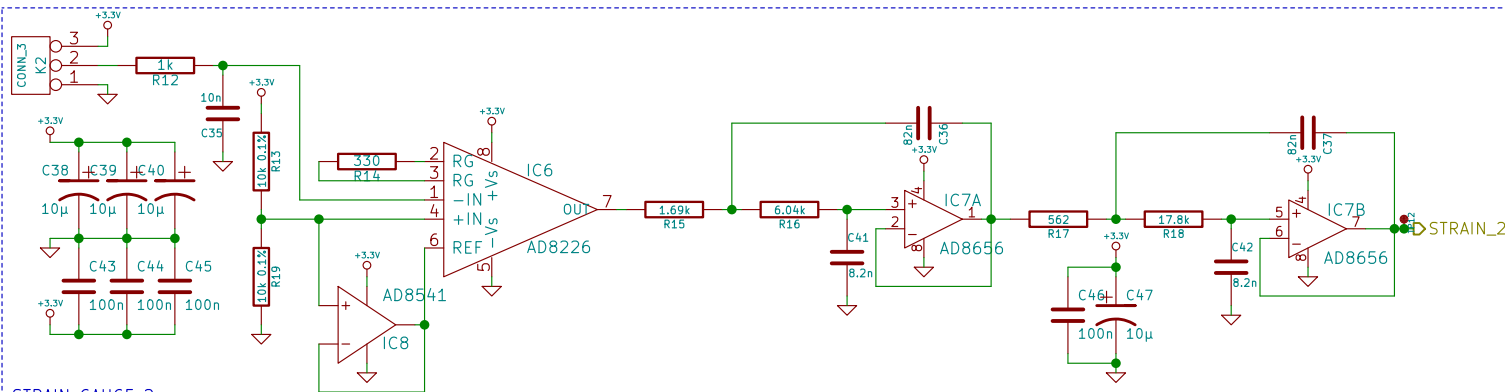
Title: Martlet 2 Flight Computer

Size: A4 Date: 05 Jul 2014
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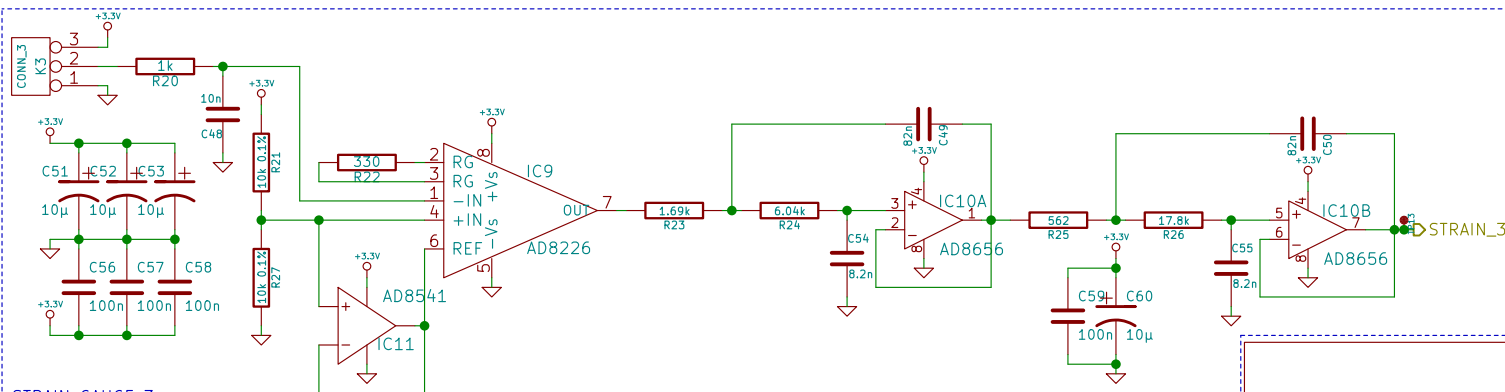
Rev: 1
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STRAIN GAUGE 1



STRAIN GAUGE 2



STRAIN GAUGE 3

STRAIN GAUGES

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

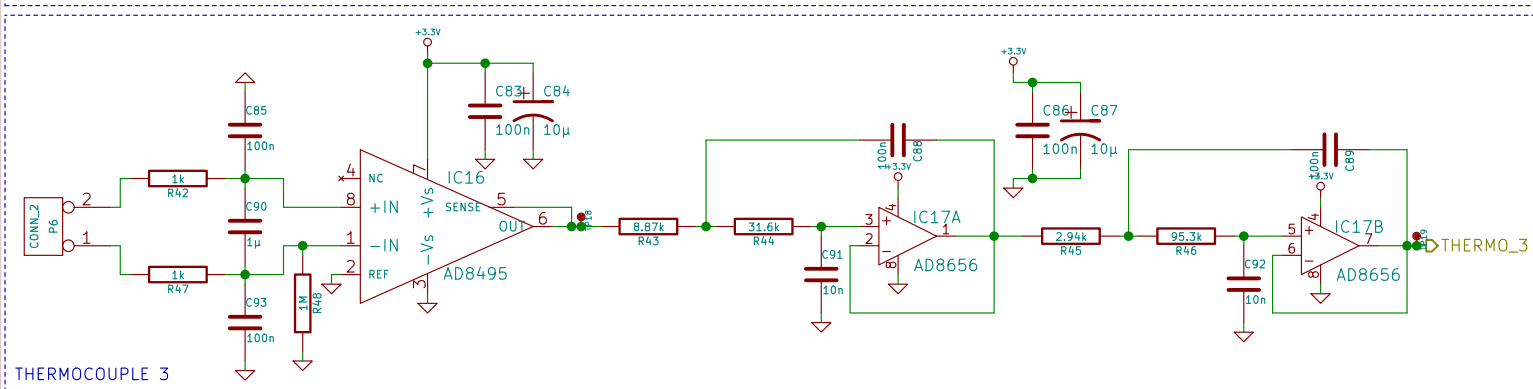
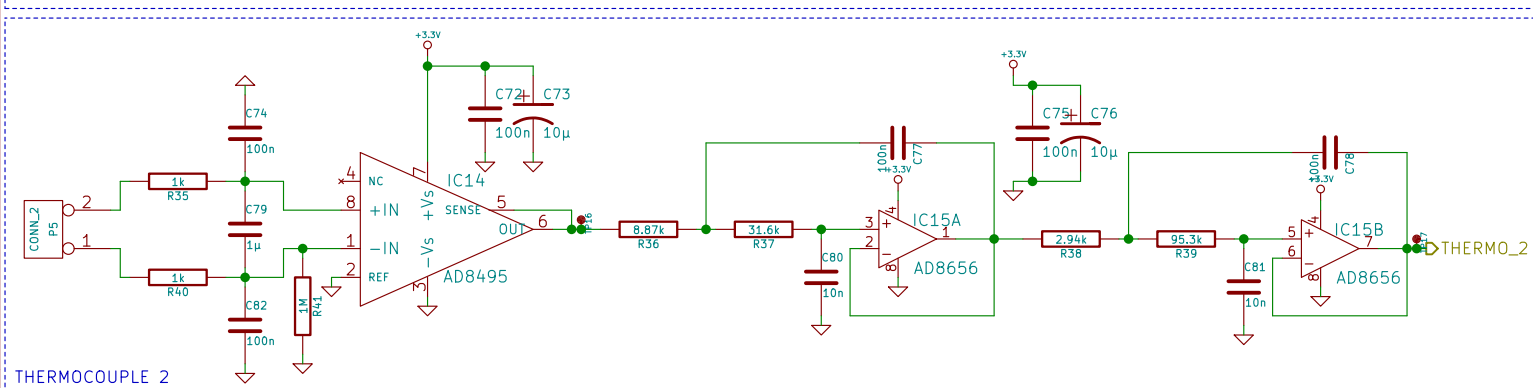
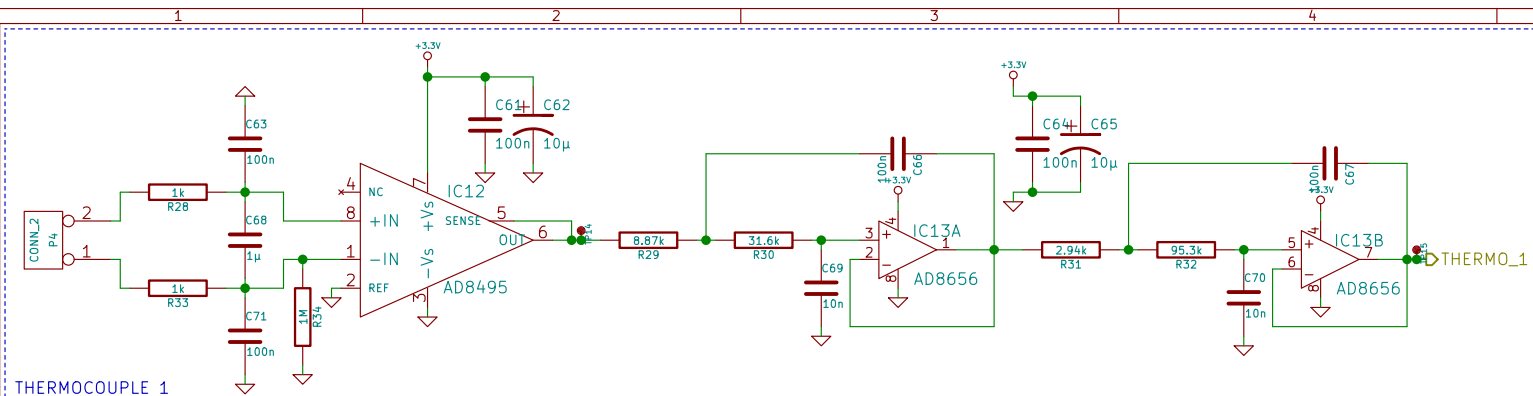
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Sheet: /StrainGauges/
 File: straingauges.sch

Title: Martlet 2 Flight Computer

Size: A4 Date: 05 Jul 2014
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 Id: 2/6



FILTERING

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

FRONTEND FILTER

$$\begin{aligned} \text{Freq, Diff: } & 1/(2 \pi R (2C_c + C_d)) = 132\text{Hz} \\ \text{Freq, CM: } & 1/(2 \pi R C_c) = 1591\text{Hz} \end{aligned}$$

ANTIALIAS FILTER

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

THERMOCOUPLES

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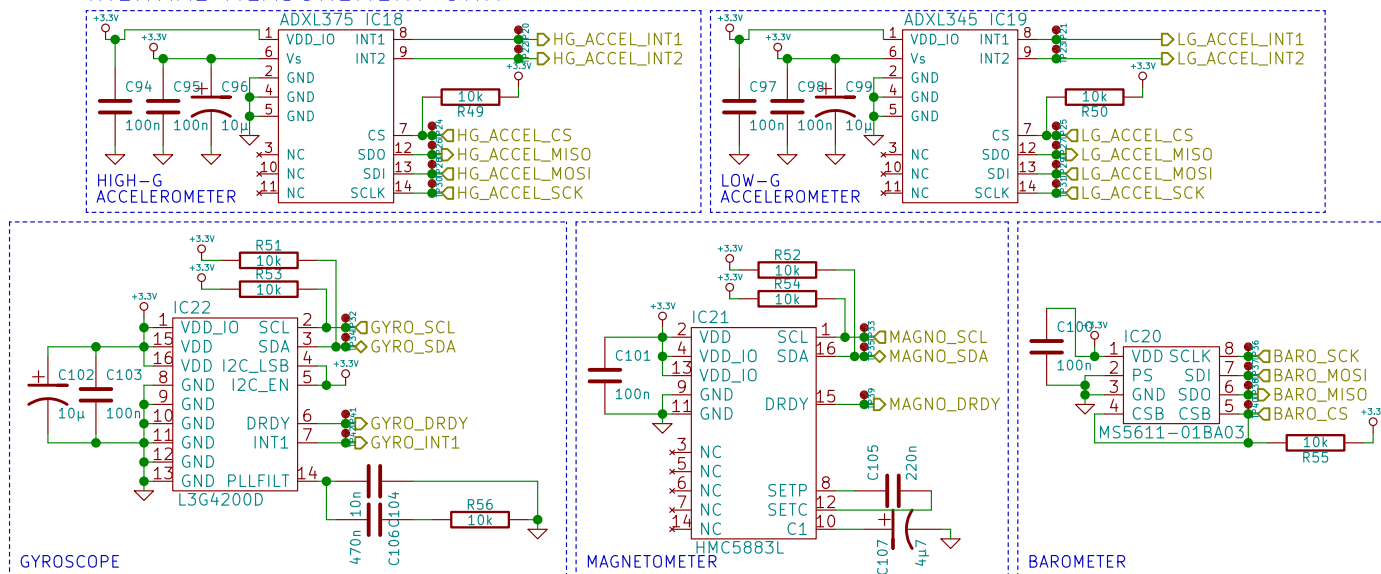
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File: thermocouples.sch

Title: Martlet 2 Flight Computer

Size: A4	Date: 05 Jul 2014
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INERTIAL MEASUREMENT UNIT



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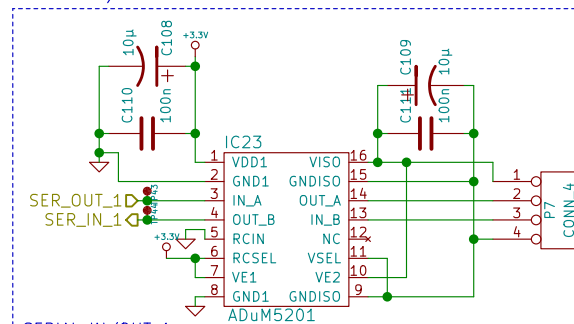
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Title: Martlet 2 Flight Computer

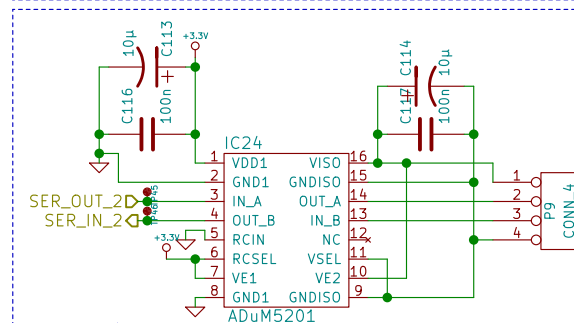
Size: A4 Date: 05 Jul 2014
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Rev: 1
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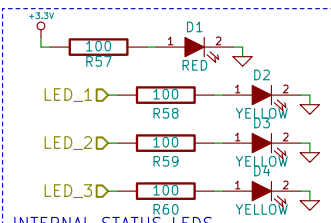
INPUT/OUTPUT



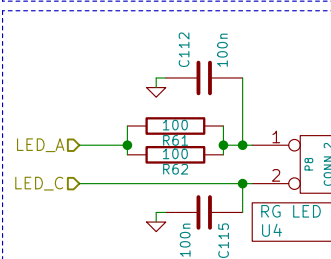
SERIAL IN/OUT 1



SERIAL IN/OUT 2



INTERNAL STATUS LEDs



EXTERNAL STATUS LED

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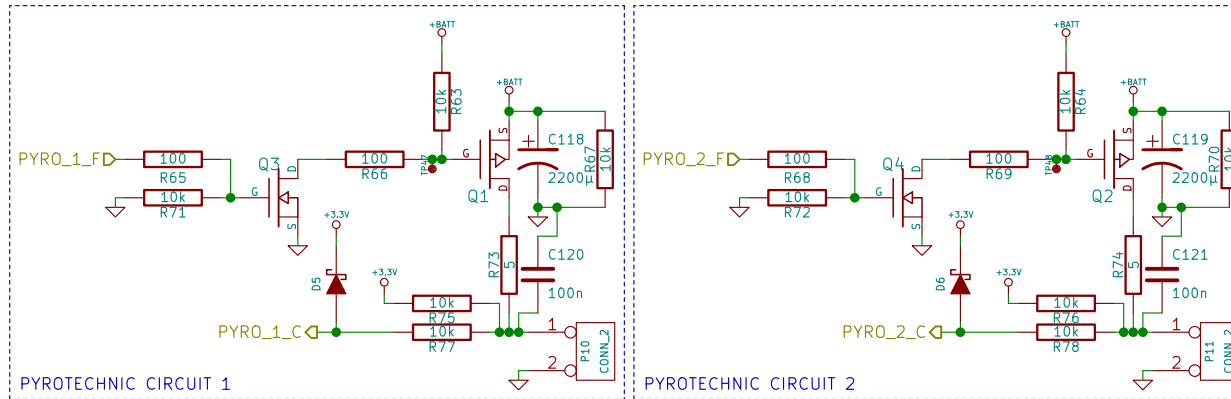
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File: io.sch

Title: Martlet 2 Flight Computer

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

Rev: 1
Id: 5/6

PYROTECHNIC CHANNELS



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Sheet: /Pyros/
File: pyros.sch

Title: Martlet 2 Flight Computer

Size: A4	Date: 05 Jul 2014
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Rev: 1
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