

Instrumentation Amplifier

Minkyun Noh

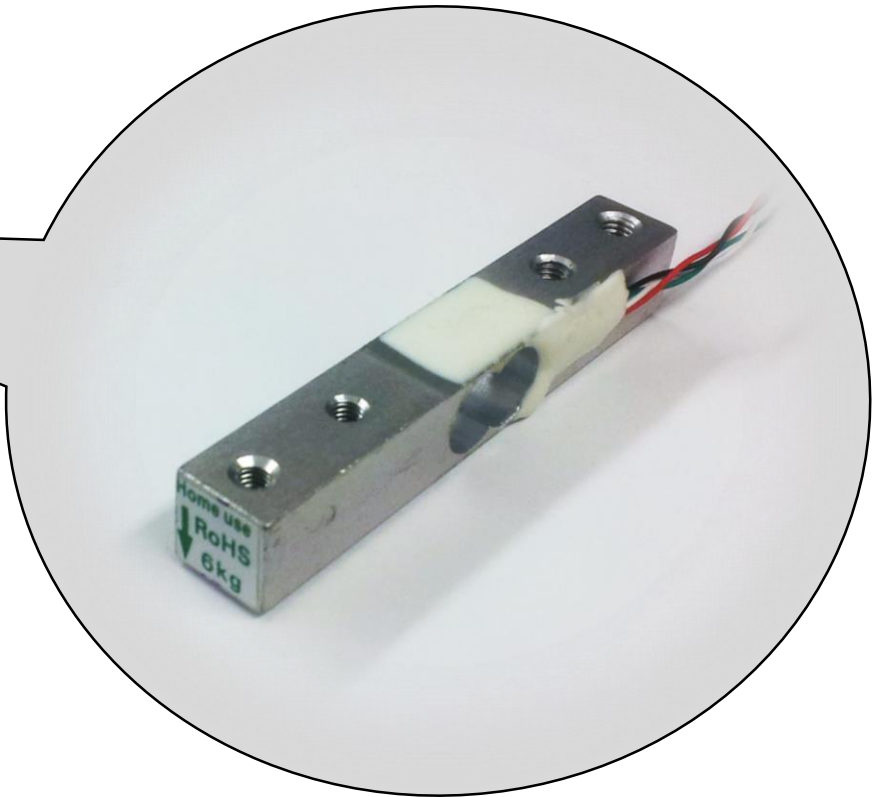
Assistant Professor
UBC Mechanical Engineering



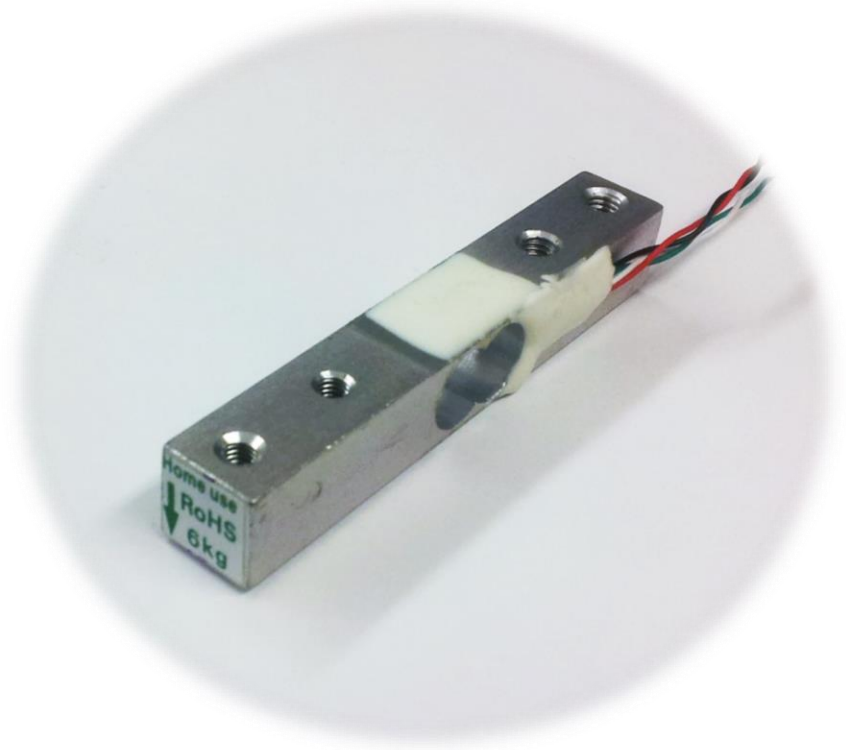
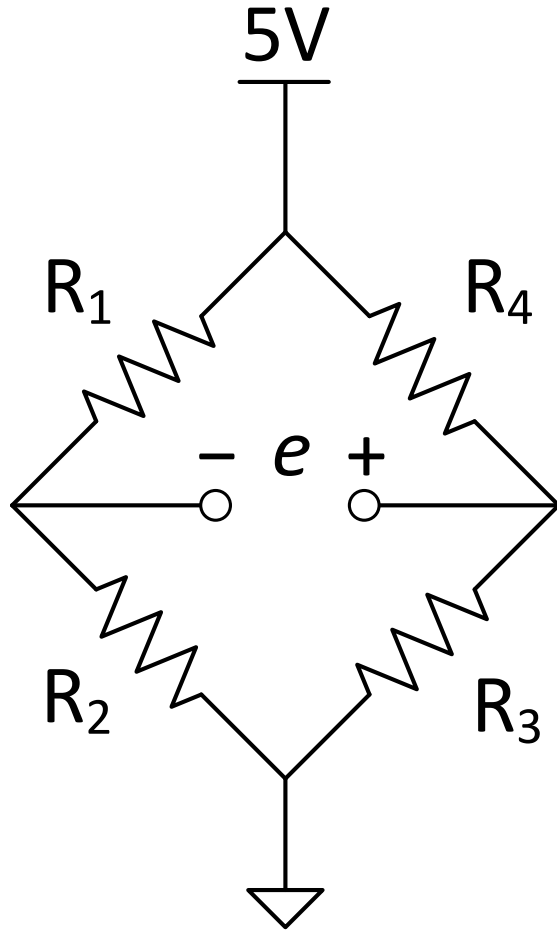
THE UNIVERSITY OF BRITISH COLUMBIA

Mechanical Engineering

Example: Electronic Kitchen Scale

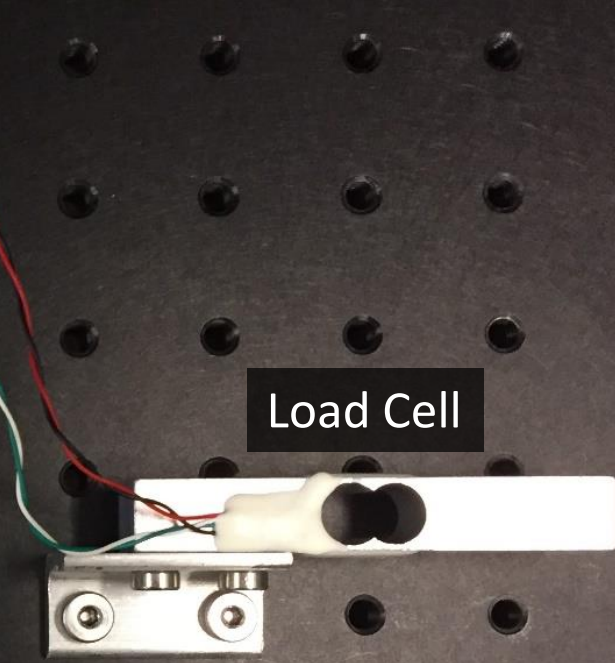
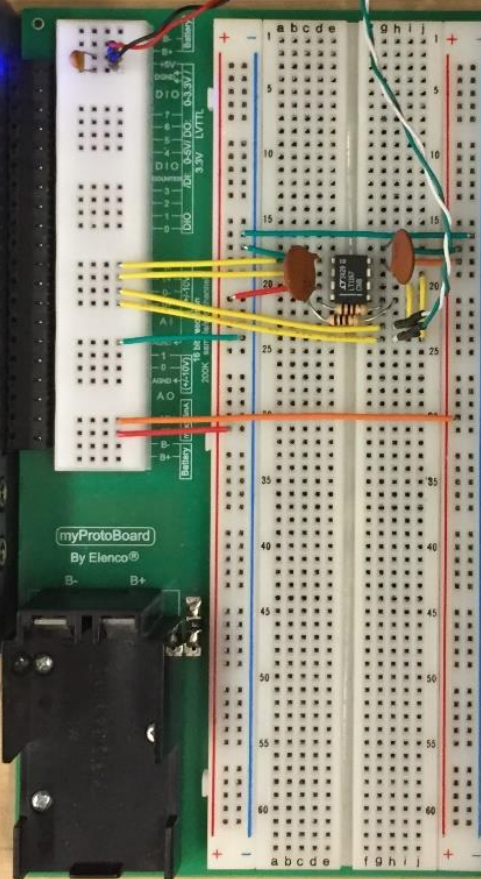


Strain Gauge Load Cell





Real-time Computer



Load Cell

POWER

STATUS



LED0

LED1

LED2

LED3

CH1

CH0

Instrumentation
Amplifier

+
e
-

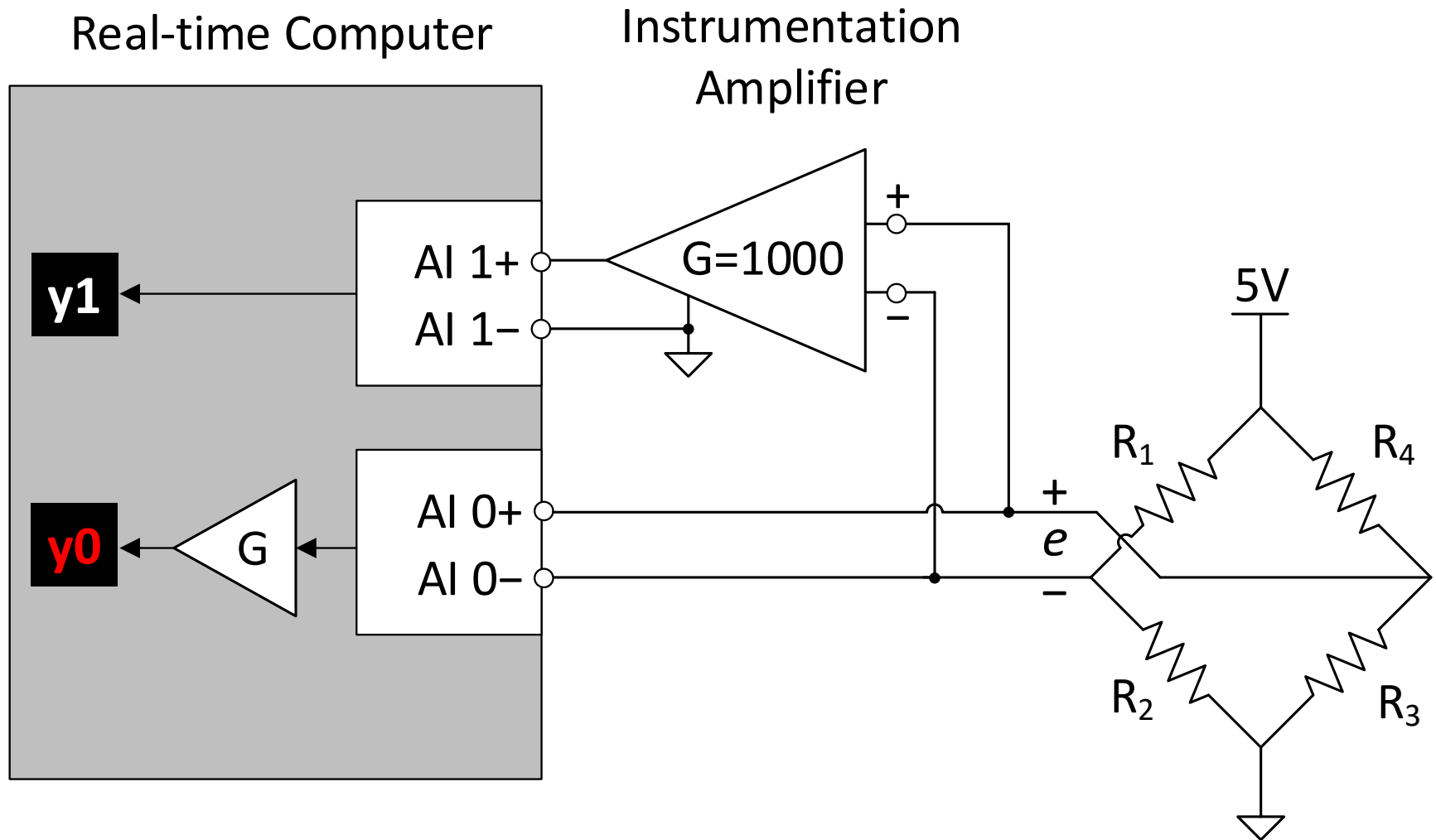
myProtoBoard

By Elenco®

B-

B+

Circuit Schematic



Monitor

Scope

Offset 1
0.07

Offset 2
-0.00

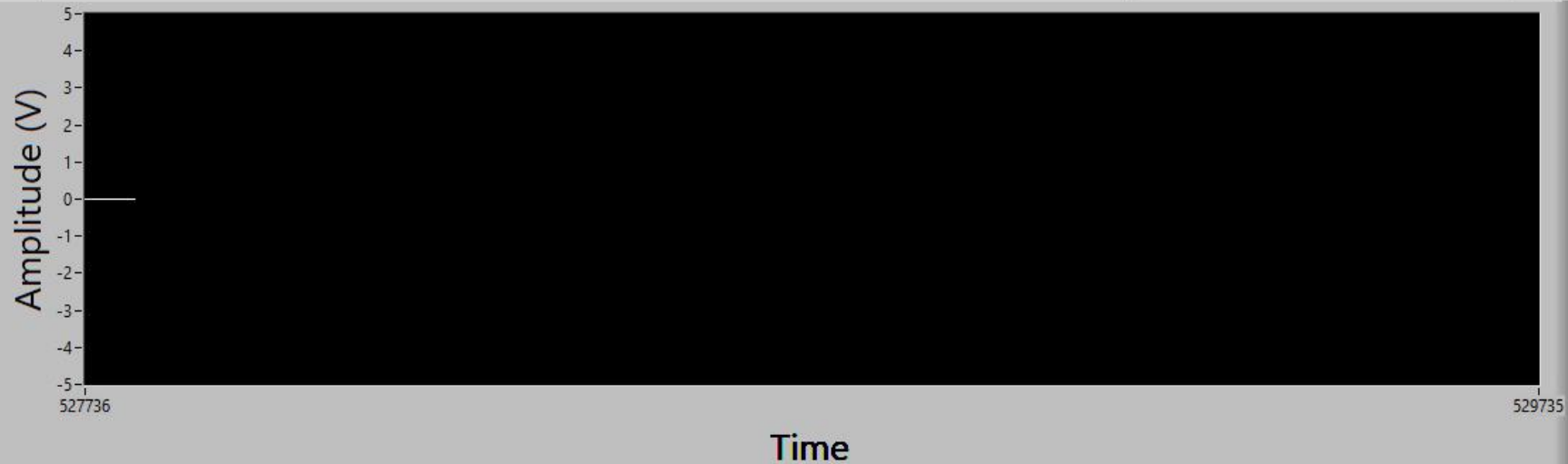
x
0

In-Amp (G= 1000)

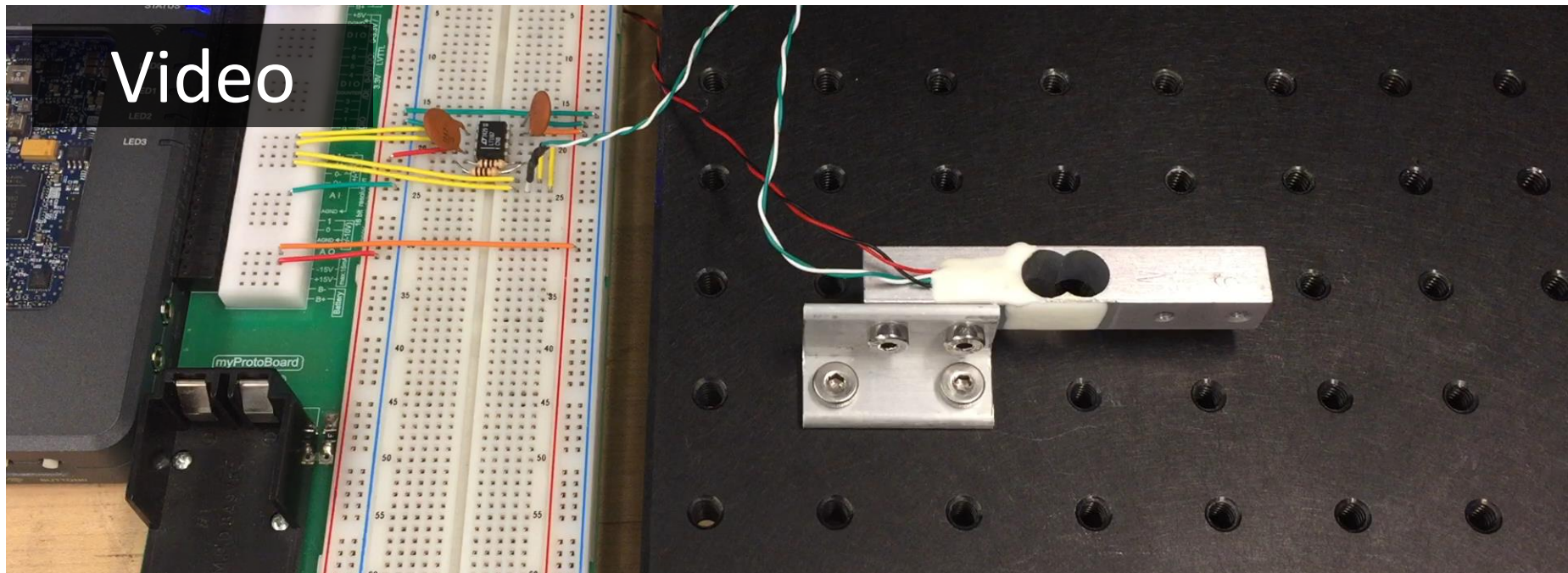
y1

No In-Amp (G = 2^x)

y0



Video



Monitor

Scope

Offset 1
0.07

Offset 2
-0.00

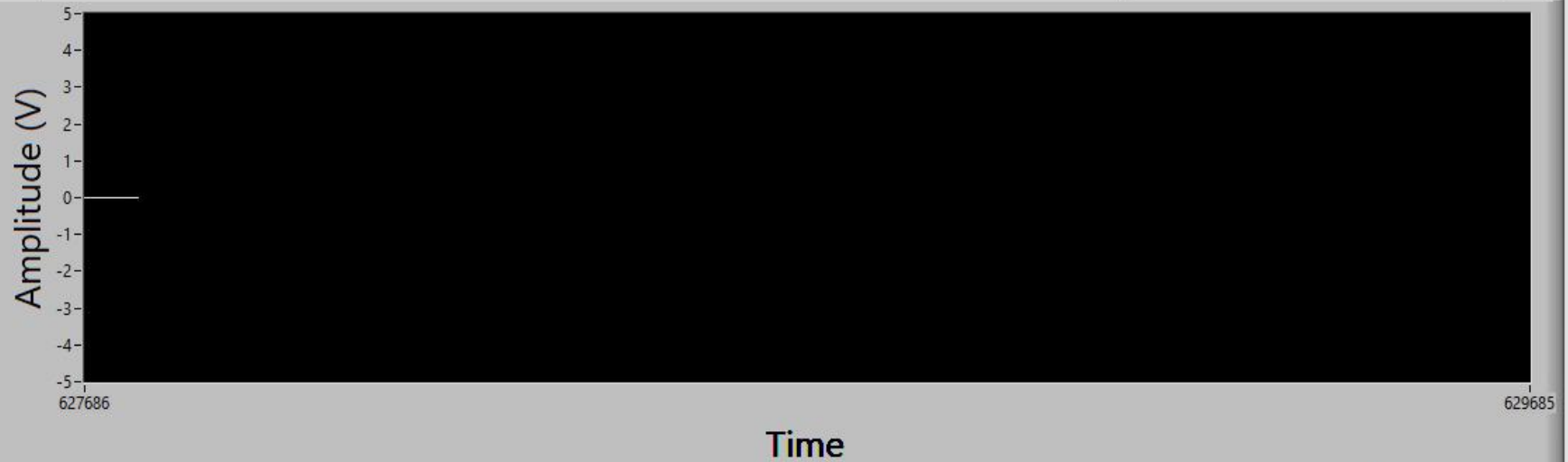
x
1

In-Amp (G= 1000)

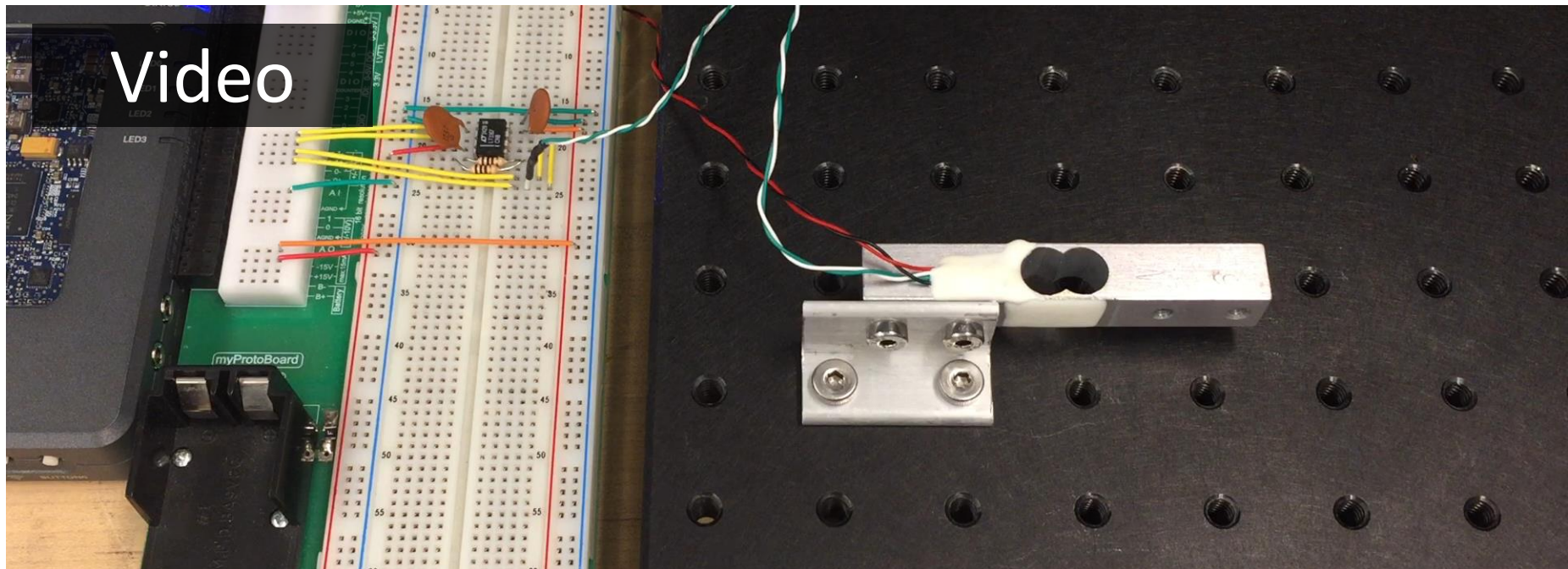
y1

No In-Amp (G = 2^x)

y0

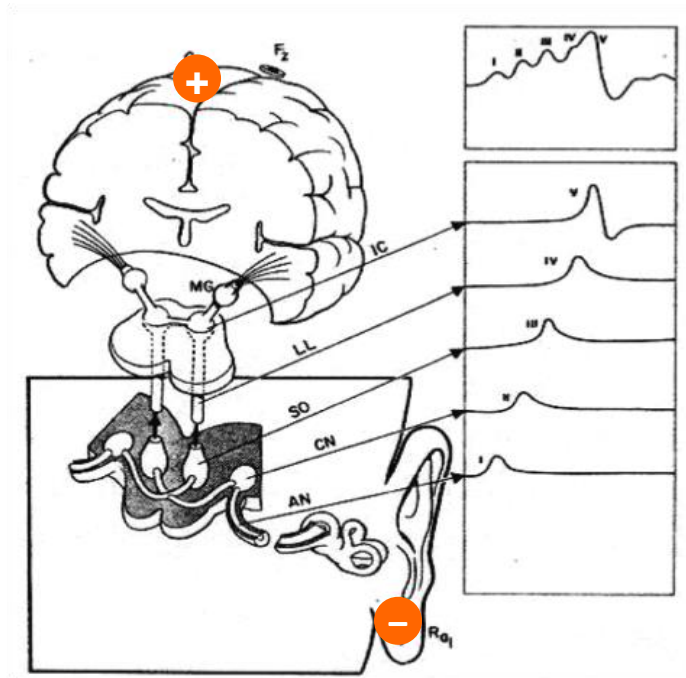


Video



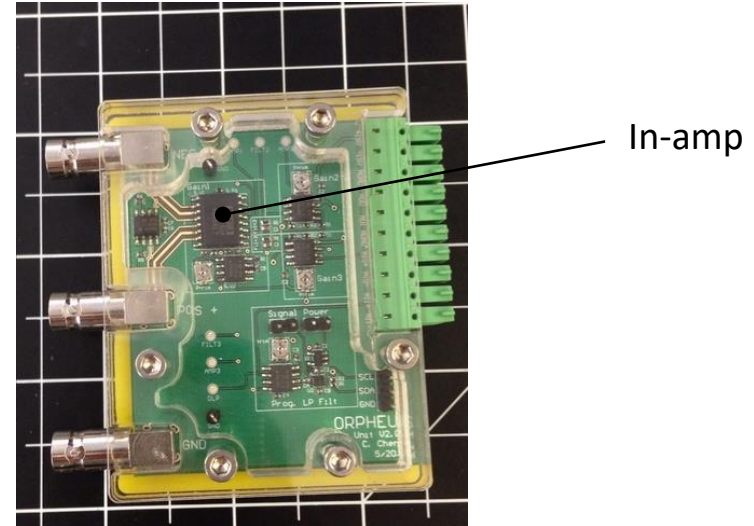
Example: Biopotential Amplifier

Auditory Evoked Potential



Past collaboration with MIT Bioinstrumentation Lab.

Biopotential Amplifier (v1)



Biopotential Amplifier (v2)

