# Why do we need HARDWARE filtering, can we not do this digitally?

Aliasing - Aliasing happens when you sample a signal **too slowly**, and high-frequency components of the signal **"disguise" themselves as lower frequencies**. The ADC **misinterprets** those high frequencies as something else.

This will be useful for reducing effects of EMI from buck-converter as well.

We are sampling at 1KHz, this means we need to filter frequencies above 500 Hz due to Nyquist theorem. to avoid aliasing.

Choose

This gives us R =5.3K, C = 100nF

I round R

So overall, anything around 300Hz+ frequency will get filtered out