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* Clarify system architecture
  + 1 chip per electrode with 16 contacts
    - less wires
  + 1 chip for an array of 16 electrodes
    - UEA and other groups already does this
      * 192 channel: 10 mW total power consumption
      * 10 micro watts per channel
      * Not recording simultaneously; sampling one by one
  + Two additional useful components
    - out of range indicator maybe for receiver
    - End of battery indicator
    - Method for determining which channels to read from
  + specs: 5 mm diameter (up to 8 mm) and 10 mm tall
    - electrode specs: .8 mm wide x 16 mm long
  + Look up hearing aid battery life to see if you can use it. Although unlikely.
  + Multiplexing: possibly sample and transmit packets from one electrode at a time and sample at 16 \* 1 kHz to have 1 kHz sampling rate for each point.
    - we don’t need that type of resolution
  + electrodes measure potential difference, so you need a reference. For each electrode, you can pick one contact point as reference for each electrode.
  + Electrode DC rejecting:
    - reject .1 Hz and allow kHz
      * Size of cap must be large though, which can cause attenuation
* Blackrock: makes a wireless transmission device already thats on market
  + chips are larger and no battery source
* Information in EEG
  + Single Units (individual neurons) are not useful, we want clusters or functional units
  + Recording from macro electrodes (records 150,000 - 250,000 neurons)
    - Recording local field potentials
    - record frequencies as high as 500 Hz - 1 kHz, so you should sample at 1 kHz = 2 \* nyquist frequency
* Clear quantitative power needs
  + survey battery capabilities
  + quantification of battery power sampling each channel and transmitting each channel.
    - Dominated by how much power is required for chip
* Local field potential: Net sum of potentials going in and out of an local area