
Shorks!

Electronic Shark Tag

The electronic shark tag would have two segments: Receiving and Transmitting.

A Piezo circuit, controlled by a MOSFET via PWM signals from the MCU would be used for producing low frequency acoustic waves with the shark's location (Latitude & Longitude coordinates), assigned ID and time.

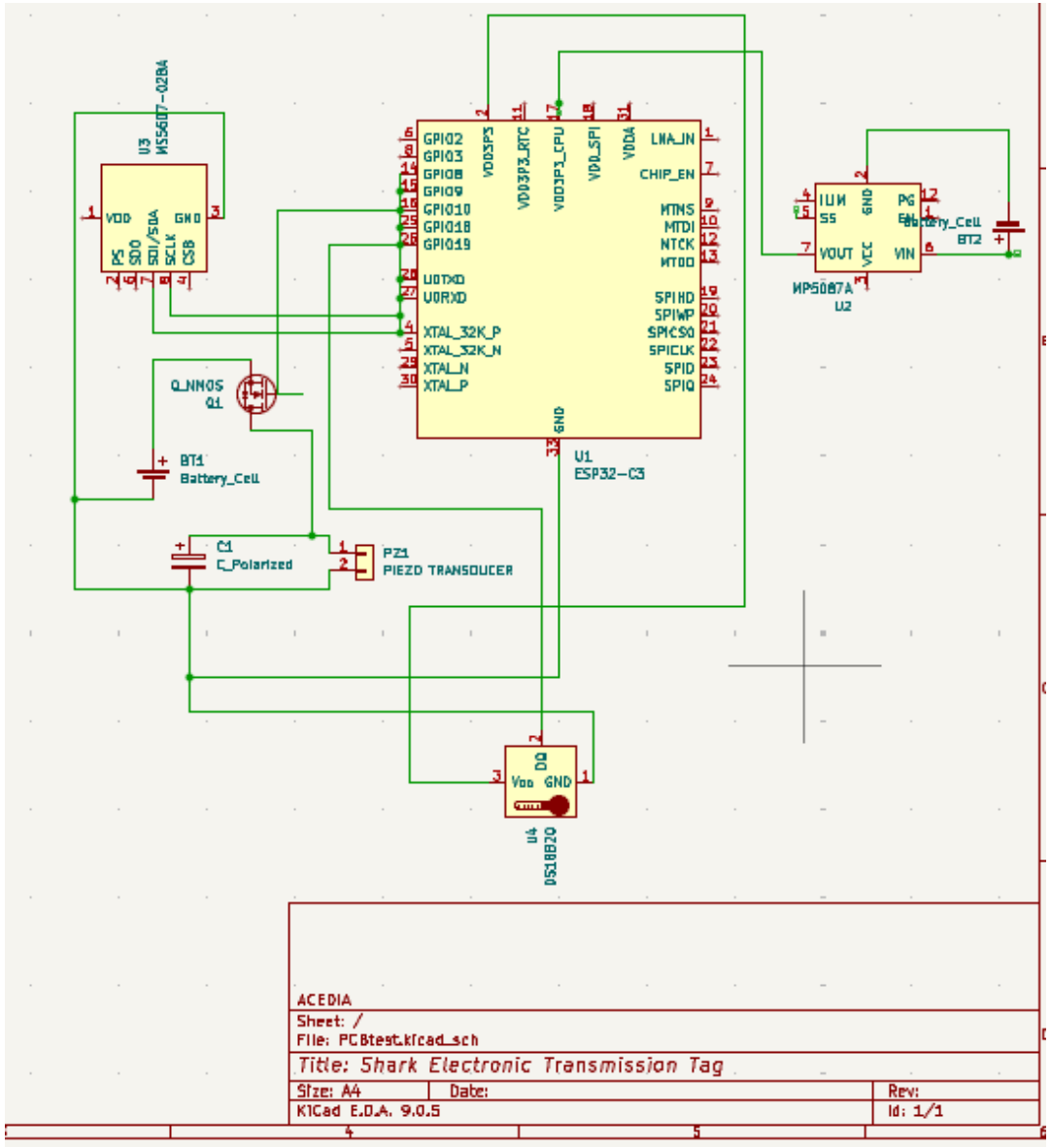
The receiving end would be awaiting signals and would decode them.

Why have a receiver in the shark tag?

Currently, the method most used is that it awaits the shark to be closest to the surface for it to transmit data to a satellite. However, this wouldn’t allow for real-time data tracking.

To counteract this, we've made a networking system, in which sharks can transmit data to the shark closest and higher in altitude to them.

This way data be transmitted at a rate closer to real-time, with energy efficiency in mind.



Portable Circuit Board (PCB) Schematic

PoC circuit board for the low frequency acoustic wave transmitter.

Which consists of:

1) ESP32-C3 (MCU)
2) Barometric sensor
3) Transducer
4) Temperature sensor
5) MOSFET (For controlling transmitted wave amplitude)

Oceanographic features to used:

Studies (see citations.txt) show that features such as ocean eddies (and their polarity) and salinity.