

A large, realistic-looking shark is swimming towards the viewer in deep blue water. The shark's mouth is slightly open, revealing sharp teeth. The water surface is visible in the upper left, with light reflecting off it. The word "Shorks!" is written in white, sans-serif font across the center of the shark's body.

Shorks!

# Electronic Shark Tag

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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.

A large orange circle is positioned on the left side of the slide, partially cut off by the edge.

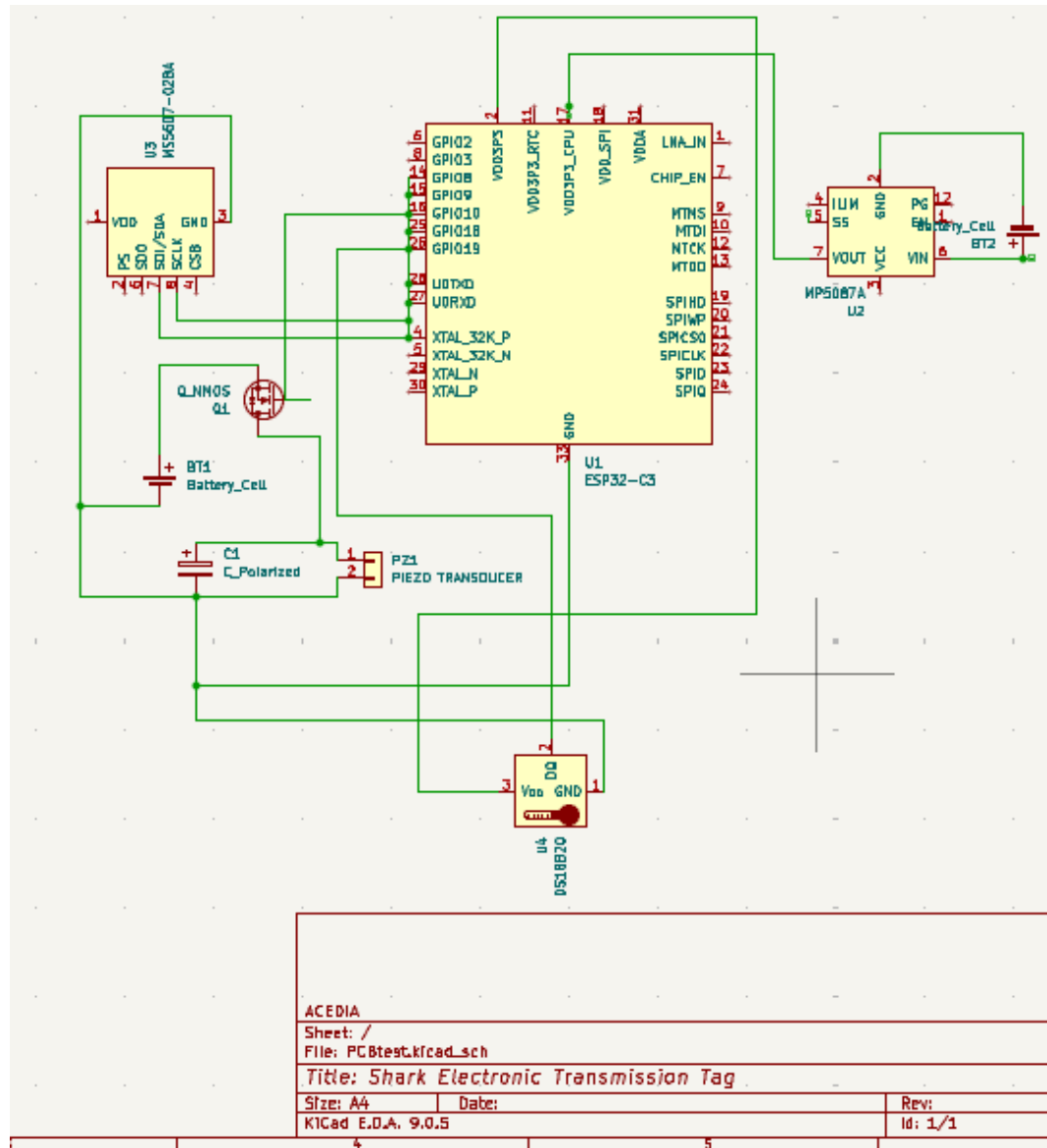
## **Why have a receiver in the shark tag?**

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.

Four blue curved lines of varying lengths are arranged in a curved pattern in the bottom right corner of the slide.



# 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.

