

Surveillance Eyewear Glasses

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Surveillance

Systems that allow constant monitoring of specified areas for security or personal monitoring of pets or children but are limited to the places they are built at.



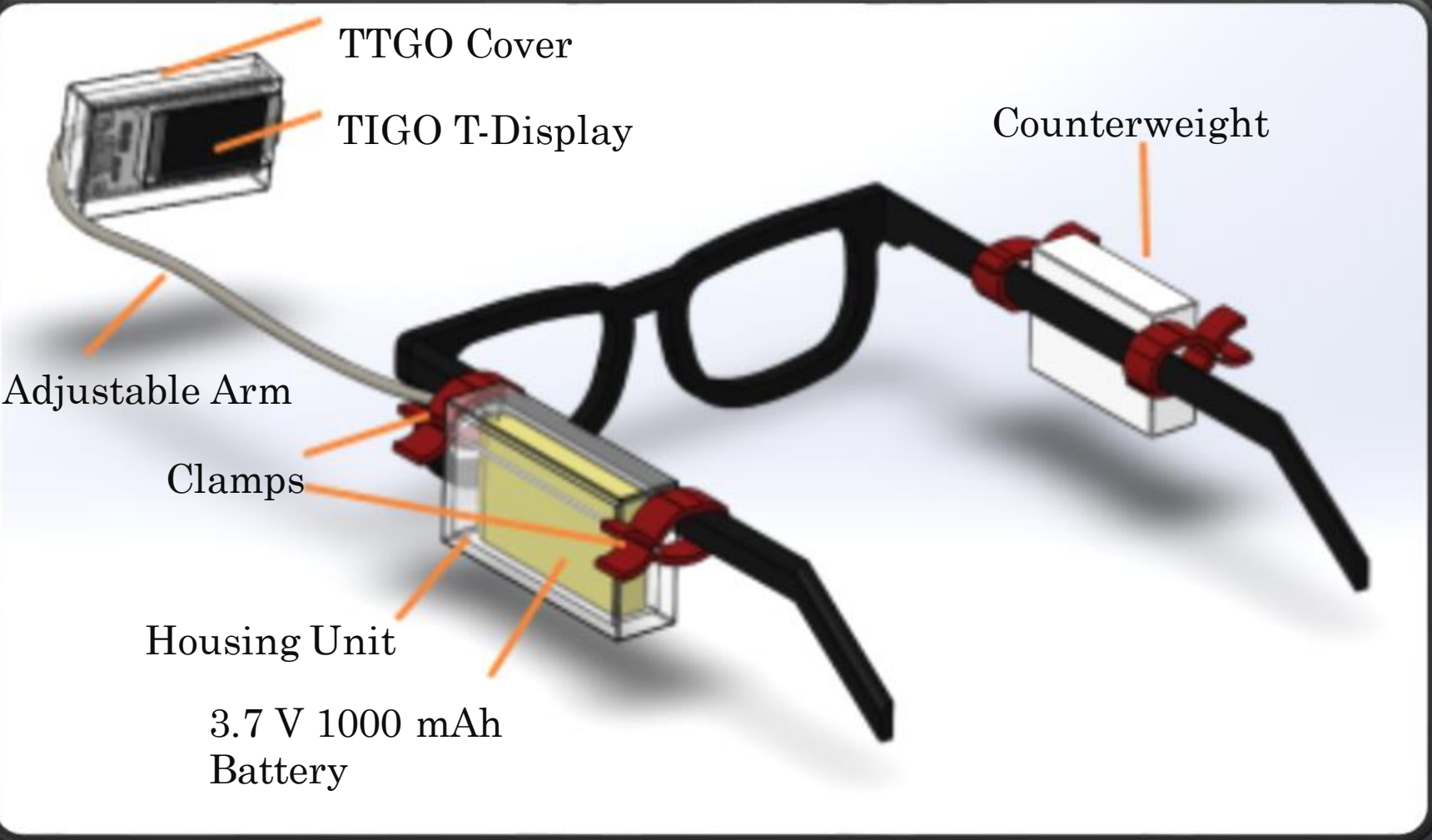
Challenge: Mobile, Lightweight, Cheap

Smart surveillance needs to be mobile as to not restrict the user's mobility and comfort. Cheap and lightweight materials allow for better utilization and applications of the device.



Solution: Micro Controllers

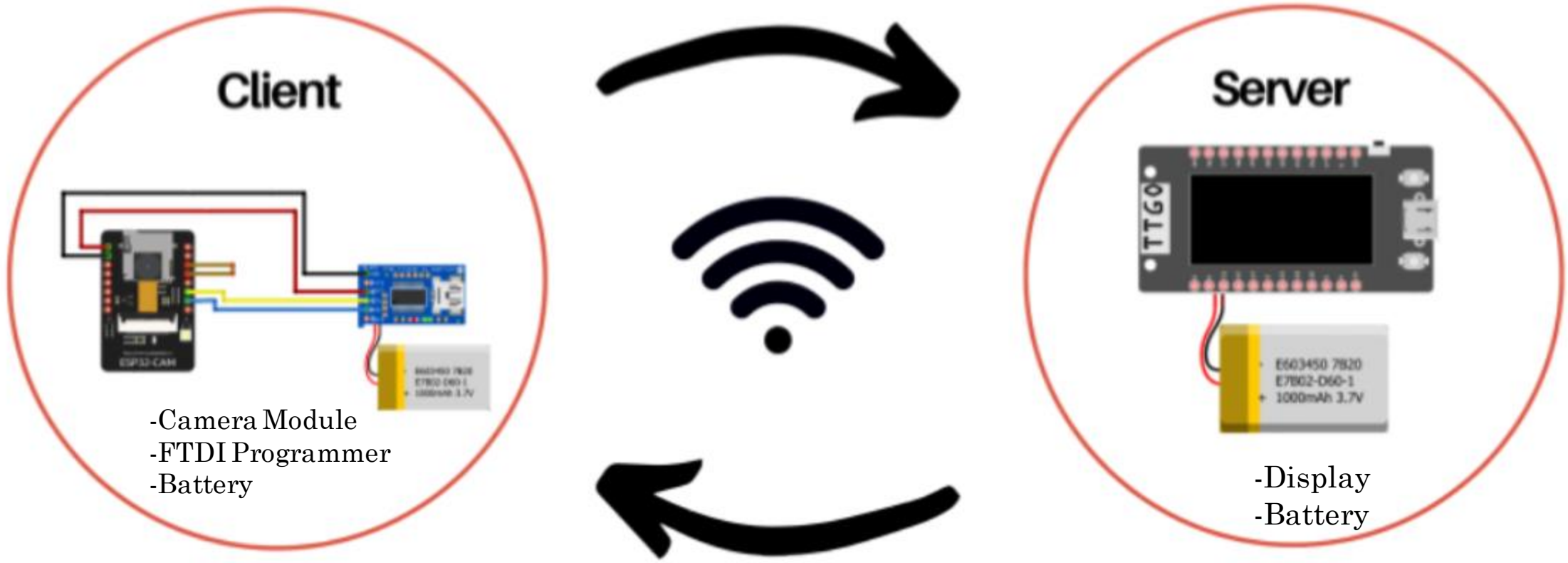
Micro controllers are inexpensive and lightweight, allowing the implementation of video streaming to a pair of glasses for mobile surveillance.



Eyewear

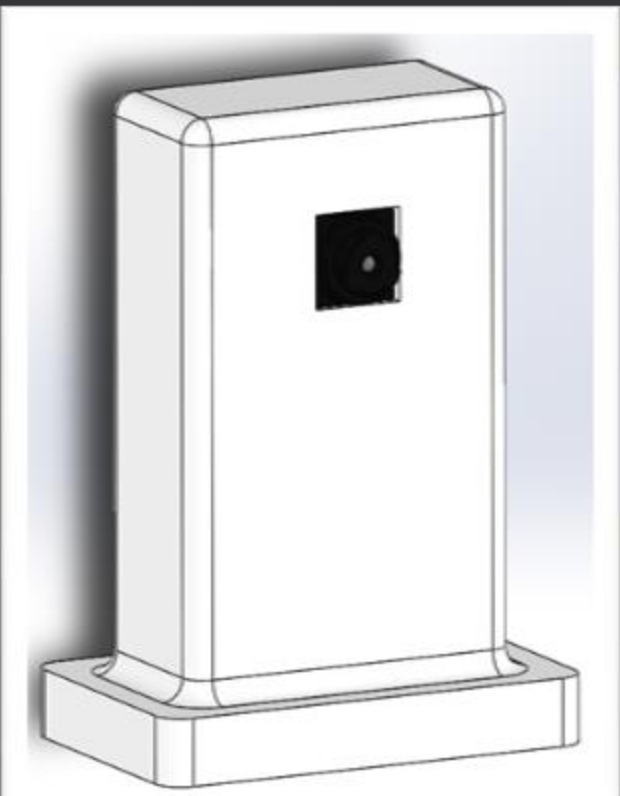
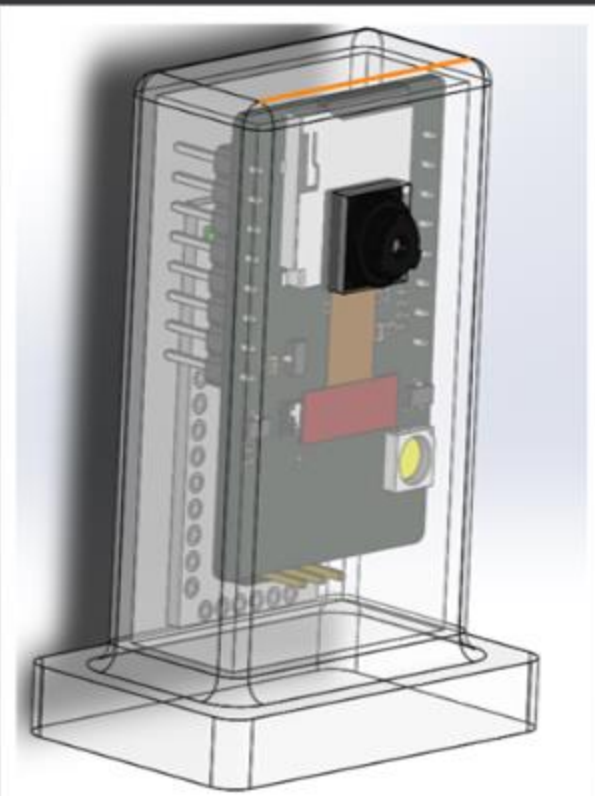
The eyewear is comprised of a display, housing unit for the battery, a counterweight for weight distribution, and secure clamps to snap onto a pair of glasses. The system was designed to be lightweight, and ergonomic in order for it to be comfortable for wearing and usage. The eyewear system weighs only 5 ounces and costs \$41!

Works-like Prototype



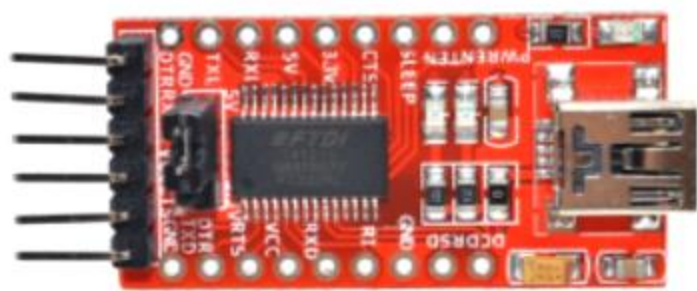
Works-like Prototype

The camera operates as a client that wirelessly communicates to the display, which acts as a server via Web Sockets established between the two. Images captured from the camera are decompressed before being transmitted to the display in a binary format. This array of bytes is used to recreate the images in the display.



Camera

The camera module can be placed in the area to survey and show the desired video to the operator of the glasses.



ESP-32

The ESP-32 records and communicates the live video feed to the FTDI Programmer module.

TFDI Programmer

The TFDI Programmer receives the data from ESP-32. The module then transmits the data wirelessly to the Display Module.

TTGO Display Module

The TTGO Display module receives the data from the TFDI Programmer and displays the information as images.

3.7V Battery

The modules of the system all operate on 3.7V power. The system is powered by two batteries.