

Smart-Glass Ecosystem

Team HA-221366: Quadropous



How can we access information, communicate with others, and perform a wide range of tasks without carrying a separate smartphone or laptop?

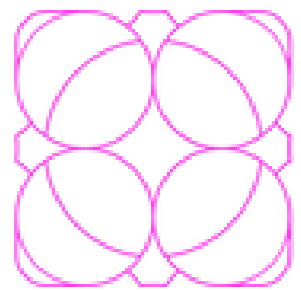


Needs

Solution



Use wearable technology which act as a natural extension of the body and simultaneously perform range of tasks.



UNIFY

A smart glass ecosystem

Our team have developed a smart glass which can be used for home automation without the need of carrying a separate smartphone or hub device.



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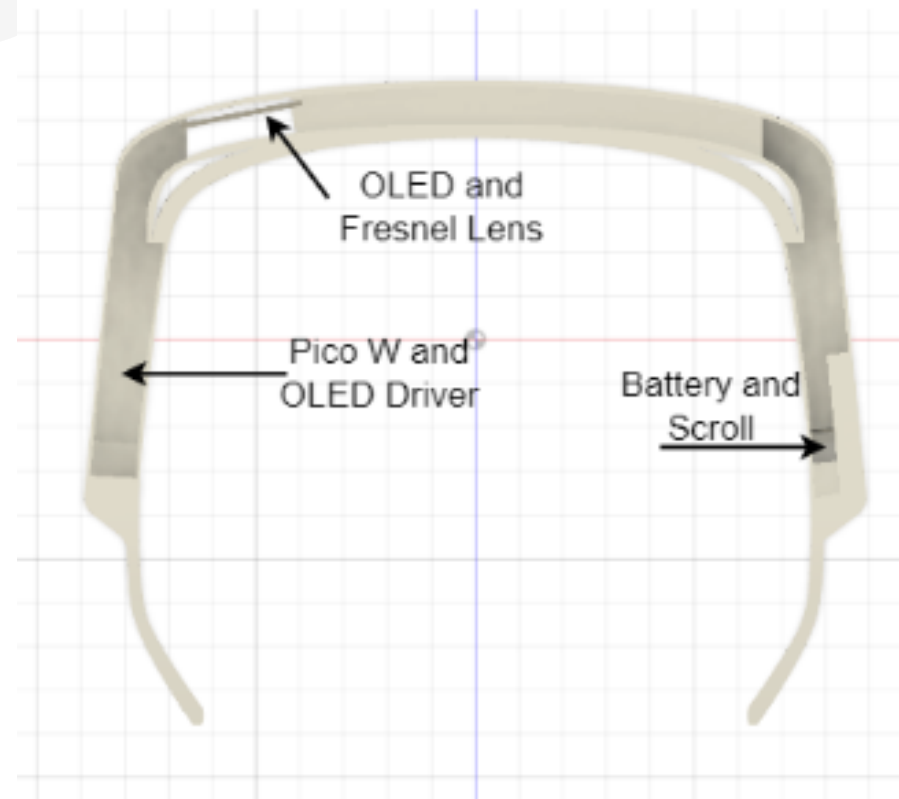
Technical Specification

For Smart Glasses, hub and smart
app



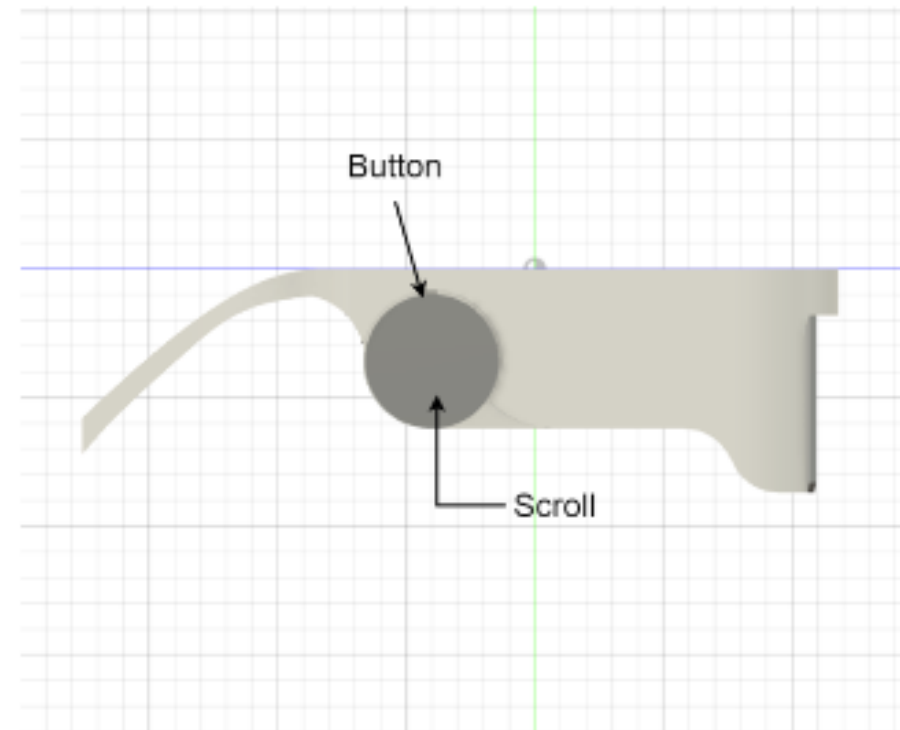
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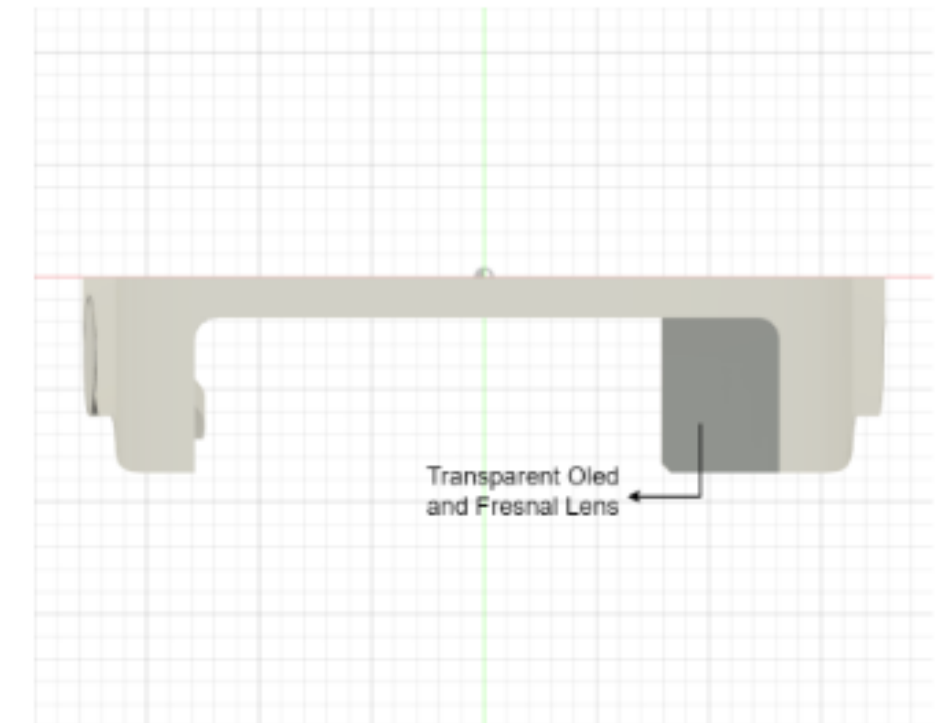
Housing in frame

To hold all the electronic components, battery and input controls.



Scroll and Button

Primary way of navigating and controlling devices.



OLED and Fresnel Lens

Primary display for information and lens to focus it on the eye.

Design



Electronic Components



Raspberry Pi Pico W



**Transparent OLED
Module**



Rotary Encoder



3.7V LiPo Battery

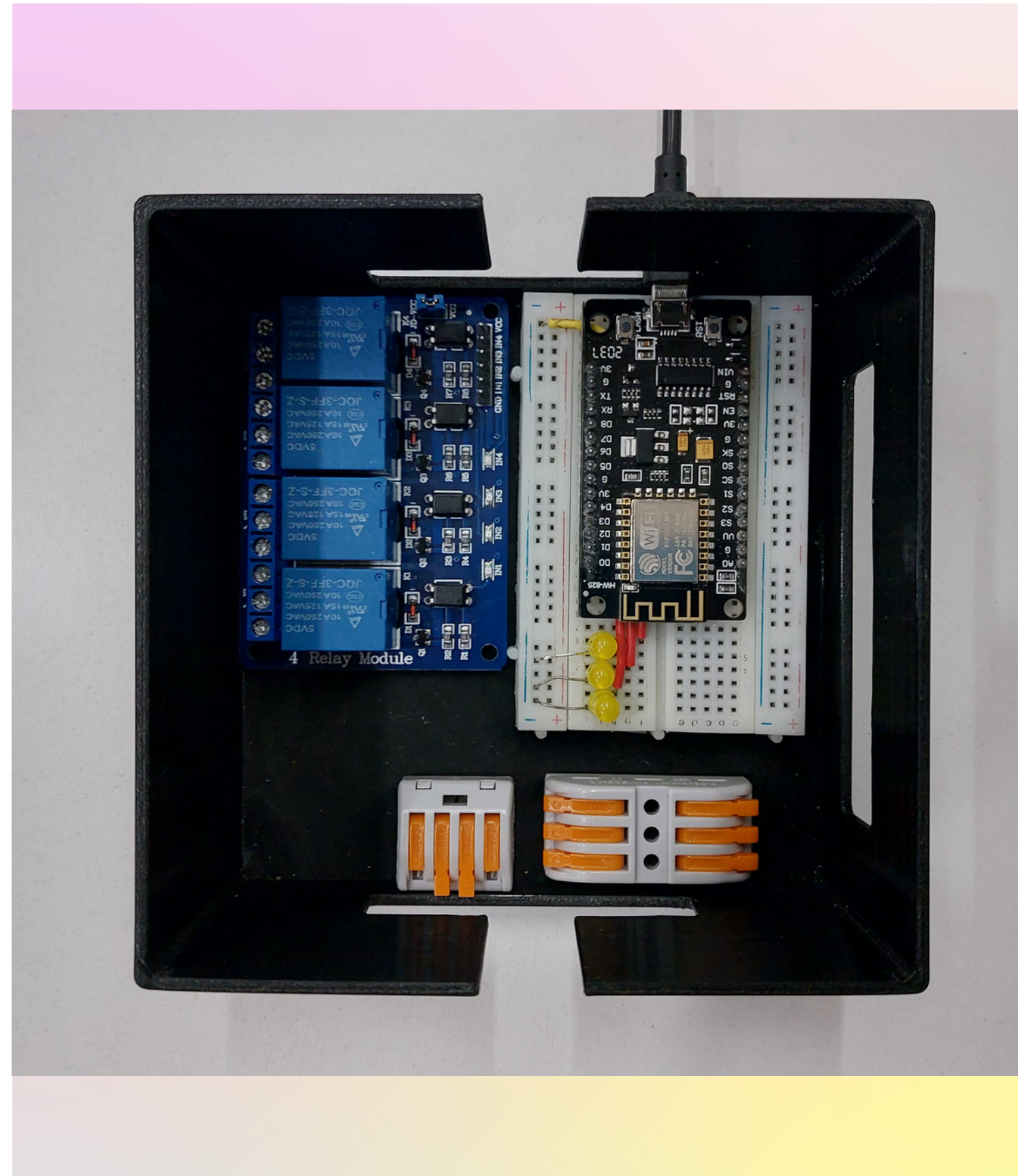
Hub

Features & Specifications

The hub is a retrofit system that can replace existing switchboards. This hub will be controlled using spectacles

For the time being, the hub can control 3 types of devices a) simple two-state devices such as lights and sockets, b) Fan, and c) other multi-state devices such as variable intensity light or multicolor light

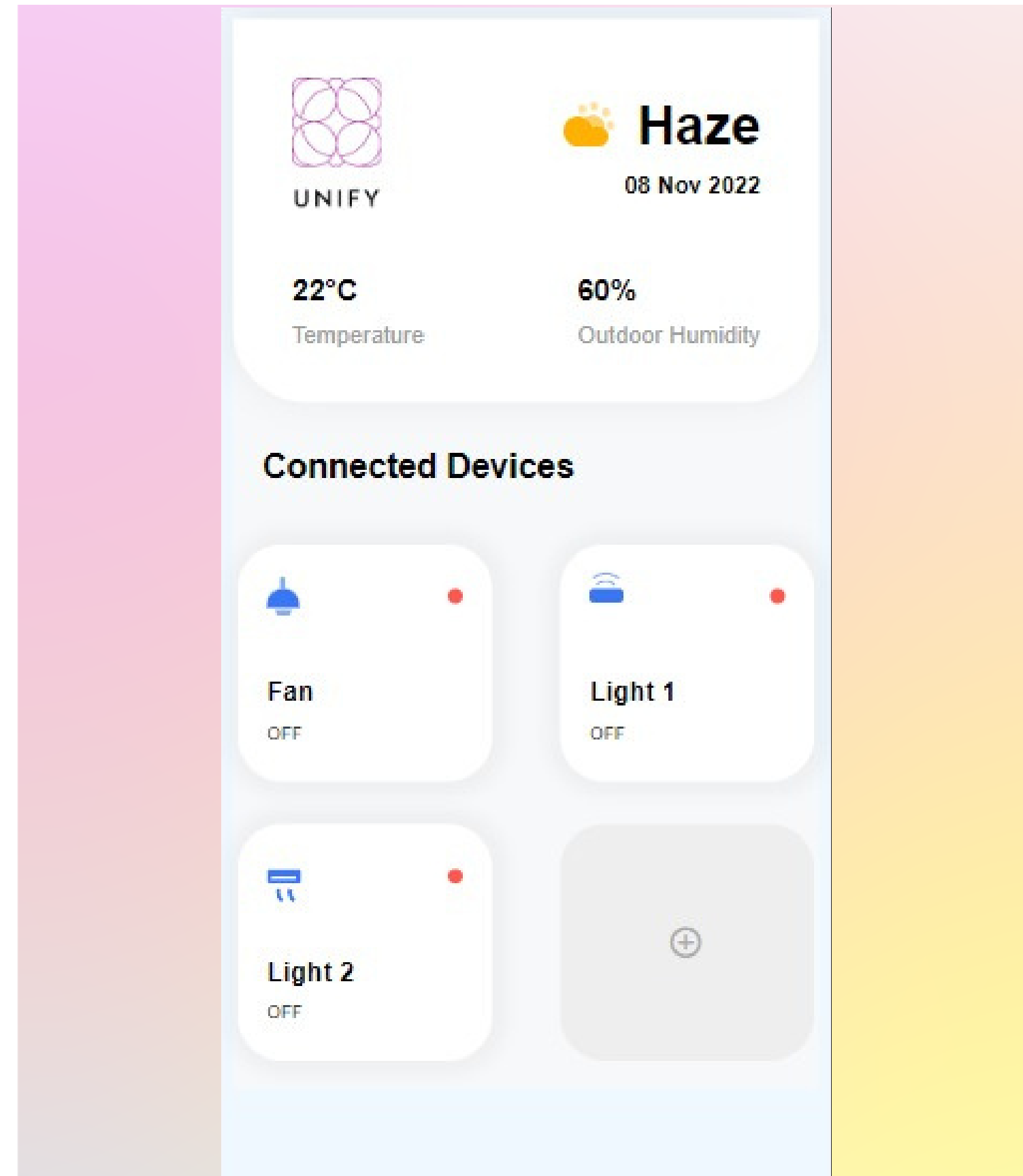
The hub consists of an ESP8266 board to send and receive data and process it to change the state of the relay modules to control the corresponding appliance/ device.





Software

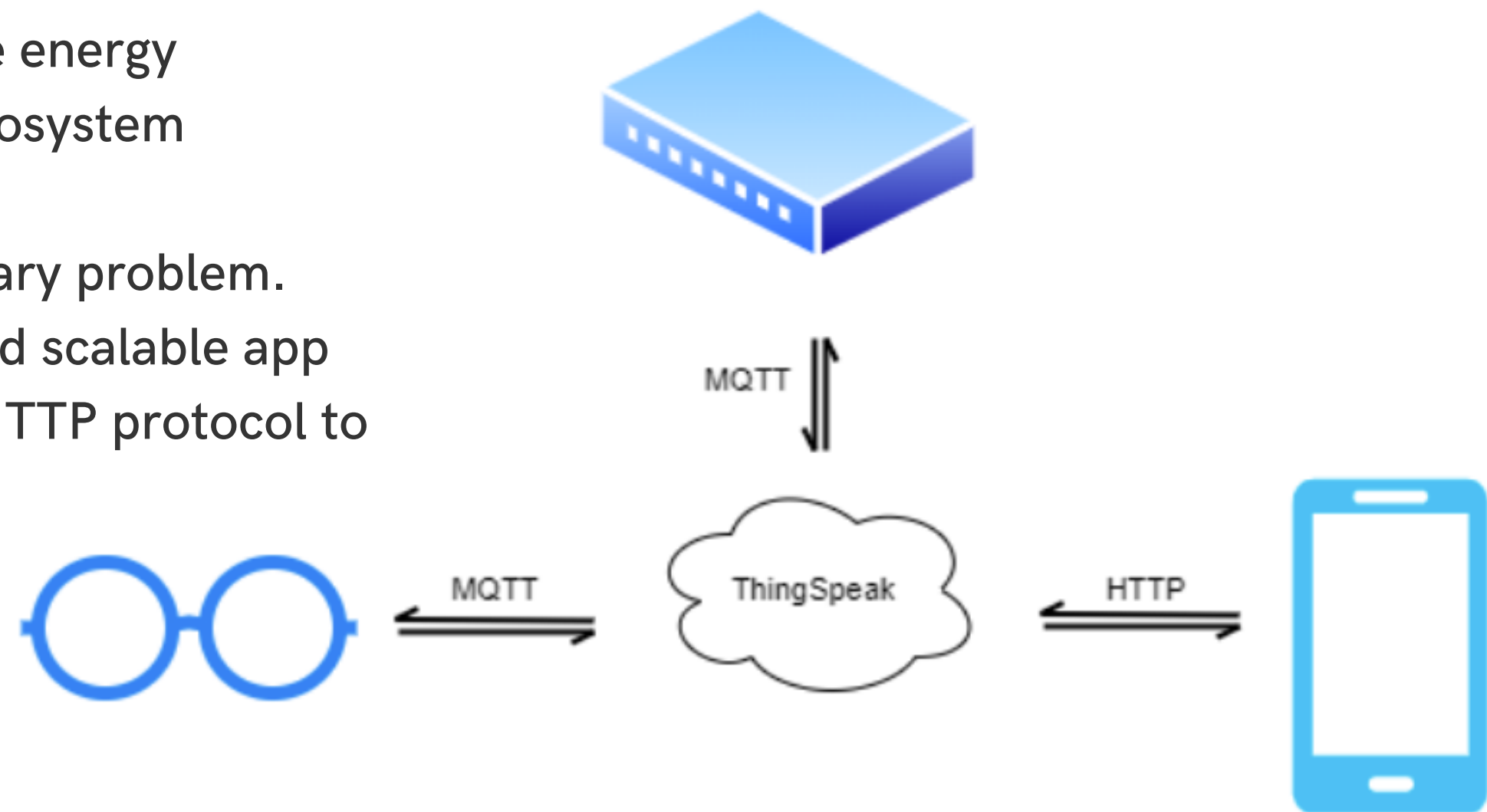
Features & Specifications



... Communication

We have implemented MQTT as our communication protocol in glasses and hub to increase the energy efficiency and network reliability of our ecosystem

In companion app, efficiency is not a primary problem. Our main goal is to create a compatible and scalable app with fast communication. Hence, we use HTTP protocol to achieve the same.



Cost



Glasses		
Sr.no	Item	Cost
1	Raspberry Pi Pico W	₹650
2	OLED	₹2200
3	Battery	₹200
4	Push button and scroll	₹200
5	3D Printed Frame	₹1500

Hub		
Sr.no	Item	Cost
1	ESP8266	₹400
2	Relay Module	₹400
3	Light Dimmer	₹1000
4	3D Casing	₹500

Target Audience

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Upper Middle-income households

Our primary demographic

We believe this product can truly revolutionize the market for smart devices and expand them to every upper middle-income house which have the purchasing power and drive to uplift their standard of living at a reasonable cost by providing a flexible and cost-effective device to automate their homes.

Thanks

