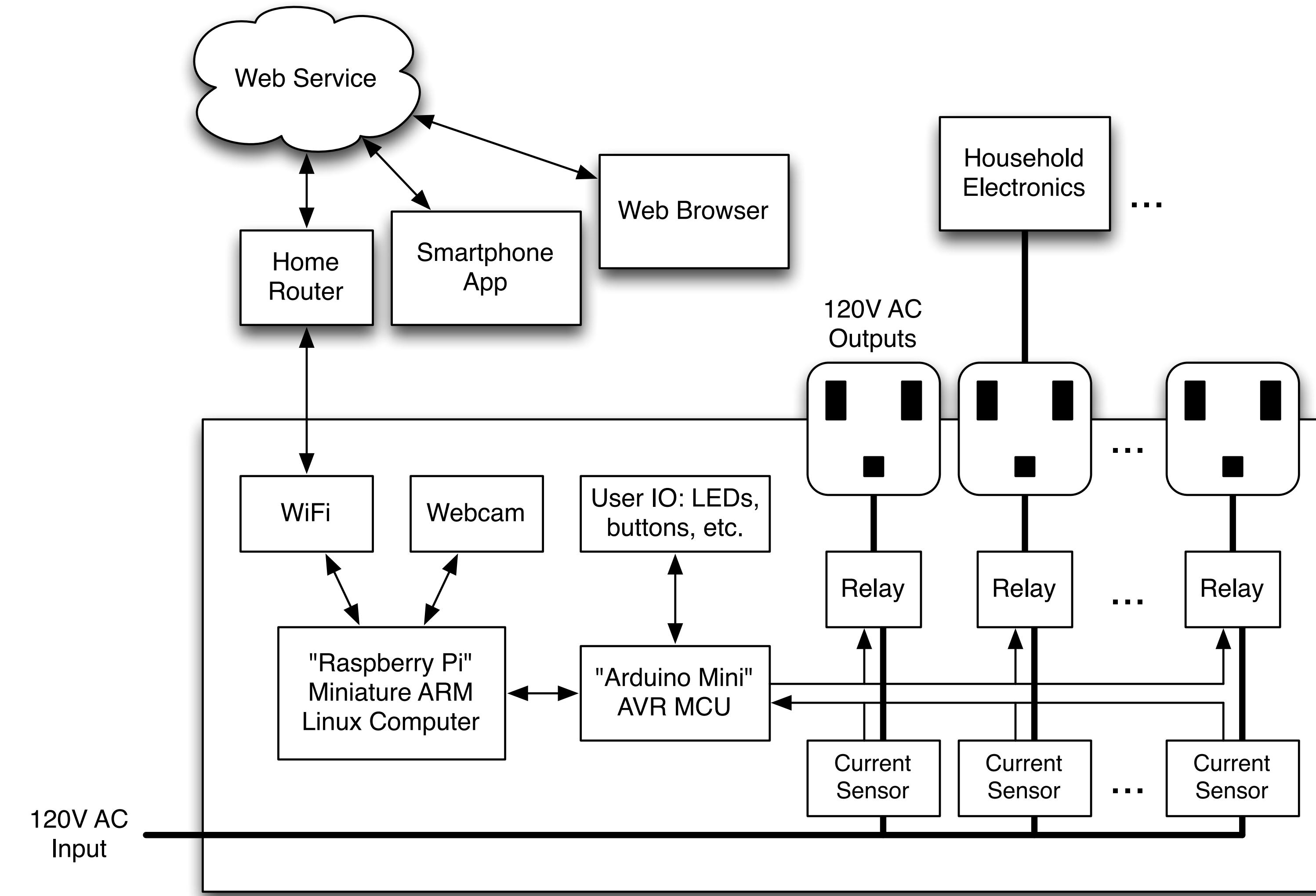


cloudpower: Wirelessly Controlled Power Monitoring System

Project

Control and monitor your connected electronics from anywhere.

The cloudpower system consists of a power-bar unit with electrical outlets and a remote service, allowing power usage logging and management of connected devices from anywhere. Usage data can be retrieved and graphed easily from a simple web application.



Features

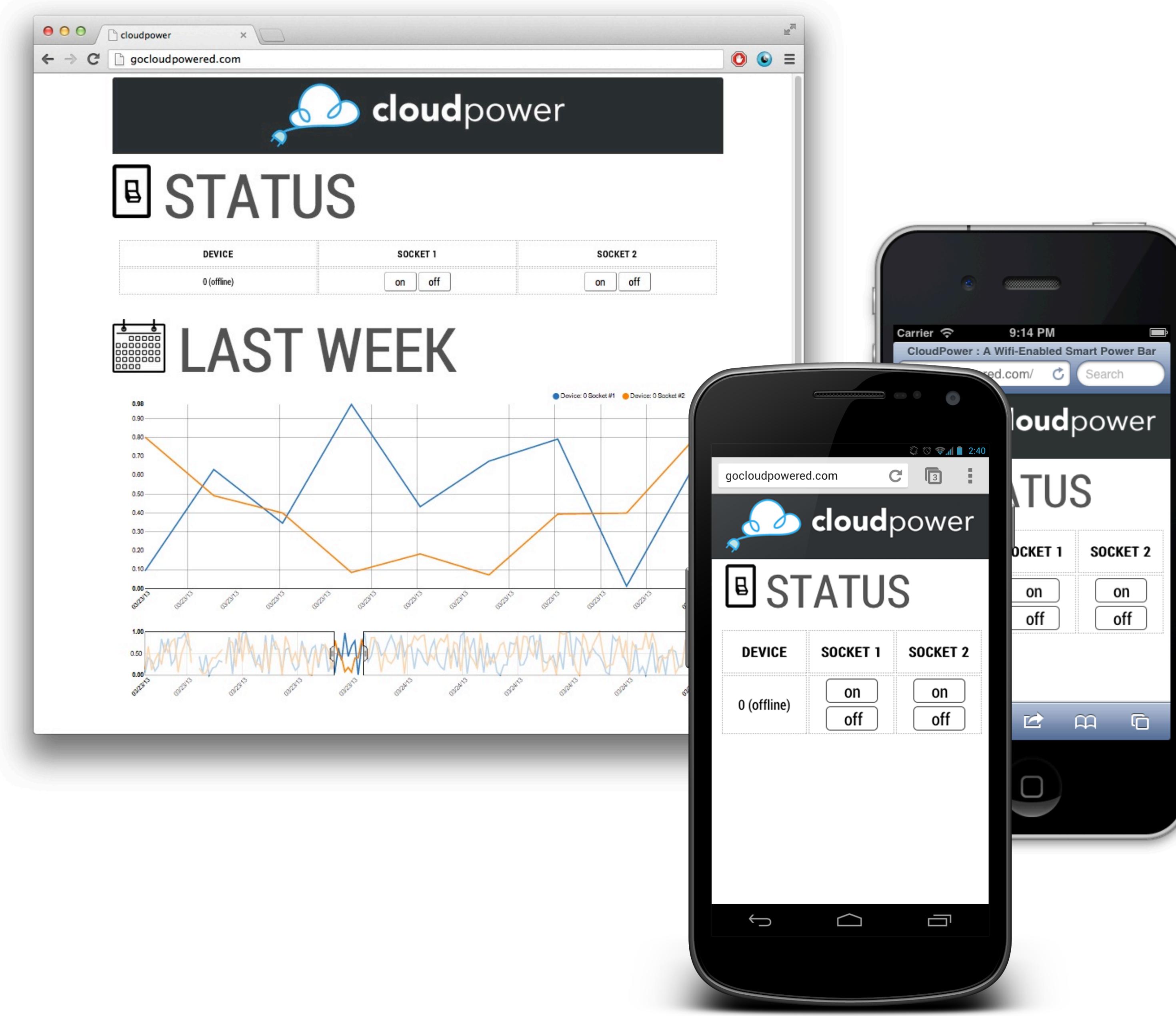
- Power outlet control and monitoring from any internet browser
- Bidirectional communication works behind proxies and routers
- Stores power consumption data in a remote database retrievable via a web application with detailed information and graphs

How it works

The cloudpower unit controls and monitors connected devices using an Arduino, relays and a RMS current-voltage monitoring circuit.

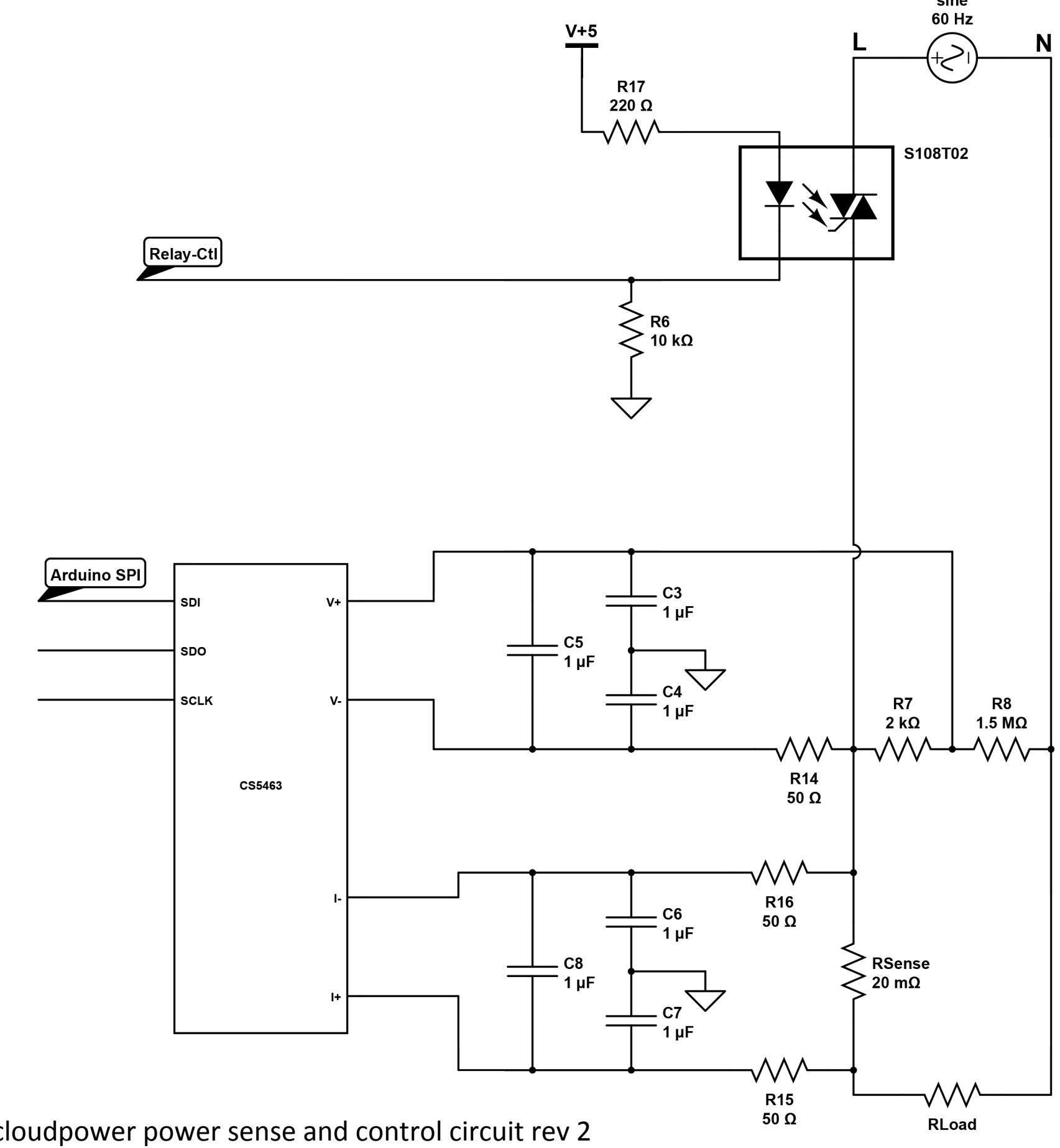
A Raspberry Pi runs a custom node.js monitor application, establishing a bidirectional WebSocket connection between the remote node.js web server and the Arduino firmware. This setup permits operation behind proxies and routers.

The usage data is submitted to the remote web server and is stored in a database, retrievable via a web application and JSON API.



Improvements

- Wireless network authentication via QR code reader and a camera.
- User account management
- Reduce power consumption



cloudpower power sense and control circuit rev 2
Using the Cirrus Logic CS5463 single phase power sense IC