Implementation of a Home Automation Service

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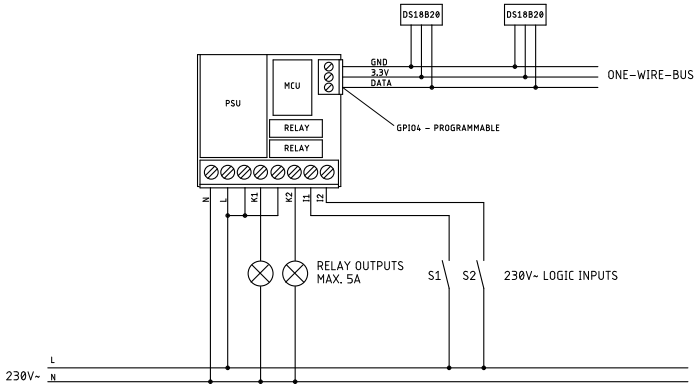
Overview

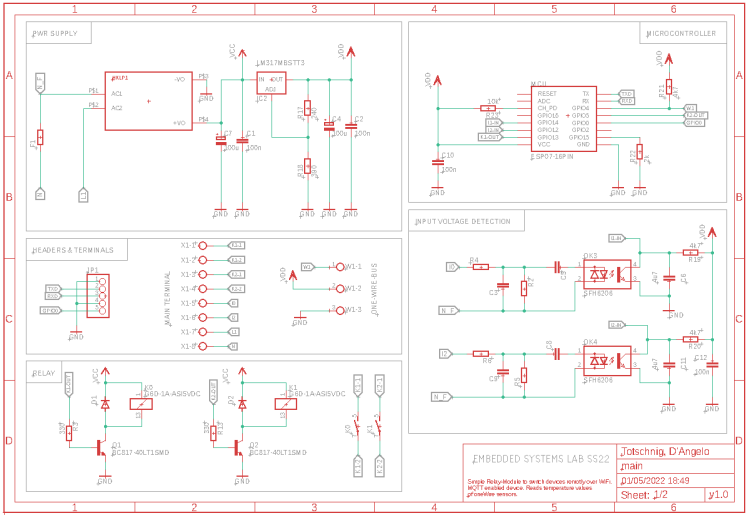
Introduction - Concept

- Tiny network enabled device
- Two relay outputs
- Two logic inputs
- One BUS interface for sensors
- Client - server model
- MQTT for controlling and sensing
- TELNET & serial for configuration

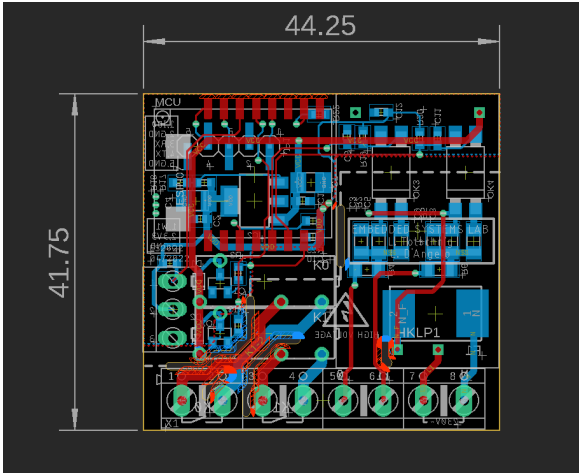
Introduction - Concept



Hardware - Schematic



Hardware - PCB Layout



Software - Firmware

- Framework based on a previous project
- Simple CLI for configuration & setup
- TELNET & serial for configuration
- Client - server model
- MQTT used for control channel and state channel
- Firmware upgrade OTA over HTTP

State of the Project - Current State

- ☒ Waiting for feedback (10/04/22)
- ☒ Finishing the design of the PCB (17/04/22)
- ☒ Placing the order on JLCPCB (17/04/22)
- ☒ Creating a prototype of the firmware (17/04/22)
- ☒ Preparing the mid-term presentation (01/05/22)
- ☒ Soldering of the remaining components (08/05/22)
- ☒ Testing the hardware (15/05/22)
- ☐ Adding hardware support to firmware (15/05/22)
- ☐ Setting up the test network (22/05/22)
- ☐ Setting up the Raspberry PI (22/05/22)
- ☐ Creation of the demo video (31/05/22)
- ☐ Writing the report (31/05/22)

Thank you!

$\exists$ Questions?