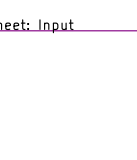


[illegible]

File: Iot12 Control Board

Sheet: Input



File: Iot12 Control Bo

Sheet: Brain

File: IoT12 Control Board

Sheet: Output

the 1990s, the number of people in the United States who are 65 years of age or older has increased by 50% (U.S. Census Bureau, 2000). The number of people aged 65 and older is projected to increase to 20% of the total population by the year 2020 (U.S. Census Bureau, 2000). The increase in the number of people aged 65 and older has led to an increase in the number of people who are dependent on others for their care. This has led to a need for more long-term care facilities, such as nursing homes and assisted living facilities. The number of people in long-term care facilities has increased by 50% since the 1970s (U.S. Census Bureau, 2000). The increase in the number of people in long-term care facilities has led to a need for more research on the needs of these people and on the best ways to care for them.

File: IoT12 Control Boa

H1 MountingHole H2 MountingHole

H3 MountingHole H4 MountingHole

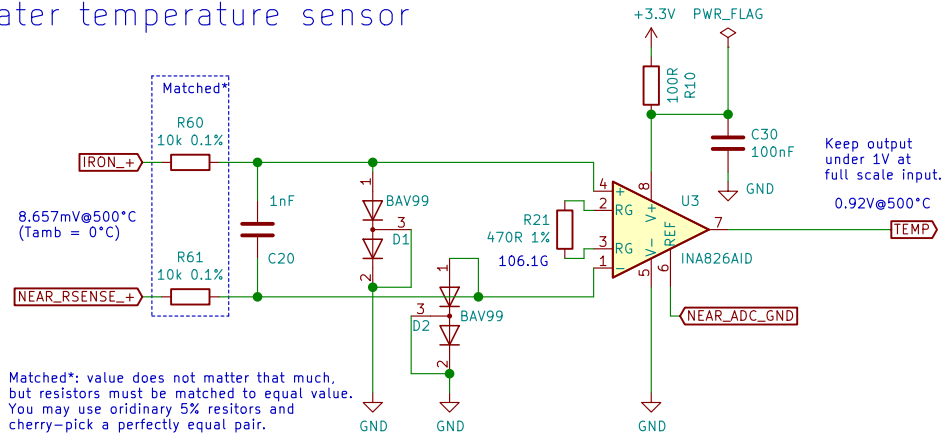
<b>Title: IoT12-hardware</b>	
Size: A4	Date: 2021
KiCad E.D.A. kicad (5.1.10)-	

Size: A4	Date: 2021
KiCad E.D.A. kicad (5.1.10)-	

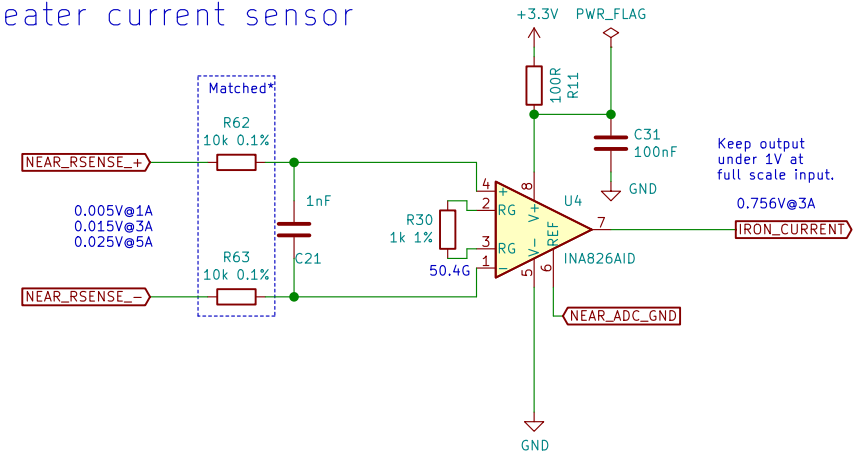
KiCad E.D.A.	kiCad (5.1.10)–1
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Id: 1/5

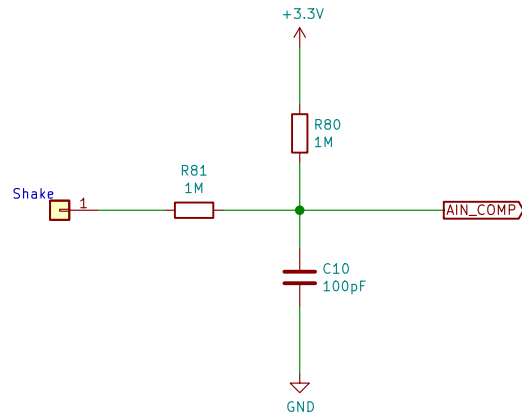
## Heater temperature sensor



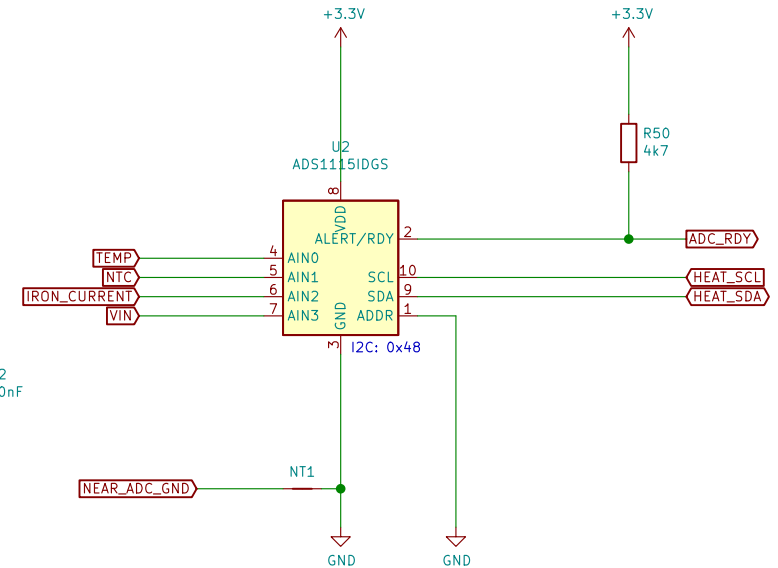
## Heater current sensor



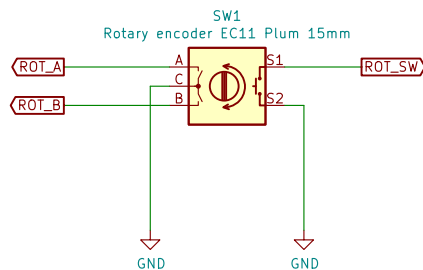
## Tilt switch sensor as shake sensor



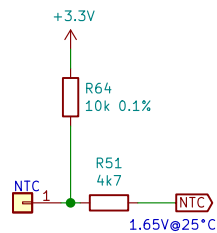
## External 16b I2C ADC



## User input



## Handle NTC



Sheet: /Input/  
File: IoT12 Control Board Input.sch

**Title: IoT12-hardware input and sensors**

Size: A4 Date: 2021-09-26

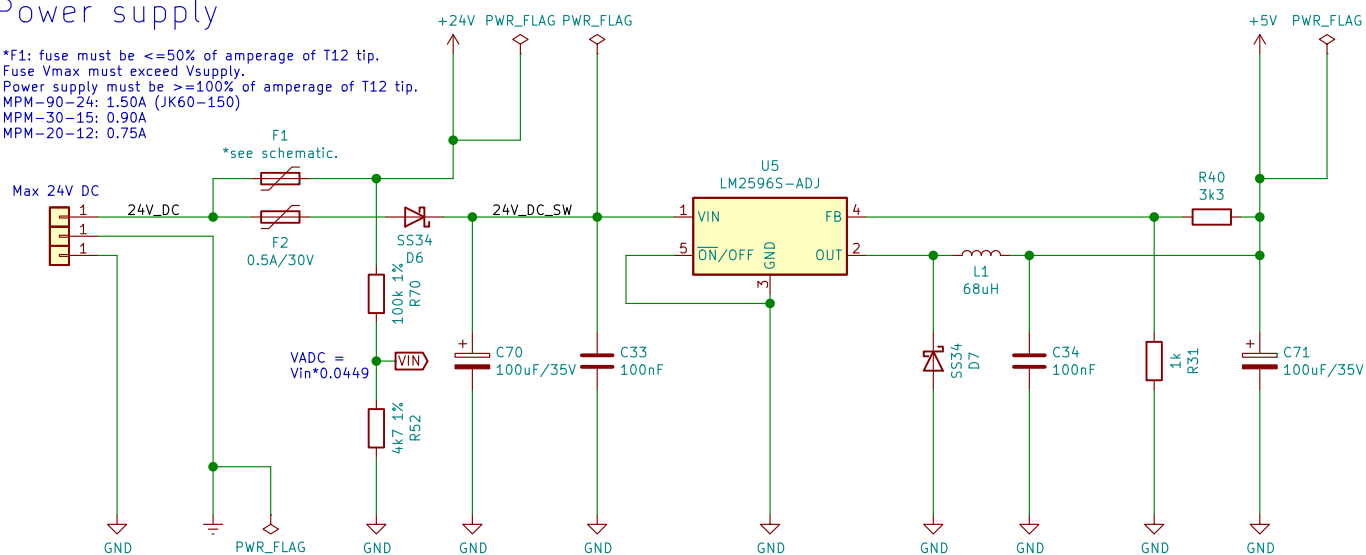
KiCad E.D.A. kicad (5.1.10)-1

Rev: V2.1

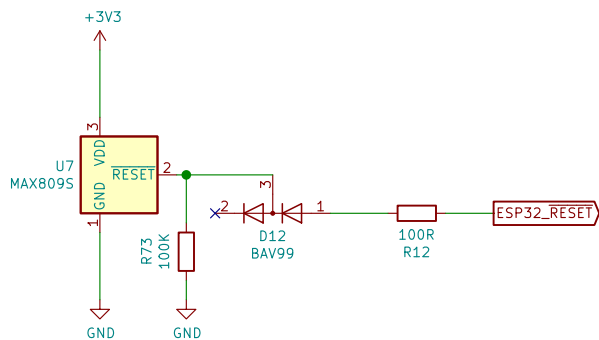
Id: 2/5

## Power supply

\*F1: fuse must be <=50% of amperage of T12 tip.  
Fuse Vmax must exceed Vsupply.  
Power supply must be >=100% of amperage of T12 tip.  
MPM-90-24: 1.50A (JK60-150)  
MPM-30-15: 0.90A  
MPM-20-12: 0.75A



## Voltage monitor



Sheet: /Power/  
File: IoT12 Control Board Power.sch

**Title: IoT12-hardware power supply**

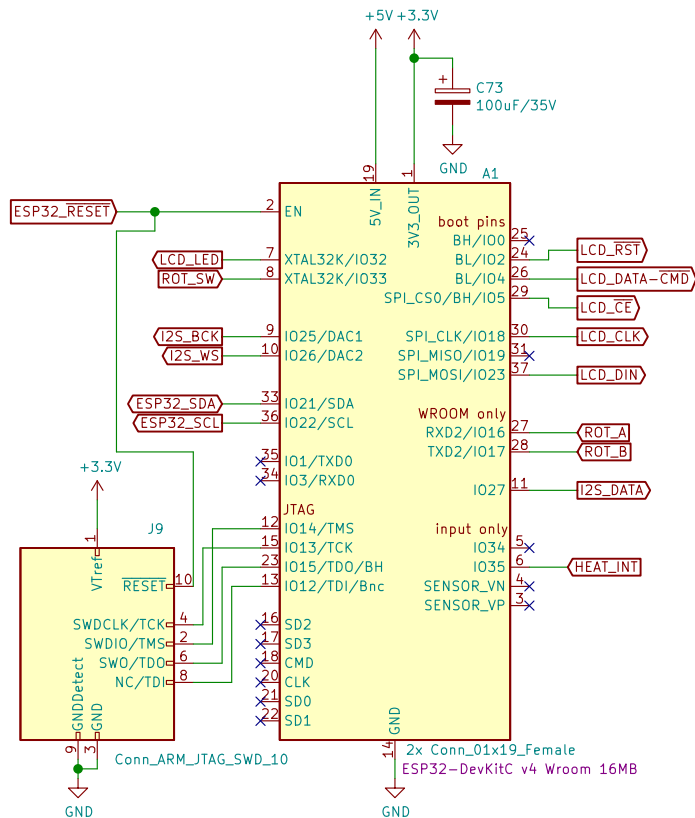
Size: A4 Date: 2021-09-26

KiCad E.D.A. kicad (5.1.10)-1

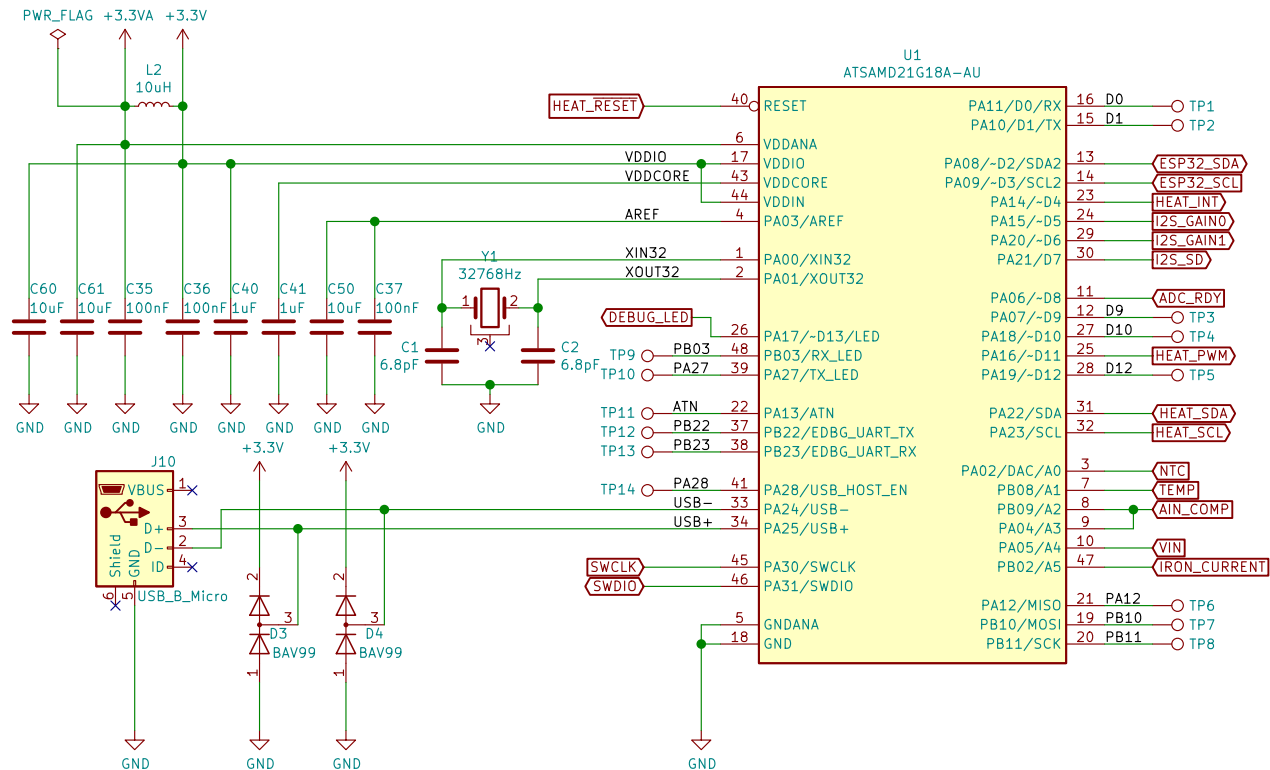
**Rev: V2.1**

Id: 3/5

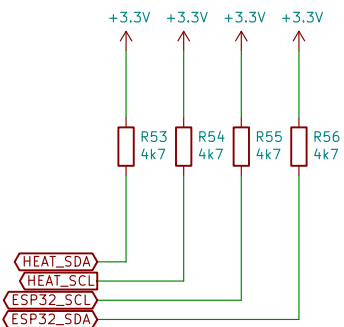
## ESP32 wireless module



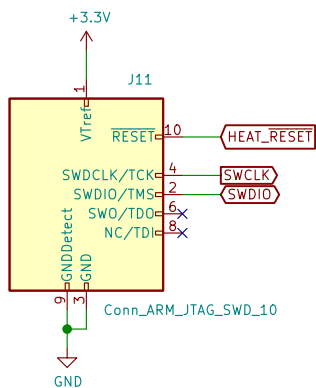
## Heat controller



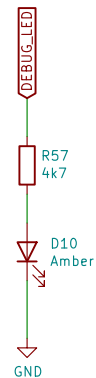
## The pull is strong



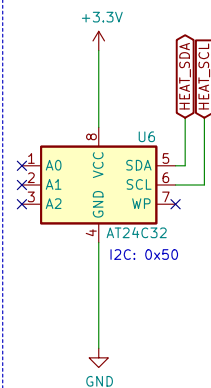
## Heat controller SWD



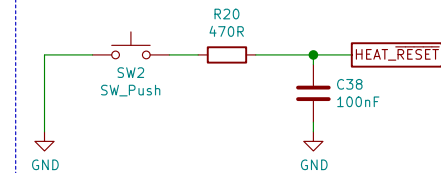
## Debug LED



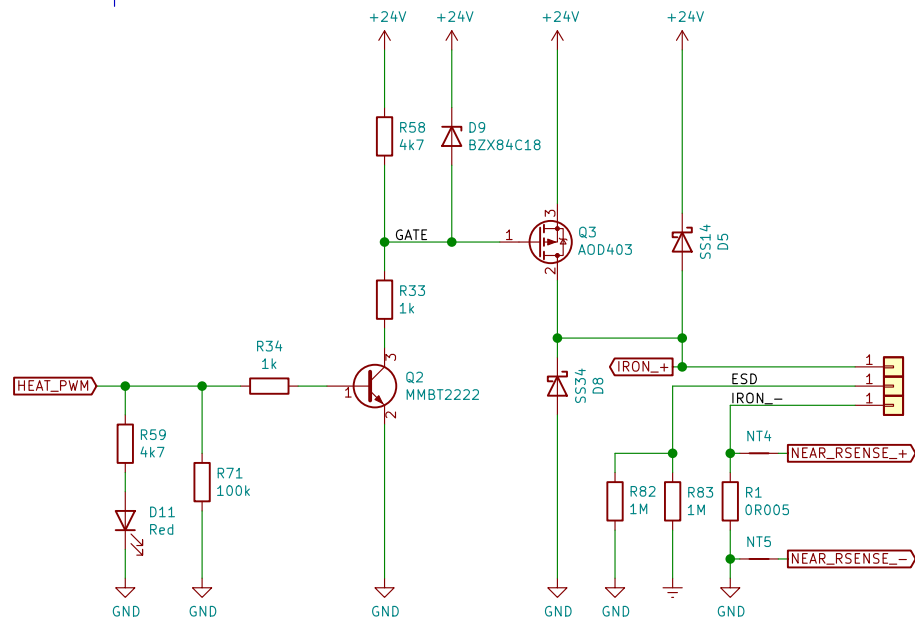
## EEPROM



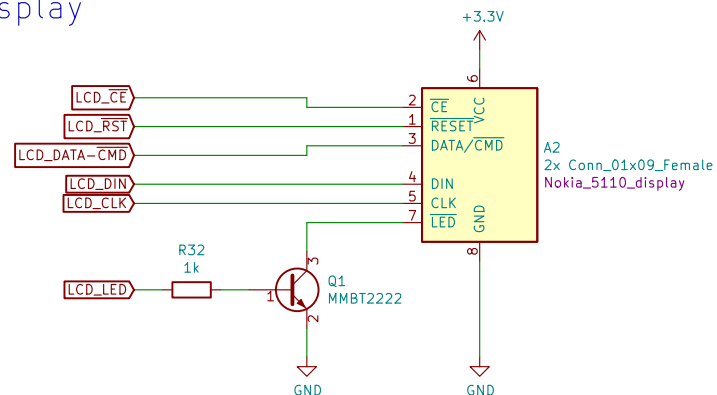
## Heat controller reset



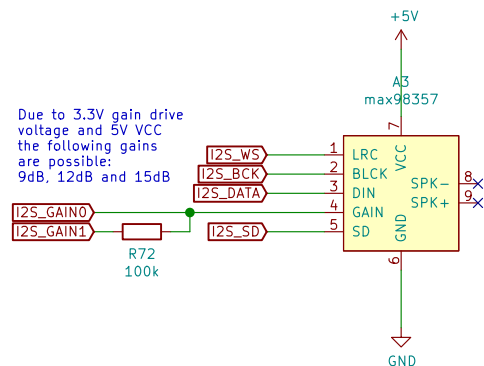
Heater power



Display



Bleep bloop module



Sheet: /Output/  
File: IoT12 Control Board Output.sch

**Title: IoT12-hardware output**

Size: A4	Date: 2021-09-26
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Rev: V2.1

Id: 5/5