

Design Review 3 CarMan  
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Purpose: To go over adjusted schematics for Logic, GLV, and TSI.

Documents: KiCad Schematics (11/16/20 versions)

### GLV BOB

- U1 naming - Just regulated, non-iso

### Logic Board

- U1 naming - Just regulated, non-iso
- Clarify Ground to “isolated return” for 5V
- Crossover dot linear regulator (Id: 3/3). Clean up defense schematic
- Pi Zero? But wired ethernet is needed for SSH
  - Need a hub/network switch because ethernet is being sent three places
    - Can/Serial interface so dashboard Pi becomes simpler Pi
  - 2A pass, needs short run to DC/DC converter on pcb

### TSI Board

#### Can & GLV Power

- Fault logic has to go
  - Could not use logic flip flop
    - **Latching relay for IMD**
    - **Latching relay in packs** for each respective AMD faults
      - Somehow wire to Dashboard LED
      - Need reset button(s)
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  - TSI - latching relay for IMD
    - Relay contact for IMD fault that can handle Safety Loop
- IMD Relay is in safety loop however, latching mechanism with reset button is needed
  - Needs to be drawn on GLV safety diagram
    - 3 additional latching relays on safety loop
      - 2 - AMD faults in the Packs
      - 1 - IMD fault relay on TSI
- Cooling Relay & SCADA Relay
  - Nothing pulling up the gate

- High Side switch or low side switch
      - Drop cooling to emitter
      - 24V Base
      - Check  $V_{GS\ MAX}$  to make sure transistor can handle 5V
      - Use non-isolated 5V in opto isolator switches so gate is inly pulled up to 5V
        - Same thing for SCADA, Cooling Relay, IMD Relay?
    - Prefers label to be over the wire
  - Note Cooling DC/DC Converter (24V to 12V 10A)
  - Newer 3.3V Regulator
- Brake light needs to turn off when BOT is pressed
    - Needs to be on Safety Loop
    - *Power from Brake Light taken after BOT*
  - Breakers
    - 5A Peak - 30 ms
      - Rate breaker below max
    - Use data from AIRs
    - Fuse on 12V line
  - Cooling Relay can be dropped if we have converter on TSI
    - Control using on/off input, remove relay