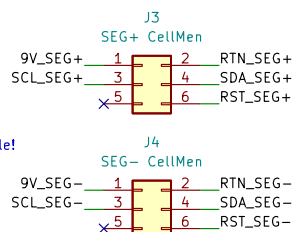
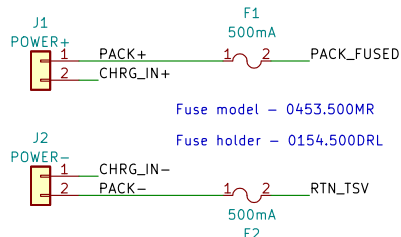


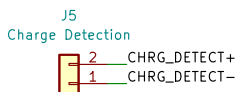
TSV <- Isolated high voltage TSV side of board

Low voltage side of board -> GLV

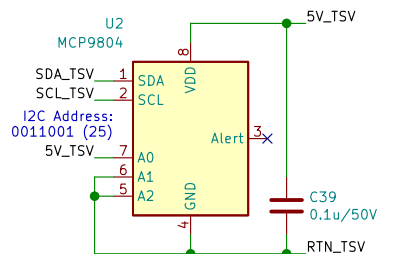
From pack terminals through in-line 20A fuse and from charging port on panel through in-line 20A fuse



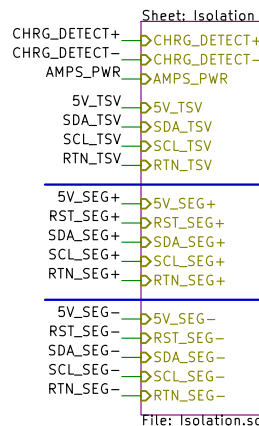
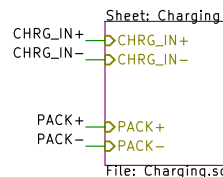
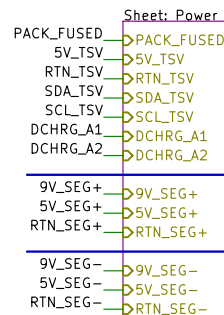
To Anderson charging port on panel. Use 18-24 AWG Molex crimp terminals (P/N 39000039) with mating connector on 20/22/24 AWG stranded wire.



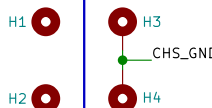
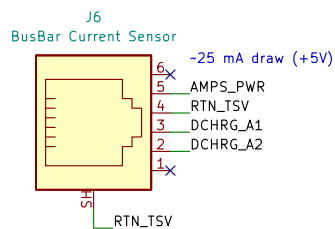
Temp Sensor (TSV Side)



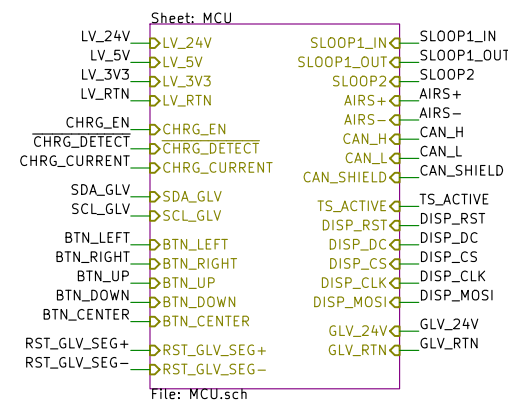
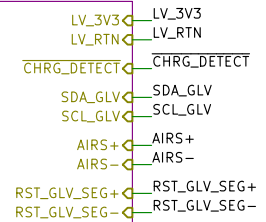
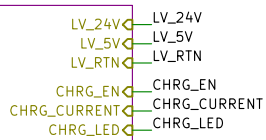
Required Logos



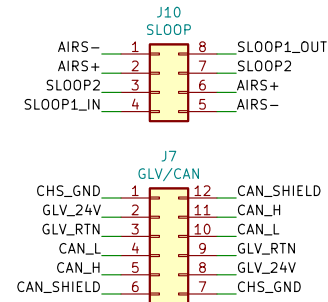
Connects to BBM-01 busbar current sensor



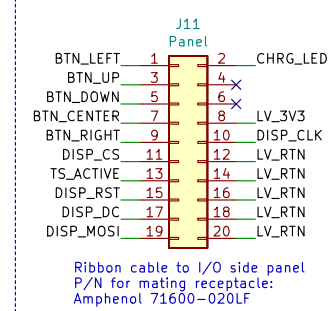
Connect plated mounting holes on GLV side to chassis ground in order to ground pack enclosure.



SLOOP and GLV/CAN input/output signals. Wire so that one row of the connector is input, and the other row is output. Wire directly to Deutsch DT panel mount connectors. Use 16 AWG crimp terminals (P/N 39000078) with 16 AWG stranded wire.



To each AIR. Use 18-24 AWG Molex crimp terminals (P/N 39000039) directly on AIR wire leads.



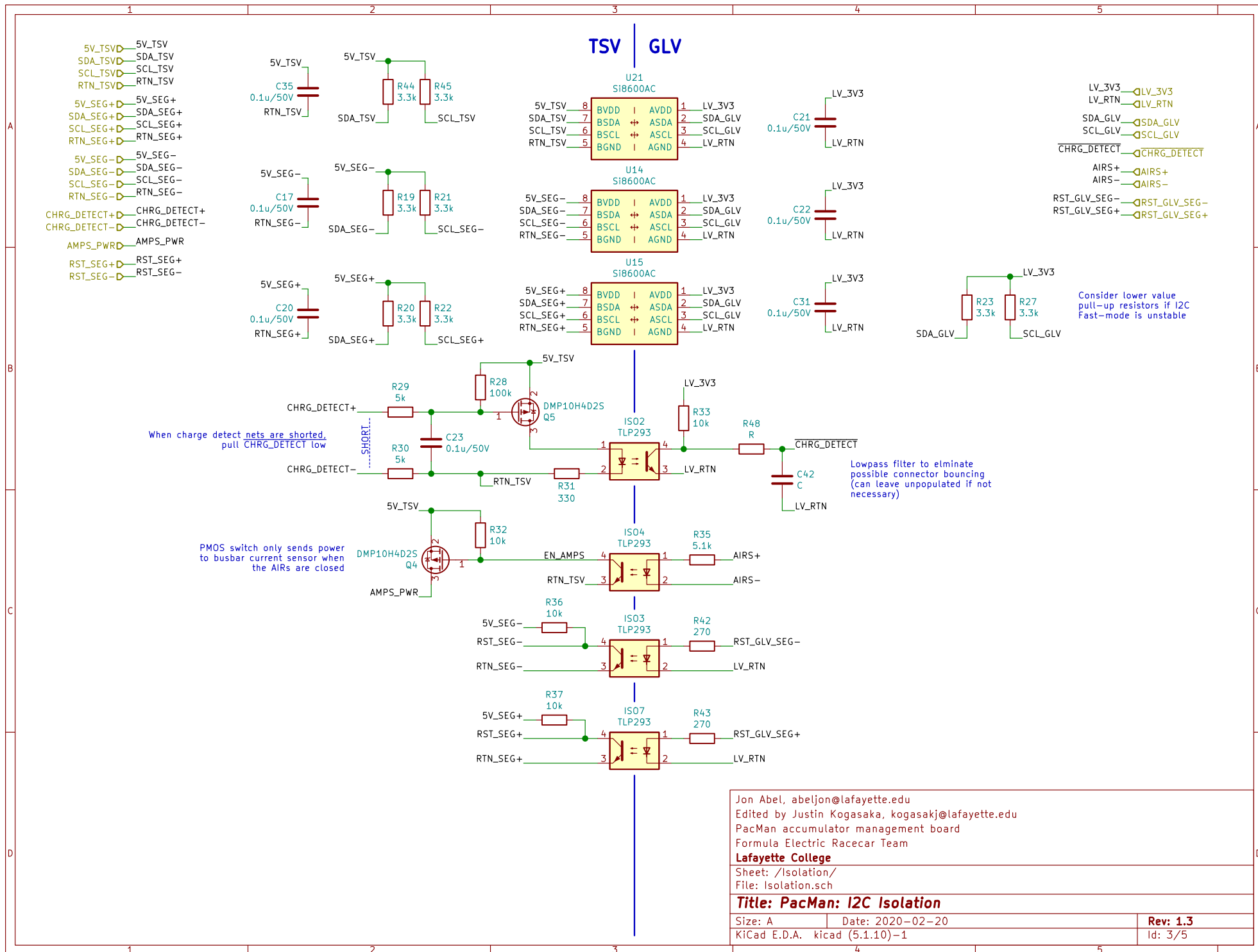
Jon Abel, abeljon@lafayette.edu
Edited by Justin Kogasaka, kogasakj@lafayette.edu
PacMan accumulator management board
Formula Electric Racecar Team
Lafayette College

Sheet: /
File: PacMan.sch

Title: PacMan

Size: A Date: 2020-04-08
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Rev: 1.3
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TSV

PACK_FUSED → PACK_FUSED
5V_TSV → 5V_TSV
RTN_TSV → RTN_TSV

9V_SEG+ → 9V_SEG+
5V_SEG+ → 5V_SEG+
RTN_SEG+ → RTN_SEG+
9V_SEG- → 9V_SEG-
5V_SEG- → 5V_SEG-
RTN_SEG- → RTN_SEG-
DCHRG_A1 → DCHRG_A1
DCHRG_A2 → DCHRG_A2

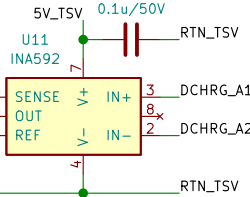
SDA_TSV → SDA_TSV
SCL_TSV → SCL_TSV

I2C Address:
1101111
(decimal 111)

Also responds to mass write
address 1100110 (decimal 102)
Check datasheet for more info

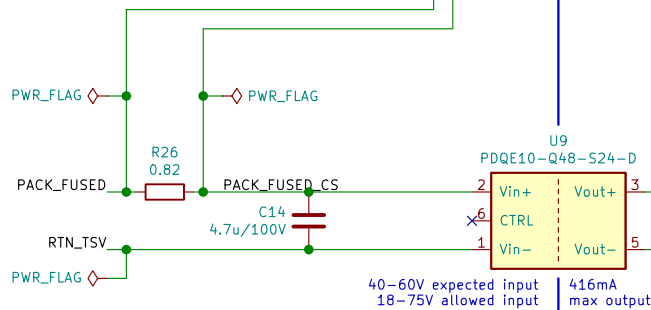
U10
LTC4151

Output gain of 0.5

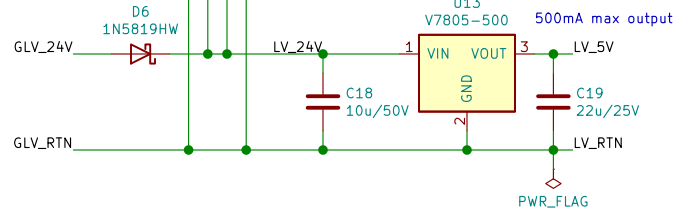


In current single-supply configuration of INA592, only positive differential voltage can be measured (only positive discharge currents). If active balancing is used, this should be changed to be able to measure negative discharge current.

81.92mV full-scale
sense differential voltage
0.82ohm shunt resistor →
100mA max measurable current
draw from pack

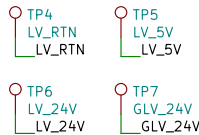
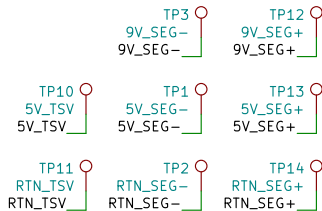


Schottky diodes "OR"
together power sources
so system can be powered
either from a GLV supply
or directly from the
battery cells



GLV

LV_24V → LV_24V
LV_5V → LV_5V
LV_RTN → LV_RTN
GLV_24V → GLV_24V
GLV_RTN → GLV_RTN

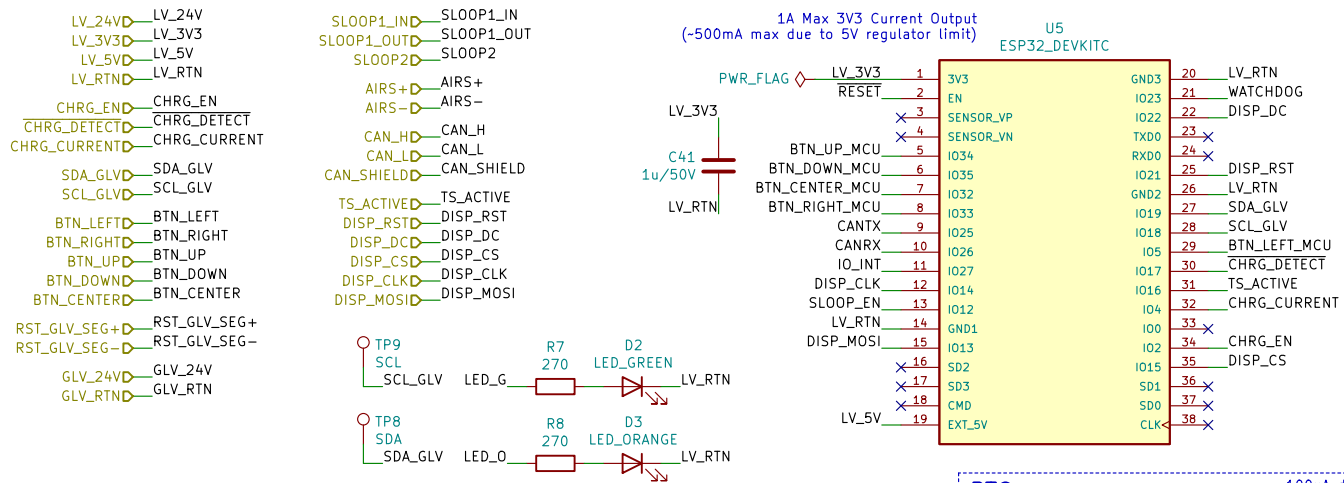


Jon Abel, abeljon@lafayette.edu
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PacMan accumulator management board
Formula Electric Racecar Team
Lafayette College
Sheet: /Power/
File: Power.sch

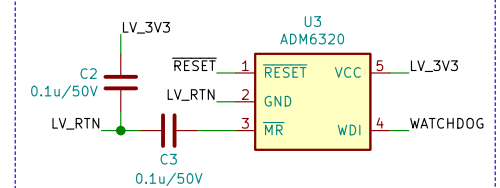
Title: PacMan: Power

Size: A Date: 2020-02-20
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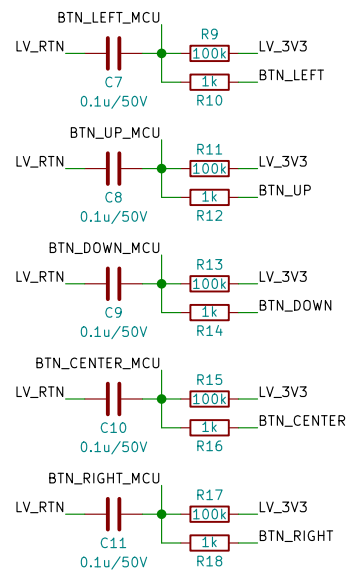
Rev: 1.3
Id: 4/5



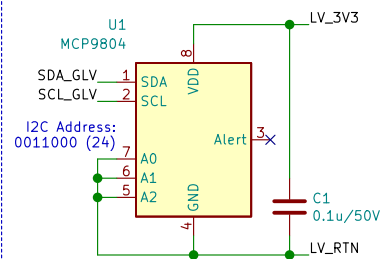
Watchdog



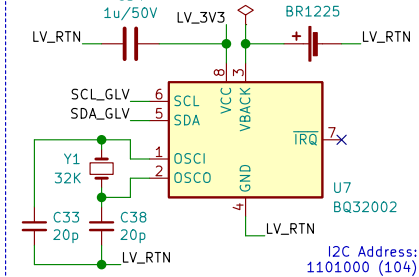
Button Filtering



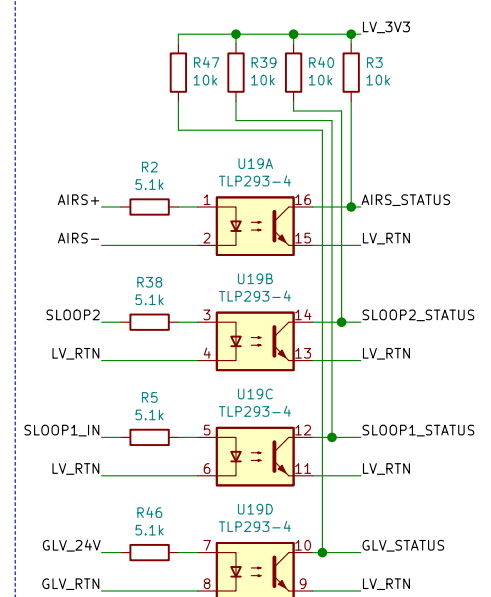
GLV Temp Sensor



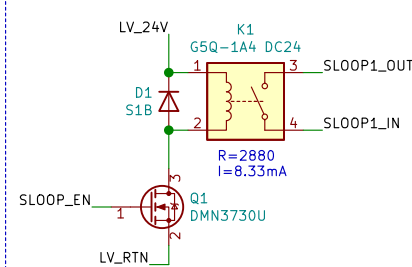
RTC



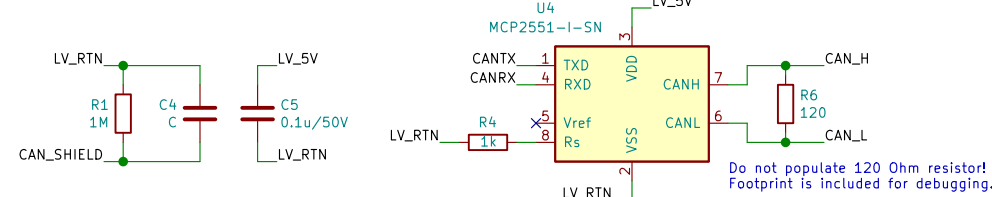
GLV/SLOOP Status



Safety Loop Relay



CANBus Transceiver



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Edited by Justin Kogasaka, kogasakj@lafayette.edu
PacMan accumulator management board
Formula Electric Racecar Team

Lafayette College

Sheet: /MCU/
File: MCU.sch

Title: PacMan: MCU, SLOOP, CANBus

Size: A Date: 2020-02-20
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Rev: 1.3
Id: 5/5