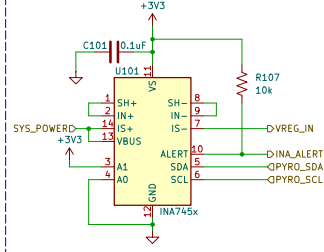
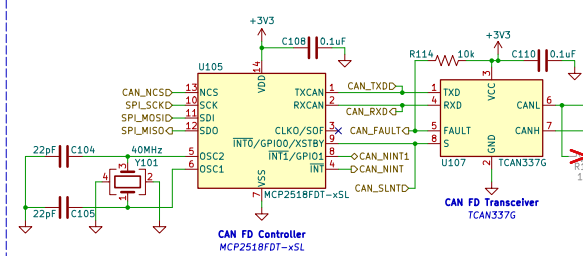


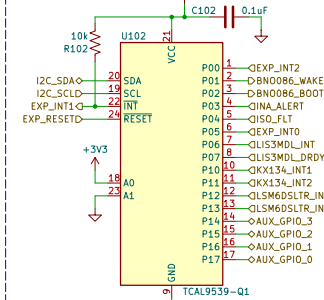
Main Battery Voltage Monitoring



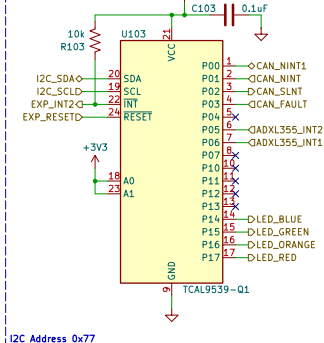
CAN FD Controller and Transceiver



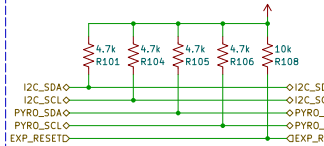
GPIO Expander 1



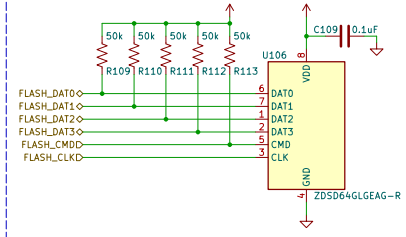
GPIO Expander 2



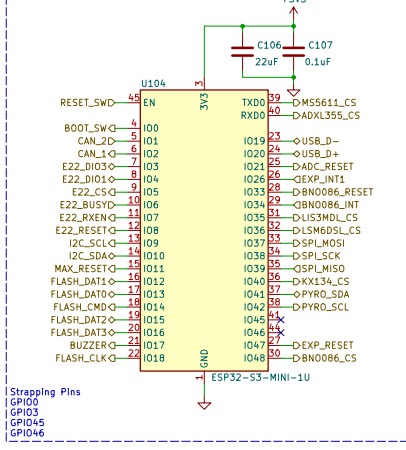
Pull-Up Resistors



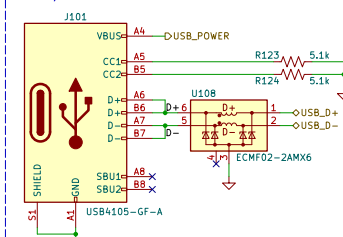
64 Gbit Flash Memory



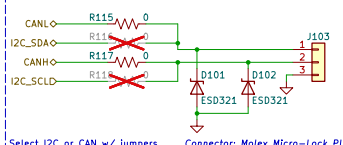
Microcontroller



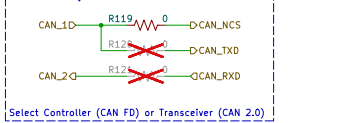
ESP32 USB-C Port



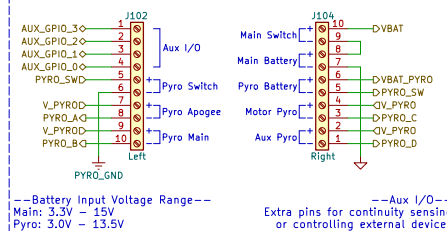
Board-to-Board Connector



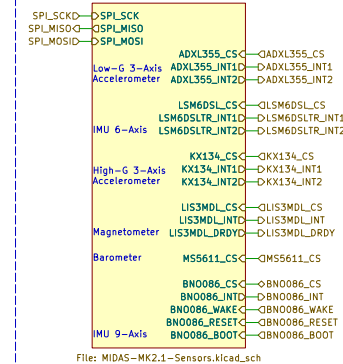
CAN Jumpers



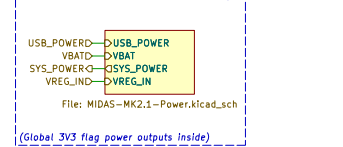
SCREW TERMINALS



Hierarchical Sensor Circuitry

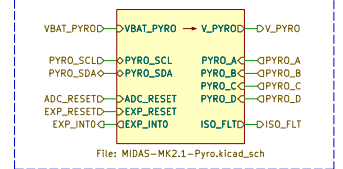


Hierarchical Power Circuitry

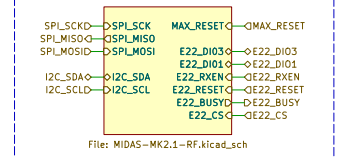


Global 3V3 flag power outputs (inside)

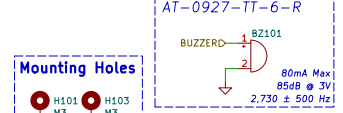
Hierarchical Pyro Circuitry



Hierarchical Radio Circuitry



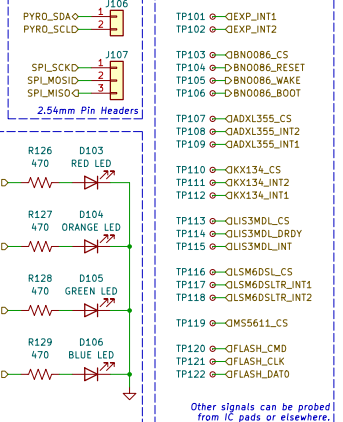
Piezo Buzzer



MCU Debug Pin



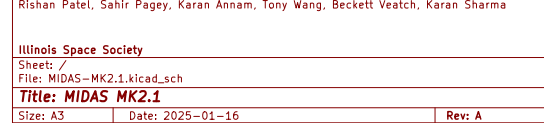
Extra Debug Pads



LEDs



MCU Boot Delay



Contributors: Thomas McManamen, Bryce Mikos, Aaron Adaya, Griffin Kelley, Gary Kanyuh, Rishan Patel, Sahir Pagey, Karan Annam, Tony Wang, Beckett Veatch, Karan Sharma

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Sheet: MIDAS-MK2.1.kicad_sch

Title: MIDAS-MK2.1

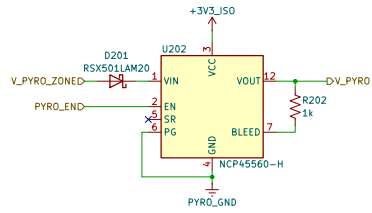
Size: A3 Date: 2025-01-16

KiCad E.D.A. 8.0.5

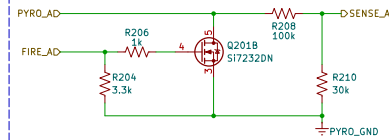
Rev: A

Id: 1/5

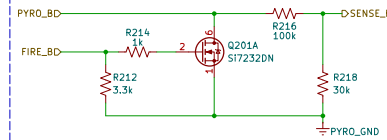
Global Enable & Reverse Polarity Protection



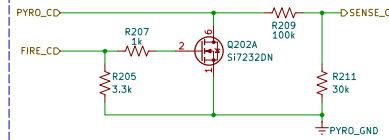
Pyro Channel A



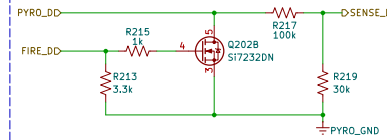
Pyro Channel B



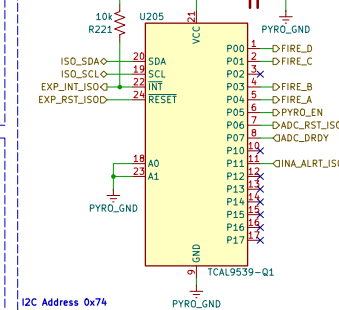
Pyro Channel C



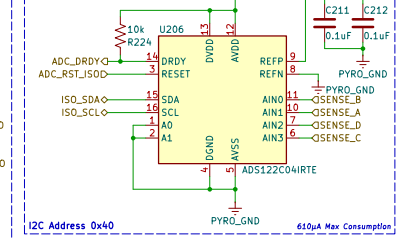
Pyro Channel D



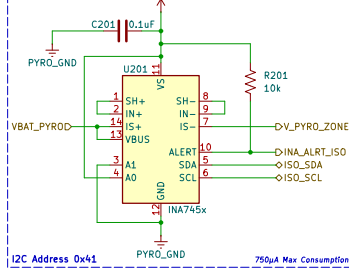
Pyro GPIO Expander TCAL9539-Q1



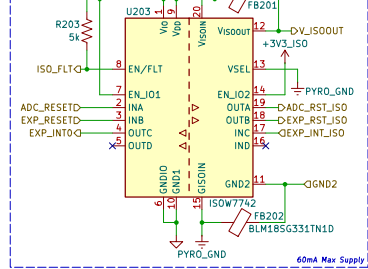
ADC Expander ADS122C04



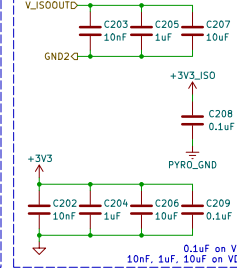
Pyro Battery Voltage Monitoring INA745B



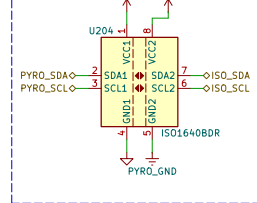
Power Isolation ISOW7742



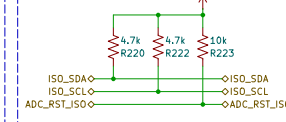
Power Isolation Decoupling Capacitors ISOW7742



I2C Isolation ISO1640



Pull-Up Resistors



ISO Power Debug Pin



Contributors: Dylan Gasaway, Jackie Li, Linus Mitchell, Lucas Lessard, Rithik Mehta, Samuel Wang, Ajay Nagi Reddy Kumdam, Arnab Goyal, Thomas McManamen

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Sheet: /Pyro Circuitry/

File: MIDAS-MK2.1-Pyro.kicad_sch

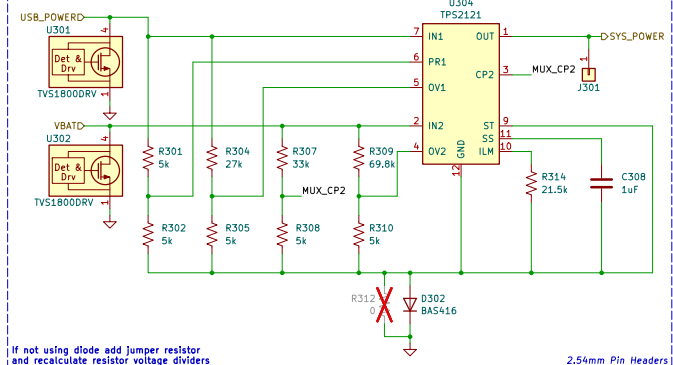
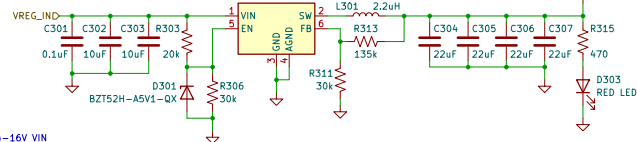
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Size: A3 Date: 2025-01-16

KiCad E.D.A. 8.0.5

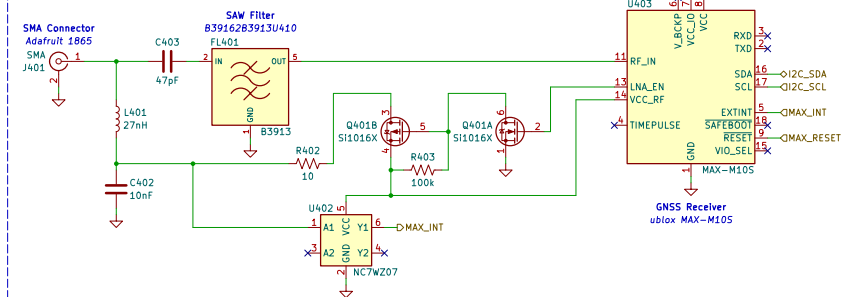
Rev: A

Id: 2/5

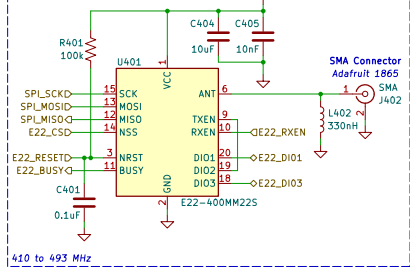


Rev: A
Id: 3/5

GNSS



LoRa Transceiver



Contributors: Thomas McManamen

Illinois Space Society

Sheet: /RF/
File: MIDAS-MK2.1-RF.kicad_sch

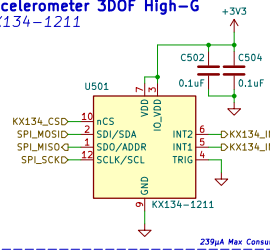
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Size: A3 | Date: 2025-01-16

KiCad E.D.A. 8.0.5

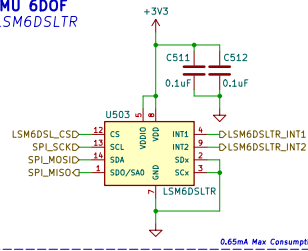
Rev: A
Id: 4/5

Accelerometer 3DOF High-G KX134-1211



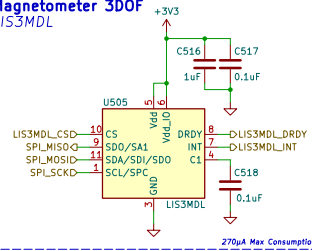
239uA Max Consumption

IMU 6DOF LSM6DSLTR



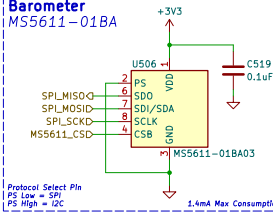
0.65mA Max Consumption

Magnetometer 3DOF LIS3MDL



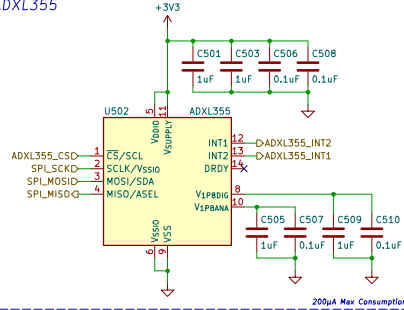
270uA Max Consumption

Barometer MS5611-01BA



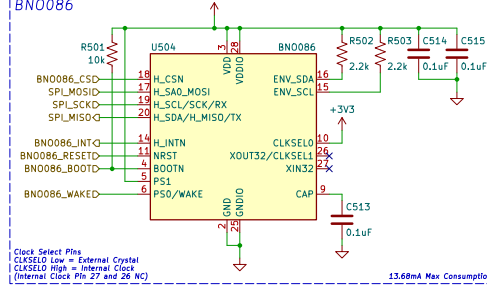
Protocol Select Pin
PS Low = SPI
PS High = I2C
1.4mA Max Consumption

Accelerometer 3DOF Low-G ADXL355



200uA Max Consumption

IMU 9DOF BN0086



13.68mA Max Consumption

Clock Select Pins
CLKSELO Low = External Crystal
CLKSELO High = Internal Clock
(Internal Clock Pin 27 and 28 NC)

Contributors: Peter Giannetos, Quinn Athas

Illinois Space Society

Sheet: /Sensors/
File: MIDAS-MK2.1-Sensors.kicad_sch

Title: **MIDAS Sensors MK2.1**

Size: A3 Date: 2025-01-16

KiCad E.D.A. 8.0.5

Rev: A
Id: 5/5