

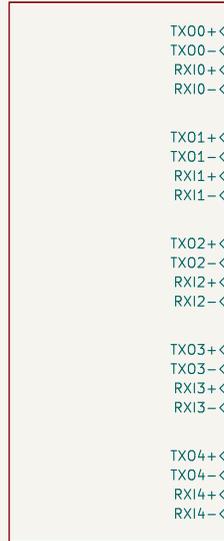
Power



File: power.kicad\_sch

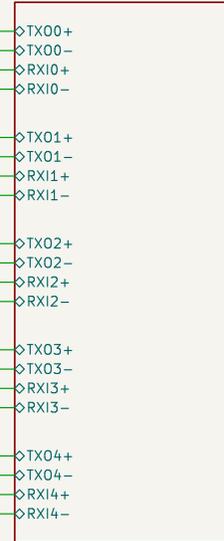
-  H1 MountingHole
-  H2 MountingHole

IP175G



File: IP175G.kicad\_sch

Magnetics



File: magnetics.kicad\_sch

TX00+ ◊ TX00+  
 TX00- ◊ TX00-  
 RX10+ ◊ RX10+  
 RX10- ◊ RX10-

TX01+ ◊ TX01+  
 TX01- ◊ TX01-  
 RX11+ ◊ RX11+  
 RX11- ◊ RX11-

TX02+ ◊ TX02+  
 TX02- ◊ TX02-  
 RX12+ ◊ RX12+  
 RX12- ◊ RX12-

TX03+ ◊ TX03+  
 TX03- ◊ TX03-  
 RX13+ ◊ RX13+  
 RX13- ◊ RX13-

TX04+ ◊ TX04+  
 TX04- ◊ TX04-  
 RX14+ ◊ RX14+  
 RX14- ◊ RX14-

// ATTEMPT THE IMPOSSIBLE.  
 // TECHNOLOGY FOR ALL.

World's smallest and cheapest 5 port unmanaged ethernet switch  
 utilizing the IC Plus IP175G and external magnetics

**MUREX Robotics [Max Liu and Byran Huang]**

Sheet: /  
 File: switch.kicad\_sch

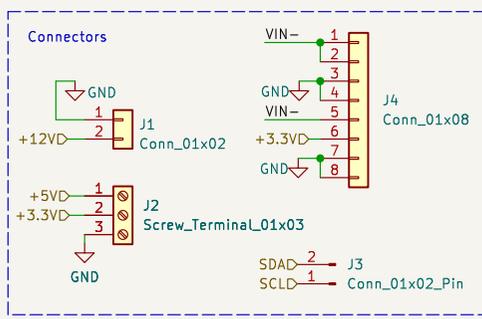
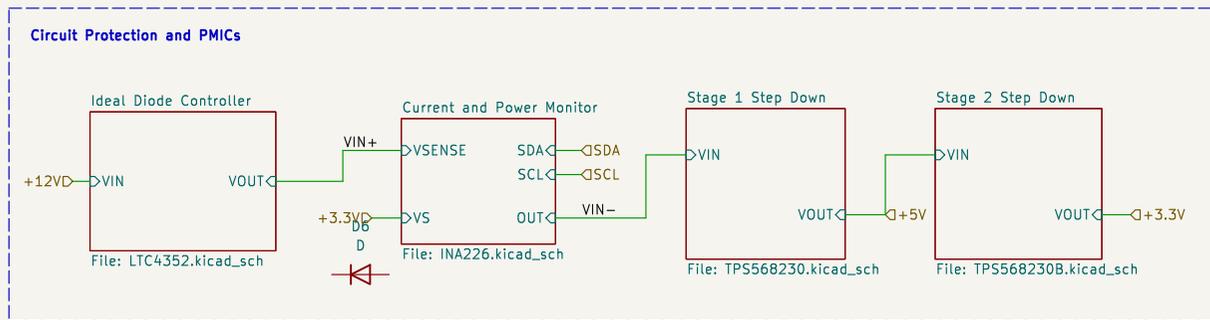
**Title: mrxSwitch**

Size: A4 Date: 2024-06-02

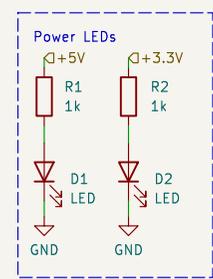
KiCad E.D.A. 9.0.0

**Rev: V2.0**

Id: 1/8



J1: Mega-Fit 76825-0002  
 J2: 1x3 5mm screw terminal  
 J4: Micro-Fit 0430450821



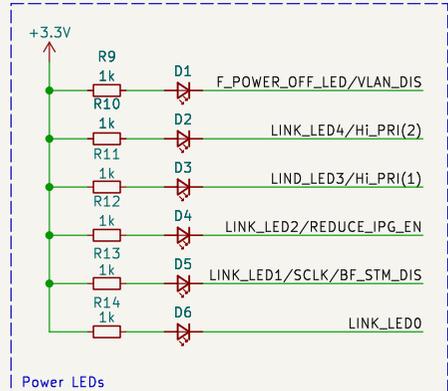
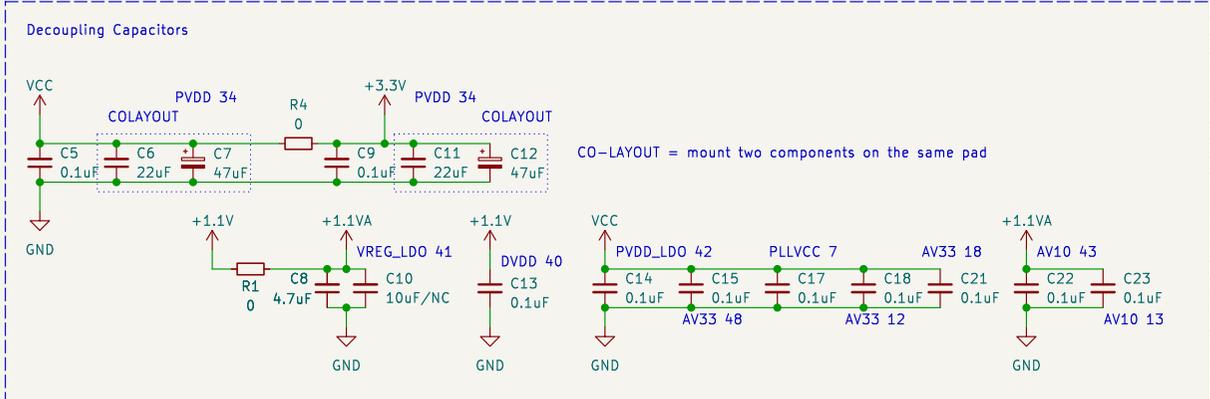
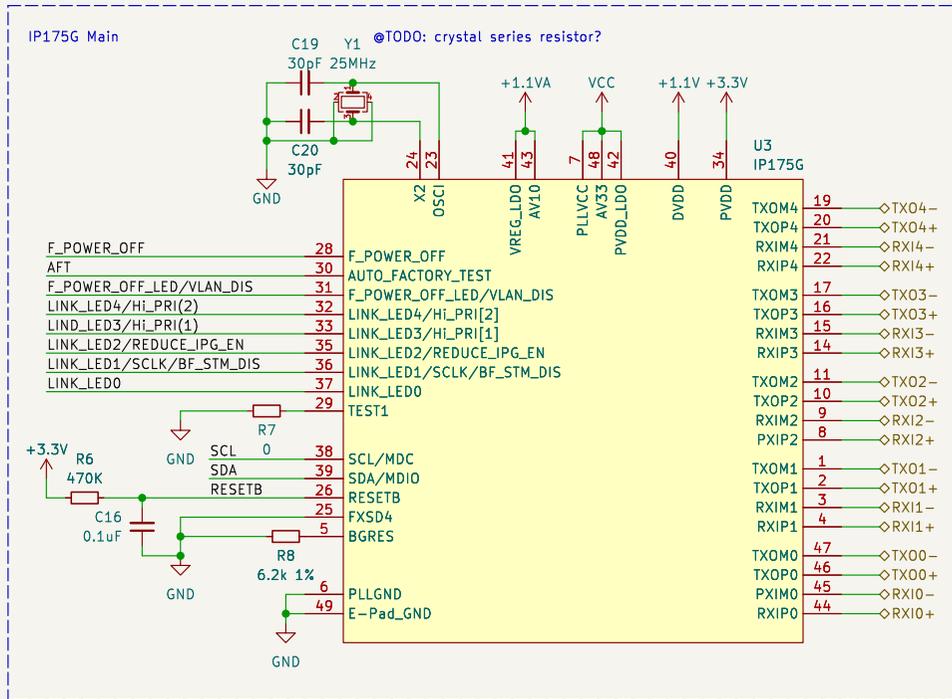
- H1 MountingHole
- H2 MountingHole

The MUREX Power Board is the world's smallest open-source dual output, high power module designed for ROV applications and other 12V/5V/3.3V DC systems.  
 // THINK DIFFERENT, THINK MUREX.  
 // INNOVATION IS OUR OBSESSION.  
**MUREX Robotics [Max Liu]**

Sheet: /Power/  
 File: power.kicad\_sch

**Title: Power Board**

Size: A4	Date: 2023-11-27	<b>Rev: V2.0</b>
KiCad E.D.A. 9.0.0		Id: 2/8

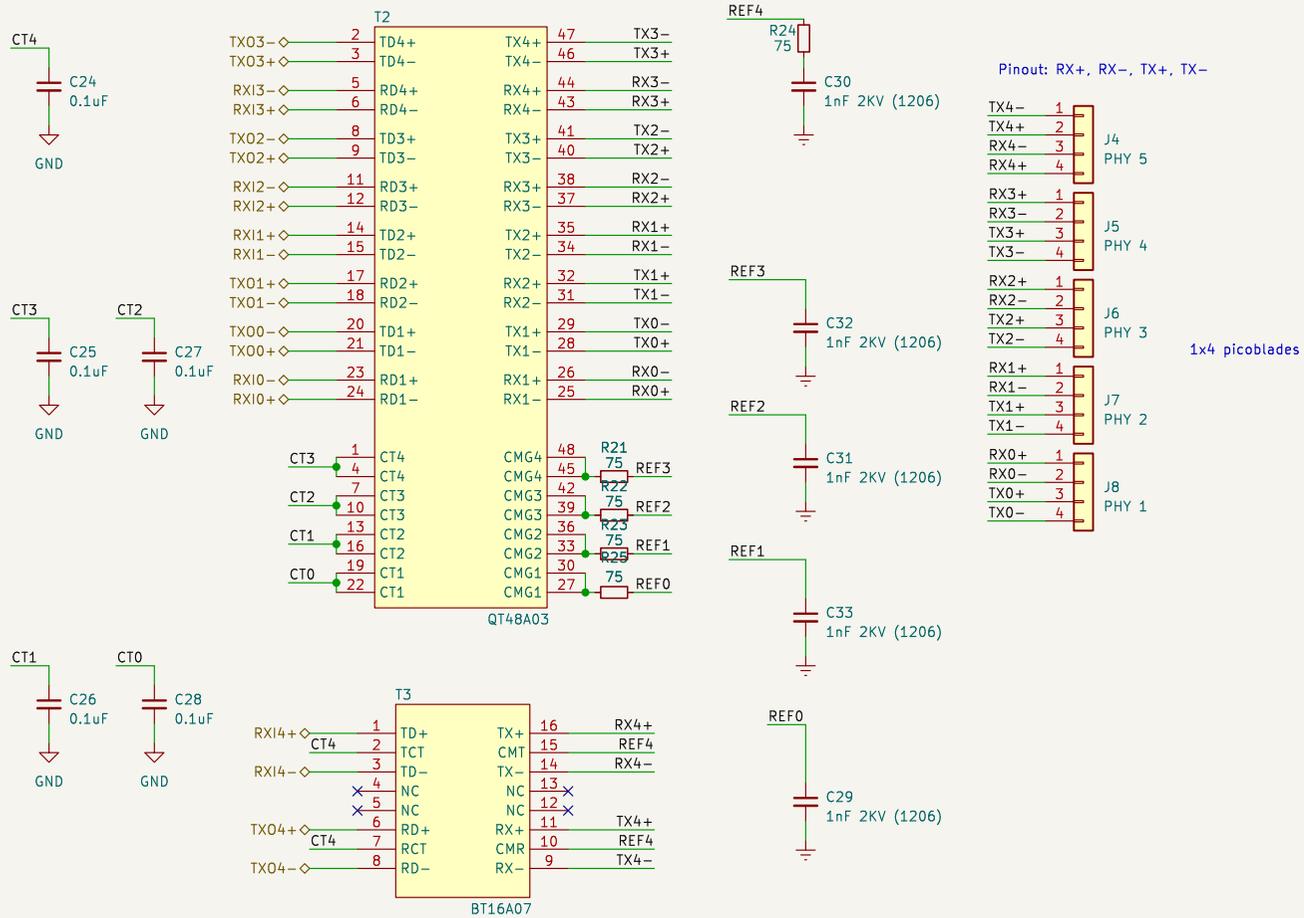


/// ATTEMPT THE IMPOSSIBLE.  
 /// TECHNOLOGY FOR ALL.  
 World's smallest and cheapest 5 port unmanaged ethernet switch  
 utilizing the IC Plus IP175G and external magnetics  
**MUREX Robotics [Byran Huang and Max Liu]**

Sheet: /IP175G/  
 File: IP175G.kicad\_sch

**Title: mrxSwitch**

Size: A4	Date: 2024-06-02	Rev: V2.0
KiCad E.D.A. 9.0.0		Id: 3/8



/// ATTEMPT THE IMPOSSIBLE.  
 /// TECHNOLOGY FOR ALL.  
 World's smallest and cheapest 5 port unmanaged ethernet switch  
 utilizing the IC Plus IP175G and external magnetics  
**MUREX Robotics [Byran Huang and Max Liu]**

Sheet: /Magnetics/  
 File: magnetics.kicad\_sch

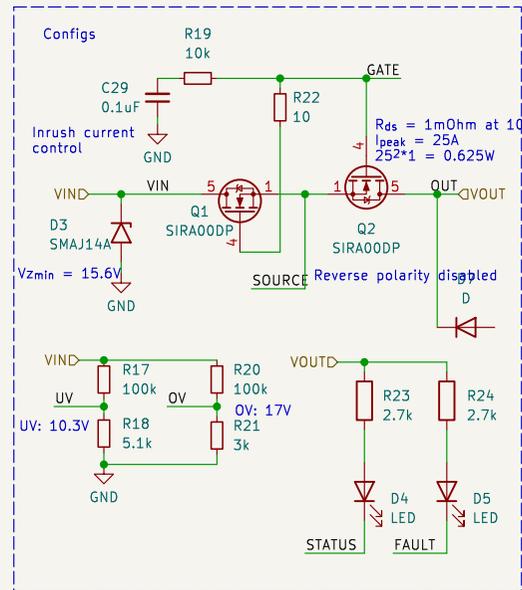
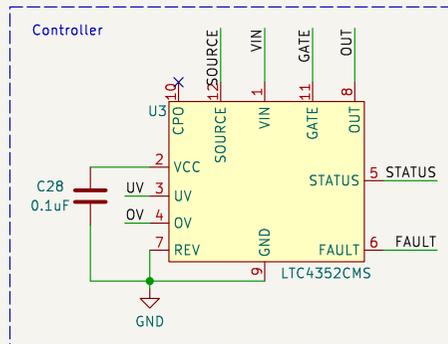
**Title: mrxSwitch**

Size: A4 Date: 2024-06-02

KiCad E.D.A. 9.0.0

Rev: V2.0

Id: 4/8



LED State		Ideal Diode Operating State	
STATUS Green LED	FAULT Red LED	MOSFET	UV/OV
○	○	OFF	NO
●	○	ON	NO
○	●	OFF	YES
●	●	OPEN	NO

The MUREX Power Board is the world's smallest open-source dual output, high power module designed for ROV applications and other 12V/5V/3.3V DC systems.

// THINK DIFFERENT, THINK MUREX.

// INNOVATION IS OUR OBSESSION.

**MUREX Robotics [Max Liu]**

Sheet: /Power/Ideal Diode Controller/

File: LTC4352.kicad\_sch

**Title: Power Board**

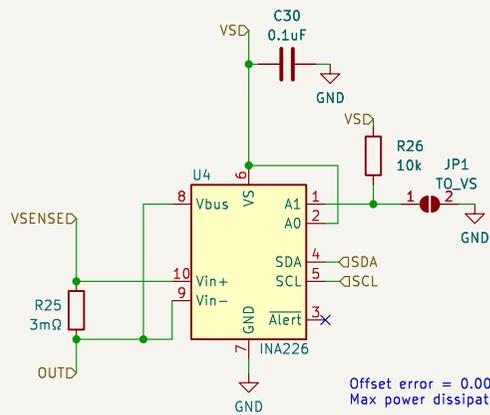
Size: A4

Date: 2023-11-27

KiCad E.D.A. 9.0.0

**Rev: V2.0**

Id: 5/8



Offset error =  $0.0025\text{mV} / (3\text{m}\Omega * 25\text{A}) = 0.003\%$   
 Max power dissipation =  $3\text{m}\Omega * (25\text{A})^2 = 1.875\text{W}$

Default Address: 0x45 | 0b1000101  
 A1 -> GND: 0x41 | 0b1000001

The MUREX Power Board is the world's smallest open-source dual output, high power module designed for ROV applications and other 12V/5V/3.3V DC systems.

// THINK DIFFERENT, THINK MUREX.

// INNOVATION IS OUR OBSESSION.

**MUREX Robotics [Max Liu]**

Sheet: /Power/Current and Power Monitor/

File: INA226.kicad\_sch

**Title: Power Board**

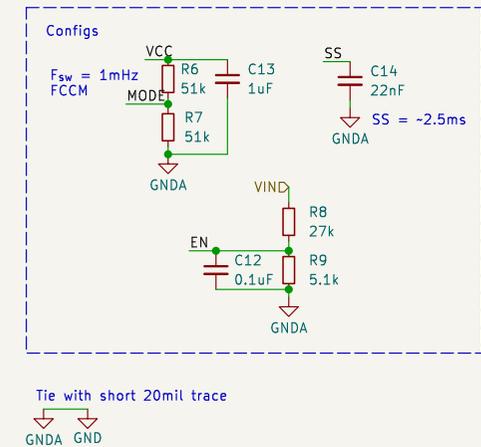
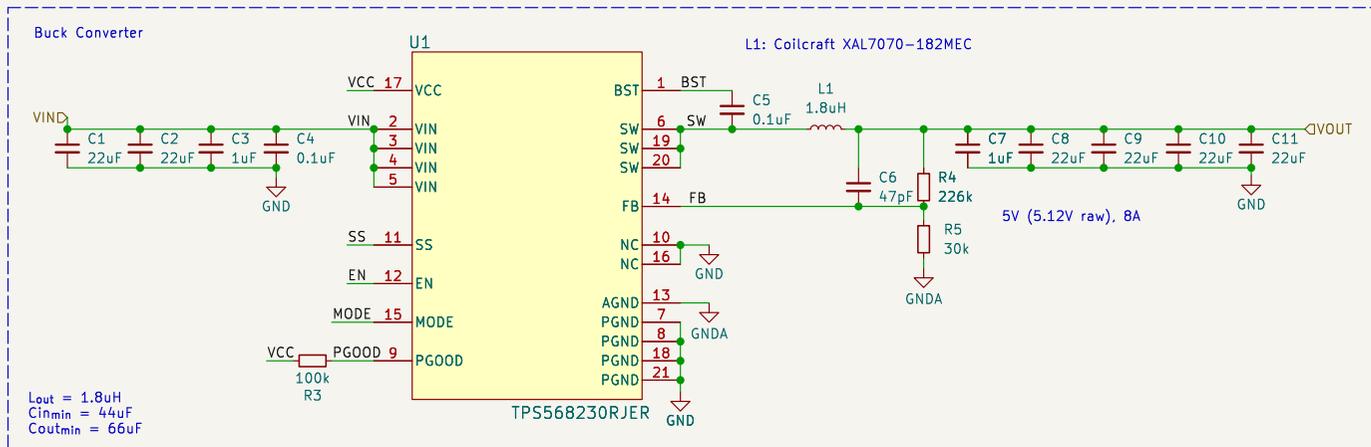
Size: A4

Date: 2023-11-27

Rev: V2.0

KiCad E.D.A. 9.0.0

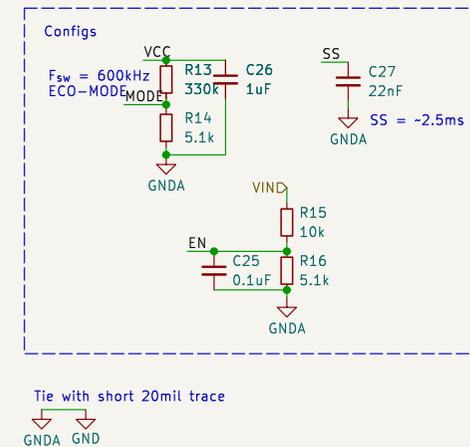
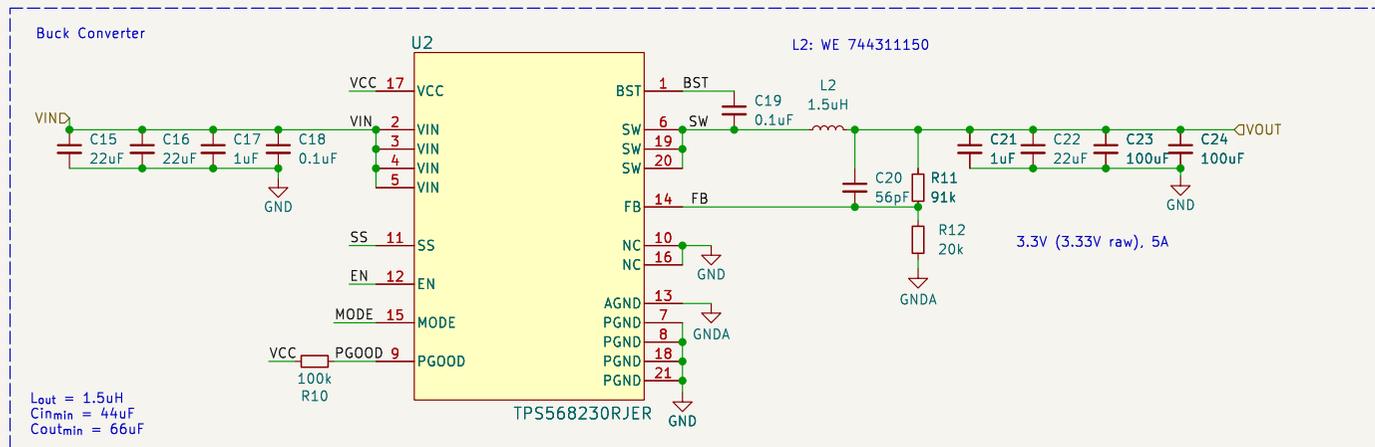
Id: 6/8



The MUREX Power Board is the world's smallest open-source dual output, high power module designed for ROV applications and other 12V/5V/3.3V DC systems.  
 // THINK DIFFERENT, THINK MUREX.  
 // INNOVATION IS OUR OBSESSION.  
**MUREX Robotics [Max Liu]**  
 Sheet: /Power/Stage 1 Step Down/  
 File: TPS568230.kicad\_sch

**Title: Power Board**

Size: A4	Date: 2023-11-27	Rev: V2.0
KiCad E.D.A. 9.0.0		Id: 7/8



The MUREX Power Board is the world's smallest open-source dual output, high power module designed for ROV applications and other 12V/5V/3.3V DC systems.  
 // THINK DIFFERENT, THINK MUREX.  
 // INNOVATION IS OUR OBSESSION.  
**MUREX Robotics [Max Liu]**  
 Sheet: /Power/Stage 2 Step Down/  
 File: TPS568230B.kicad\_sch

<b>Title: Power Board</b>	
Size: A4	Date: 2023-11-27
KiCad E.D.A. 9.0.0	Rev: V2.0
	Id: 8/8