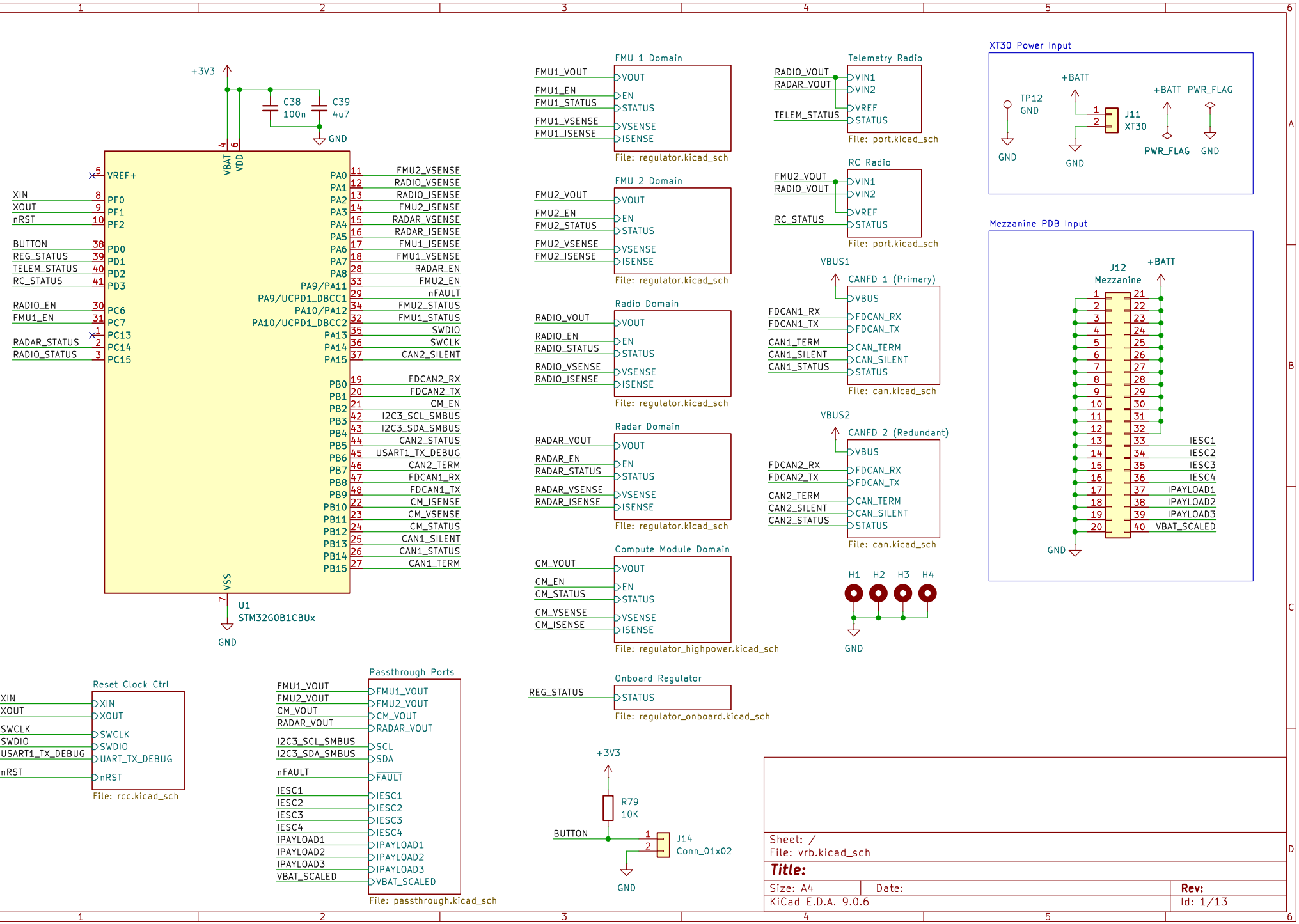
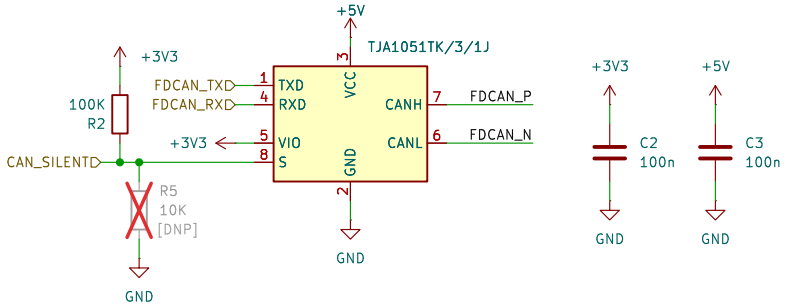
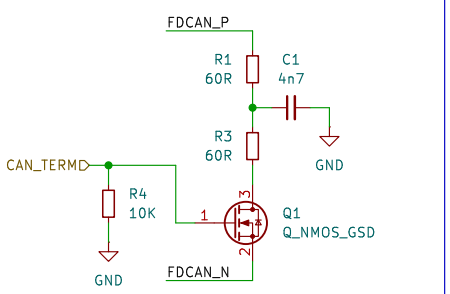

+3V3
C38
100n
C39
4u7
GND
VBAT
VDD
VREF+
XIN
XOUT
nRST
BUTTON
REG_STATUS
TELEM_STATUS
RC_STATUS
RADIO_EN
FMU1_EN
RADAR_STATUS
RADIO_STATUS
PF0
PF1
PF2
PD0
PD1
PD2
PD3
PC6
PC7
PC13
PC14
PC15
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PA8
PA9/PA11
PA9/UCPD1_DBCC1
PA10/PA12
PA10/UCPD1_DBCC2
PA13
PA14
PA15
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PB8
PB9
PB10
PB11
PB12
PB13
PB14
PB15
FMU2_VSENSE
RADIO_VSENSE
RADIO_ISENSE
FMU2_ISENSE
RADAR_VSENSE
RADAR_ISENSE
FMU1_ISENSE
FMU1_VSENSE
RADAR_EN
FMU2_EN
nFAULT
FMU2_STATUS
FMU1_STATUS
SWDIO
SWCLK
CAN2_SILENT
FDCAN2_RX
FDCAN2_TX
CM_EN
I2C3_SCL_SMBUS
I2C3_SDA_SMBUS
CAN2_STATUS
USART1_TX_DEBUG
CAN2_TERM
FDCAN1_RX
FDCAN1_TX
CM_ISENSE
CM_VSENSE
CM_STATUS
CAN1_SILENT
CAN1_STATUS
CAN1_TERM
VSS
U1
STM32G0B1CBUx
GND
FMU 1 Domain
FMU1_VOUT
FMU1_EN
FMU1_STATUS
FMU1_VSENSE
FMU1_ISENSE
VOUT
EN
STATUS
VSENSE
ISENSE
File: regulator.kicad_sch
FMU 2 Domain
FMU2_VOUT
FMU2_EN
FMU2_STATUS
FMU2_VSENSE
FMU2_ISENSE
File: regulator.kicad_sch
Radio Domain
RADIO_VOUT
RADIO_EN
RADIO_STATUS
RADIO_VSENSE
RADIO_ISENSE
File: regulator.kicad_sch
Radar Domain
RADAR_VOUT
RADAR_EN
RADAR_STATUS
RADAR_VSENSE
RADAR_ISENSE
File: regulator.kicad_sch
Compute Module Domain
CM_VOUT
CM_EN
CM_STATUS
CM_VSENSE
CM_ISENSE
File: regulator_highpower.kicad_sch
Onboard Regulator
REG_STATUS
STATUS
File: regulator_onboard.kicad_sch
Telemetry Radio
RADIO_VOUT
RADAR_VOUT
TELEM_STATUS
VIN1
VIN2
VREF
STATUS
File: port.kicad_sch
RC Radio
FMU2_VOUT
RADIO_VOUT
RC_STATUS
VIN1
VIN2
VREF
STATUS
File: port.kicad_sch
VBUS1
CANFD 1 (Primary)
VBUS
FDCAN1_RX
FDCAN1_TX
CAN1_TERM
CAN1_SILENT
CAN1_STATUS
FDCAN_RX
FDCAN_TX
CAN_TERM
CAN_SILENT
STATUS
File: can.kicad_sch
VBUS2
CANFD 2 (Redundant)
VBUS
FDCAN2_RX
FDCAN2_TX
CAN2_TERM
CAN2_SILENT
CAN2_STATUS
FDCAN_RX
FDCAN_TX
CAN_TERM
CAN_SILENT
STATUS
File: can.kicad_sch
H1
H2
H3
H4
GND
XT30 Power Input
TP12
GND
+BATT
J11
XT30
+BATT
PWR_FLAG
PWR_FLAG
GND
GND
Mezzanine PDB Input
J12
Mezzanine
+BATT
IESC1
IESC2
IESC3
IESC4
IPAYLOAD1
IPAYLOAD2
IPAYLOAD3
VBAT_SCALED
GND
Reset Clock Ctrl
XIN
XOUT
SWCLK
SWDIO
USART1_TX_DEBUG
nRST
File: rcc.kicad_sch
Passthrough Ports
FMU1_VOUT
FMU2_VOUT
CM_VOUT
RADAR_VOUT
I2C3_SCL_SMBUS
I2C3_SDA_SMBUS
nFAULT
IESC1
IESC2
IESC3
IESC4
IPAYLOAD1
IPAYLOAD2
IPAYLOAD3
VBAT_SCALED
SCL
SDA
FAULT
File: passthrough.kicad_sch
+3V3
R79
10K
BUTTON
J14
Conn_01x02
GND
Sheet: /
File: vrb.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.6
Id: 1/13

CAN-FD Transceiver

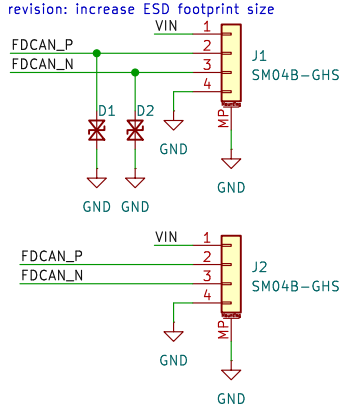


120 Ohm Termination

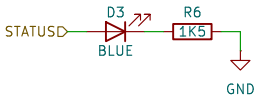


JST-GH 4 Pin Connector

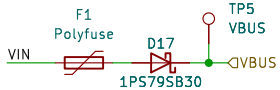
Next revision: increase ESD footprint size



Status LED



VBUS Protection



Sheet: /CANFD 2 (Redundant)/ File: can.kicad_sch		
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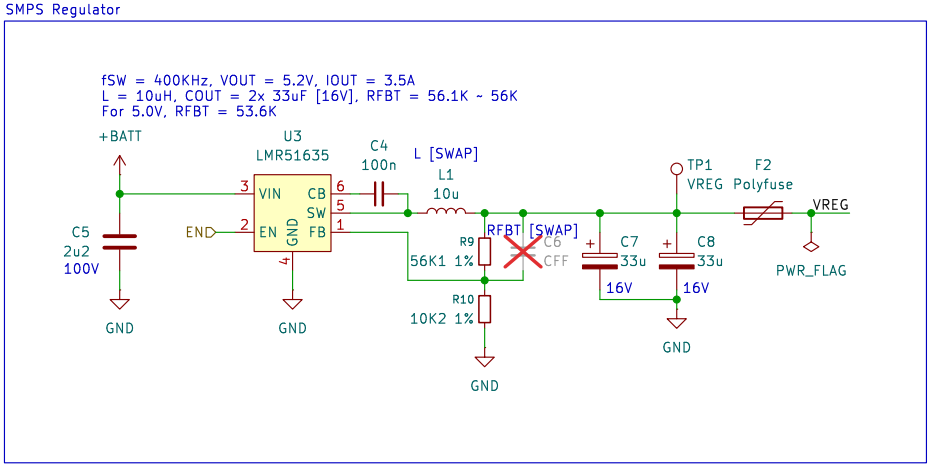
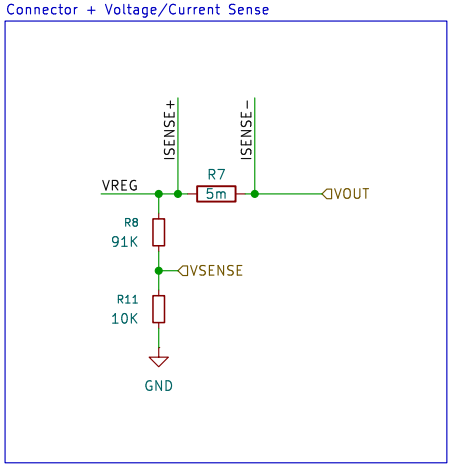
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 2/13

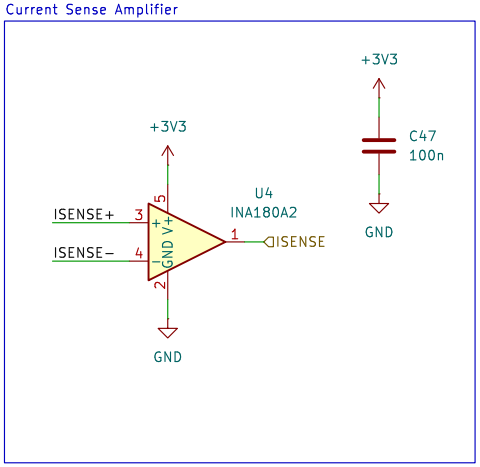
SMPS Regulator



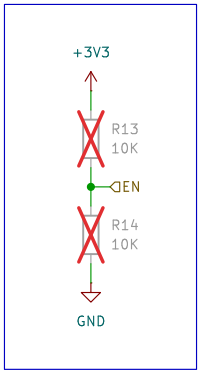
Connector + Voltage/Current Sense



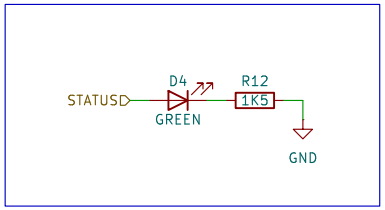
Current Sense Amplifier



Enable Override



Status LED



Sheet: /FMU 1 Domain/ File: regulator.kicad_sch		
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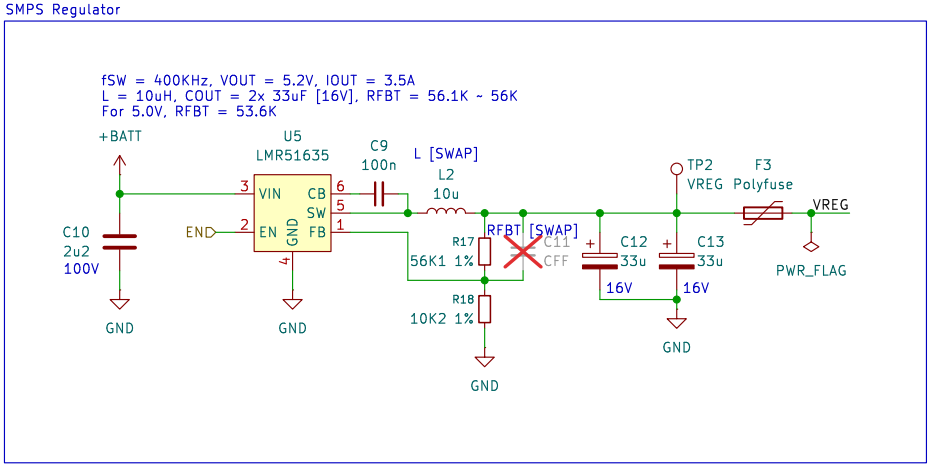
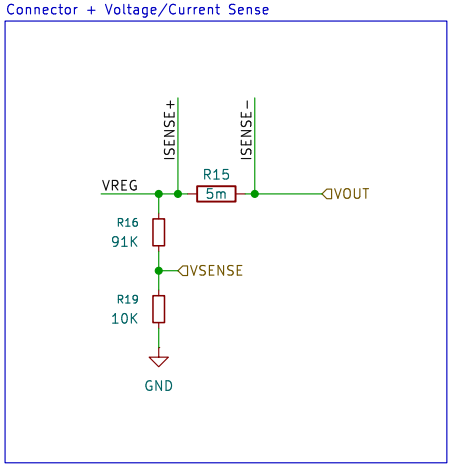
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 3/13

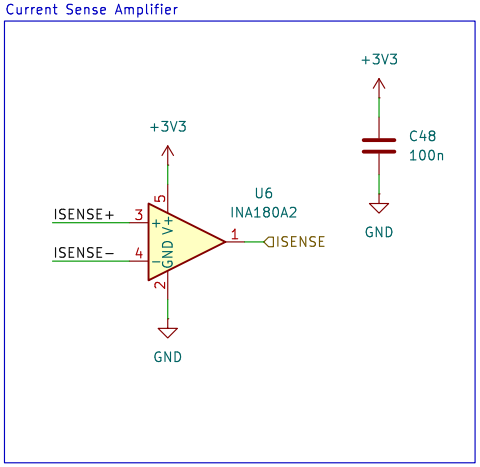
SMPS Regulator



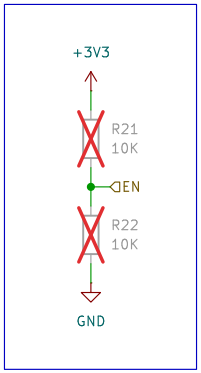
Connector + Voltage/Current Sense



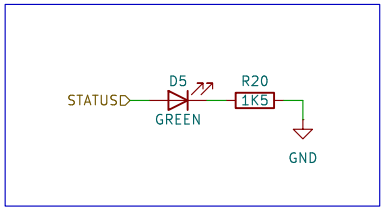
Current Sense Amplifier



Enable Override



Status LED



Sheet: /FMU 2 Domain/ File: regulator.kicad_sch		
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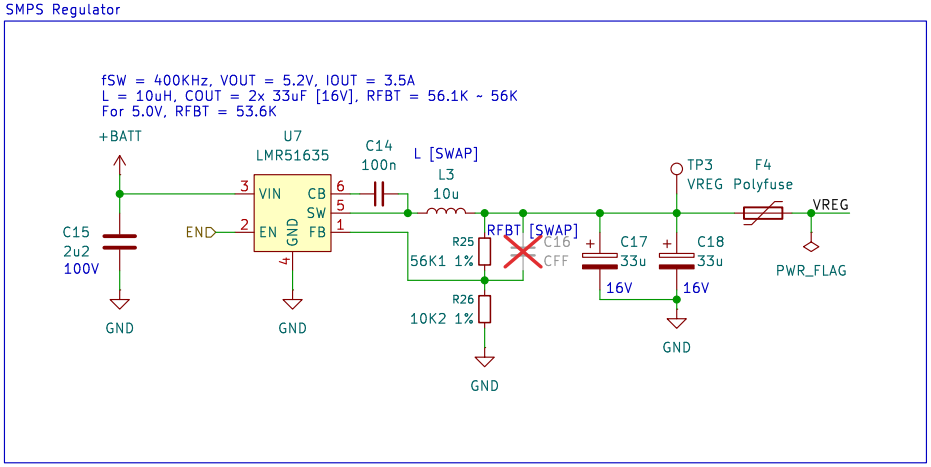
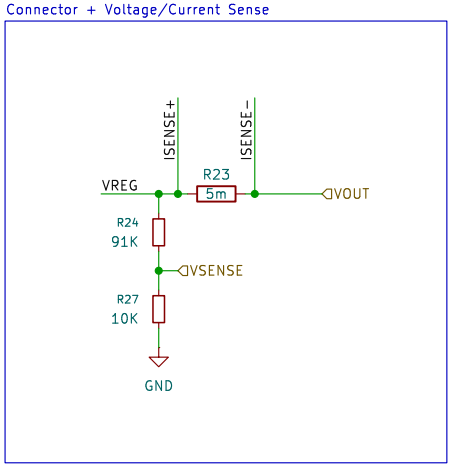
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 4/13

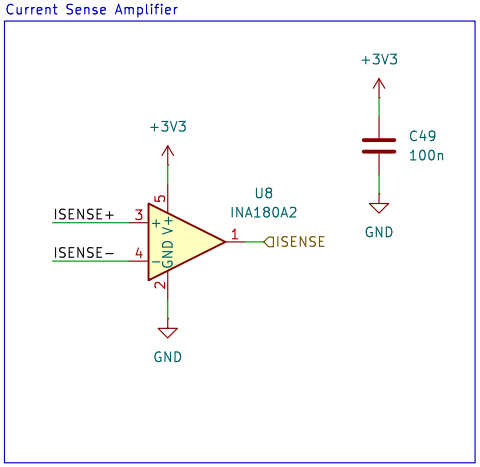
SMPS Regulator



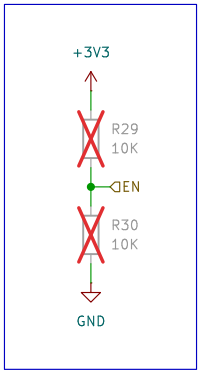
Connector + Voltage/Current Sense



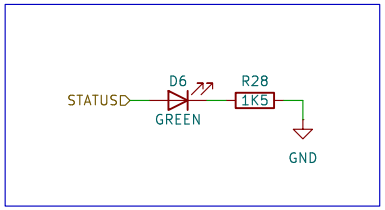
Current Sense Amplifier



Enable Override



Status LED



Sheet: /Radio Domain/ File: regulator.kicad_sch		
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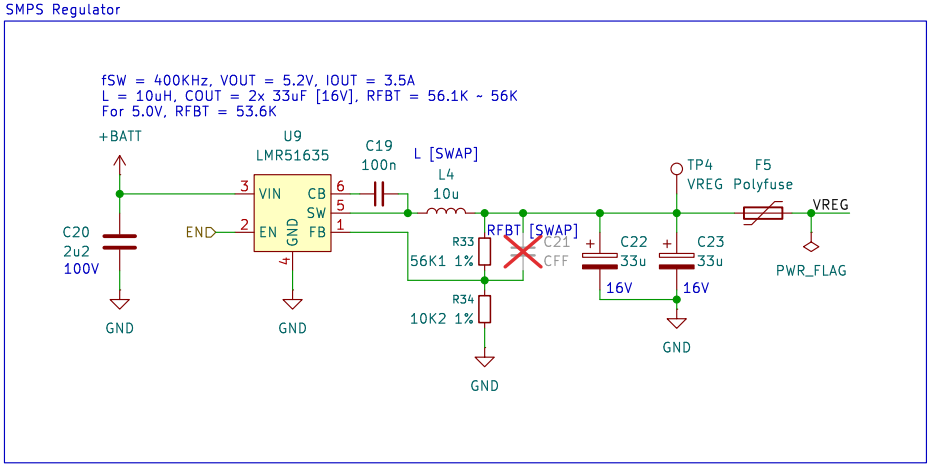
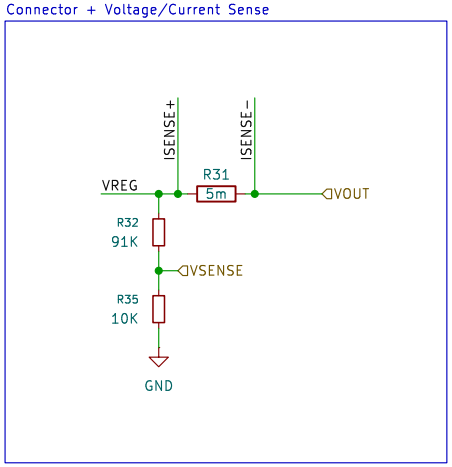
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 5/13

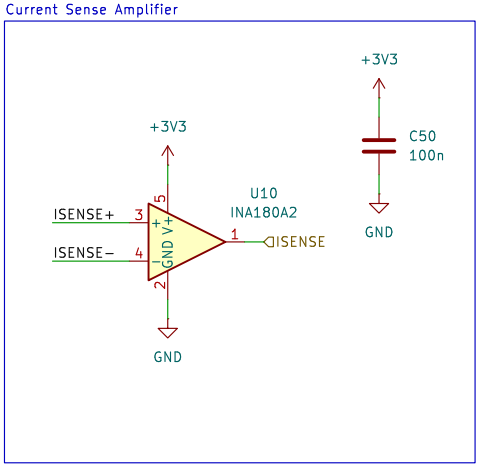
SMPS Regulator



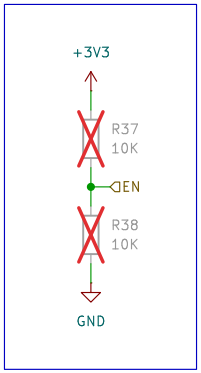
Connector + Voltage/Current Sense



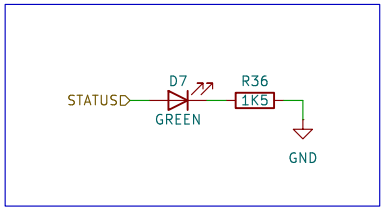
Current Sense Amplifier



Enable Override



Status LED

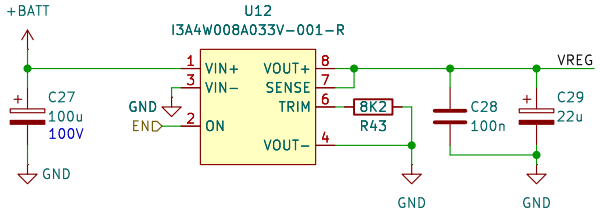


Sheet: /Radar Domain/ File: regulator.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 6/13

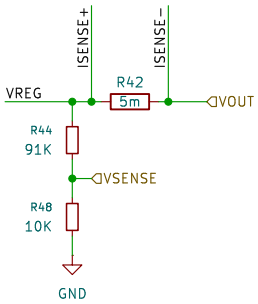
SMPS Regulator (1/32 Brick DC/DC)

Vref = 0.6V
Vonom = 2.59V
F = 36500
G = 511

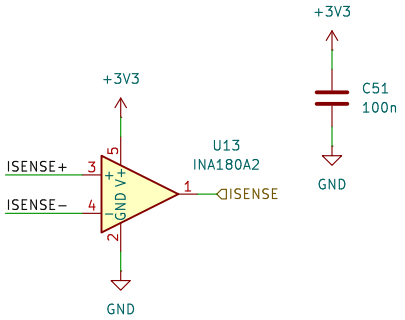
Rext = (Vref * F) / (Vout - Vonom) - G
Vout = 5.1V -> 8.214K
Vout = 18V -> 910



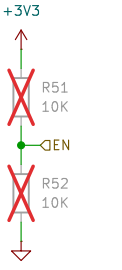
Connector + Voltage/Current Sense



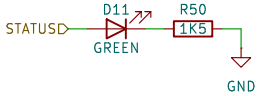
Current Sense Amplifier



Enable Override



Status LED



Sheet: /Compute Module Domain/ File: regulator_highpower.kicad_sch		
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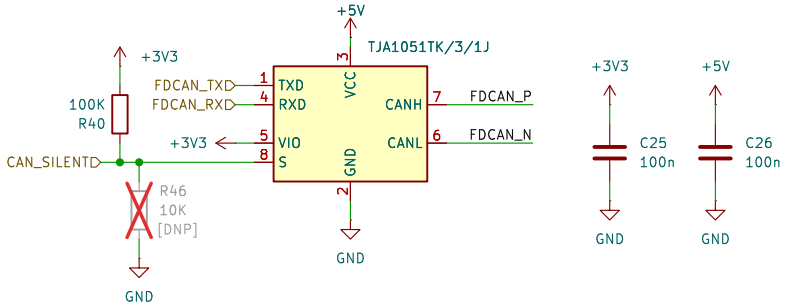
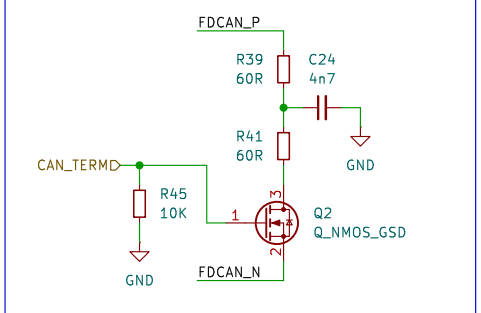
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 7/13

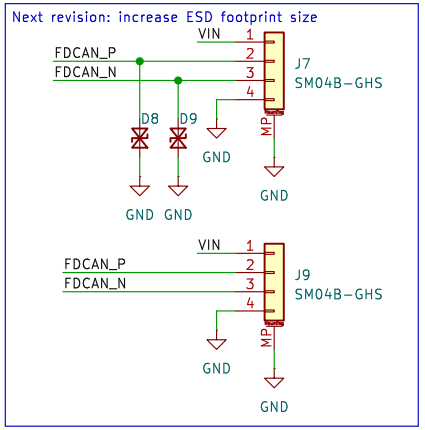
CAN-FD Transceiver



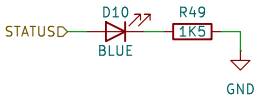
120 Ohm Termination



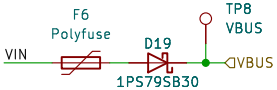
JST-GH 4 Pin Connector



Status LED



VBUS Protection



Sheet: /CANFD 1 (Primary)/ File: can.kicad_sch		
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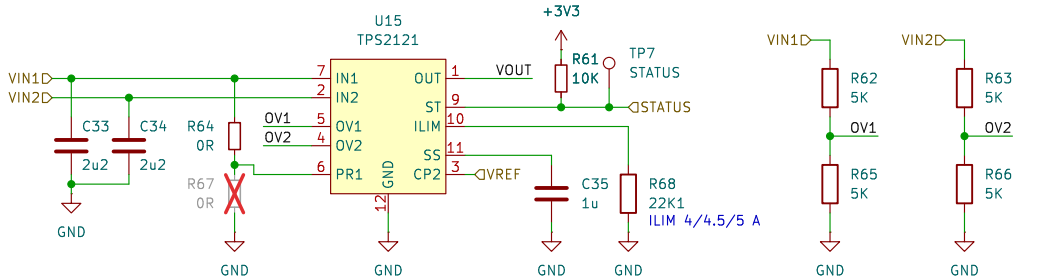
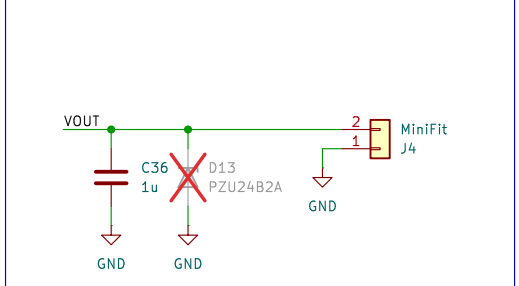
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 7/13

Power Supply Mux



Molex MiniFit Output



Sheet: /RC Radio/ File: port.kicad_sch		
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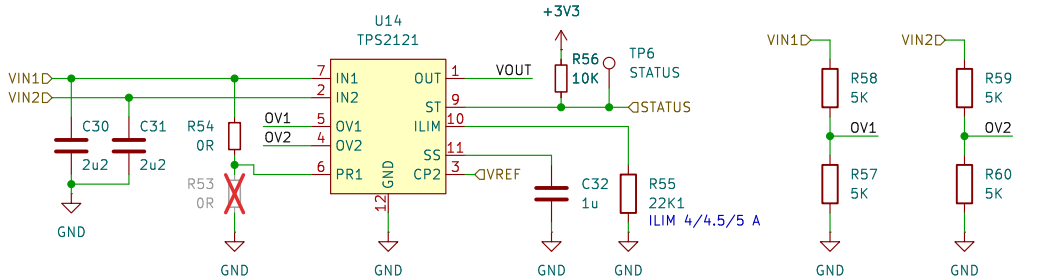
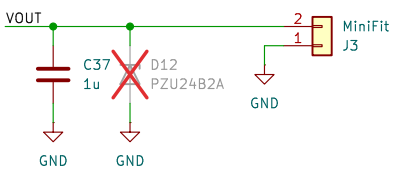
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 8/13

Power Supply Mux



Molex MiniFit Output



Sheet: /Telemetry Radio/		
File: port.kicad_sch		
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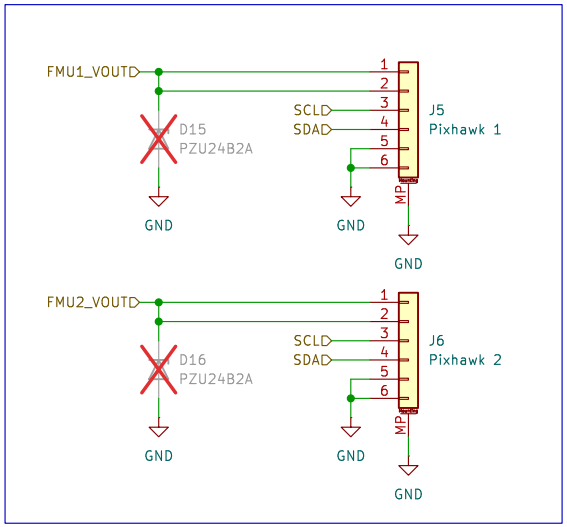
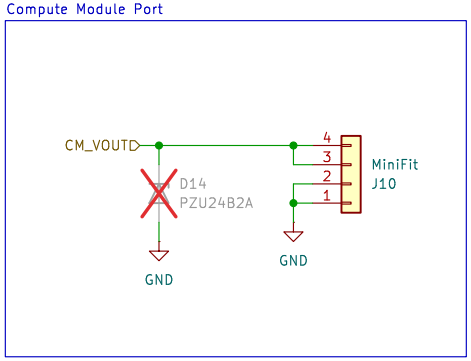
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 9/13

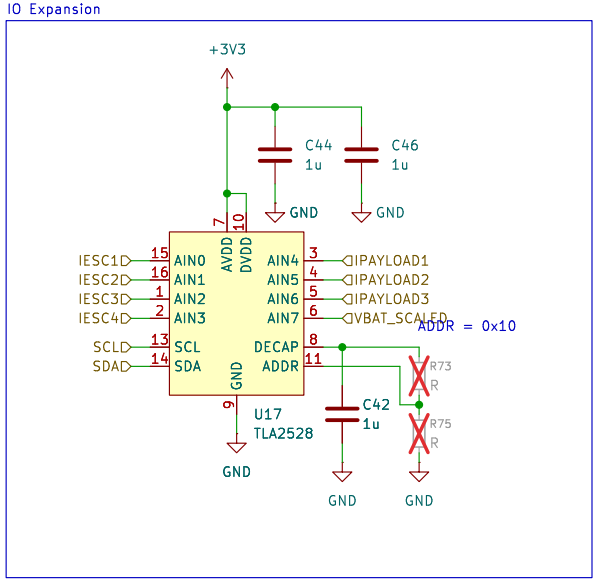
Pixhawk ClikMate Ports



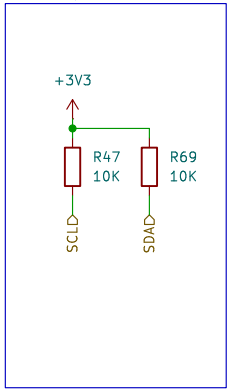
Compute Module Port



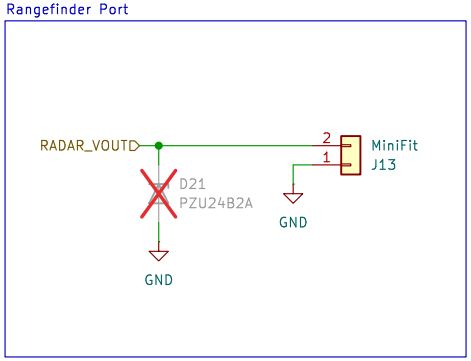
IO Expansion



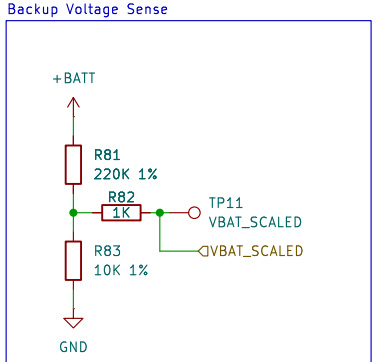
I2C Pullup



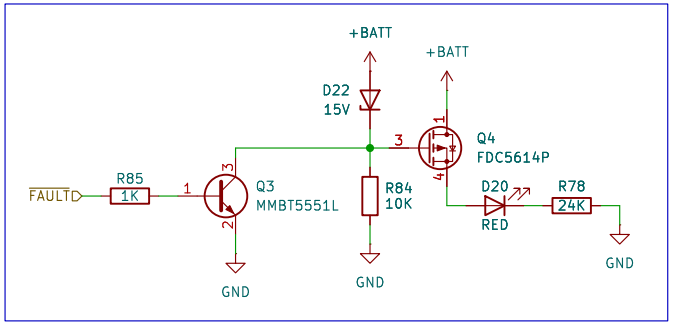
Rangefinder Port



Backup Voltage Sense



Fault LED



FAULT LED INDICATOR — 50V with 3.3V MCU Control
LED ON (fault): MCU OFF or GPIO LOW
LED OFF (ok): MCU ON with GPIO HIGH (3.3V)

PROTECTION:

Zener D1 clamps Vgs to −15V (prevents gate overvoltage)

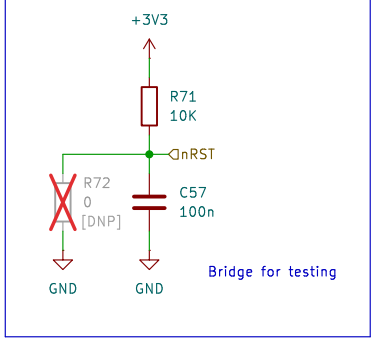
R2 pull-down ensures clean gate switchingNPN Q2 inverts logic
& isolates 3.3V from 50V railR3 limits base current to safe MCU levels

OPERATION:
GPIO LOW → Q2 OFF → R2 pulls gate LOW → Vgs = −15V → Q1 ON → LED ON
GPIO HIGH → Q2 ON → pulls gate HIGH → Vgs ≈ 0V → Q1 OFF → LED OFF

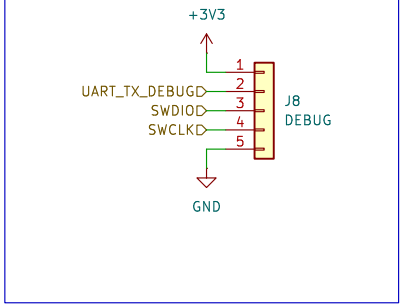
LED CURRENT: (50V − Vf_LED) / 24kΩ ≈ 2mA

Sheet: /Passthrough Ports/ File: passthrough.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 11/13

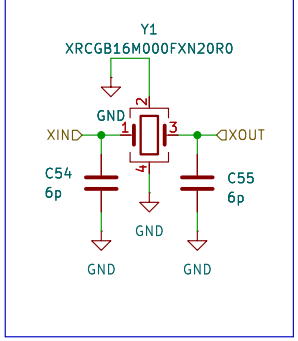
Reset Circuitry



Debug



16MHz Crystal



Sheet: /Reset Clock Ctrl/		
File: rcc.kicad_sch		
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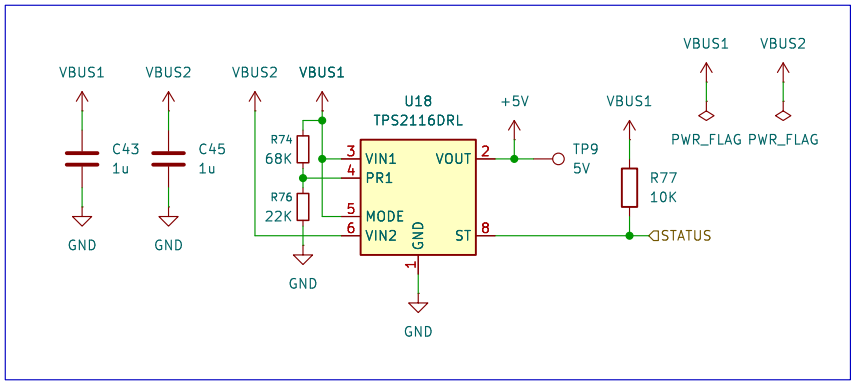
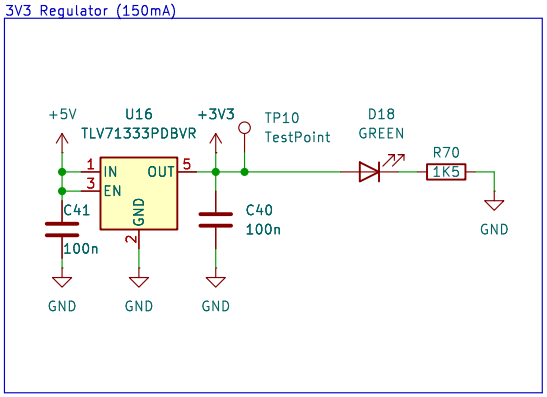
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.6		Id: 12/13

Power Mux



3V3 Regulator (150mA)



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KiCad E.D.A. 9.0.6		Id: 13/13