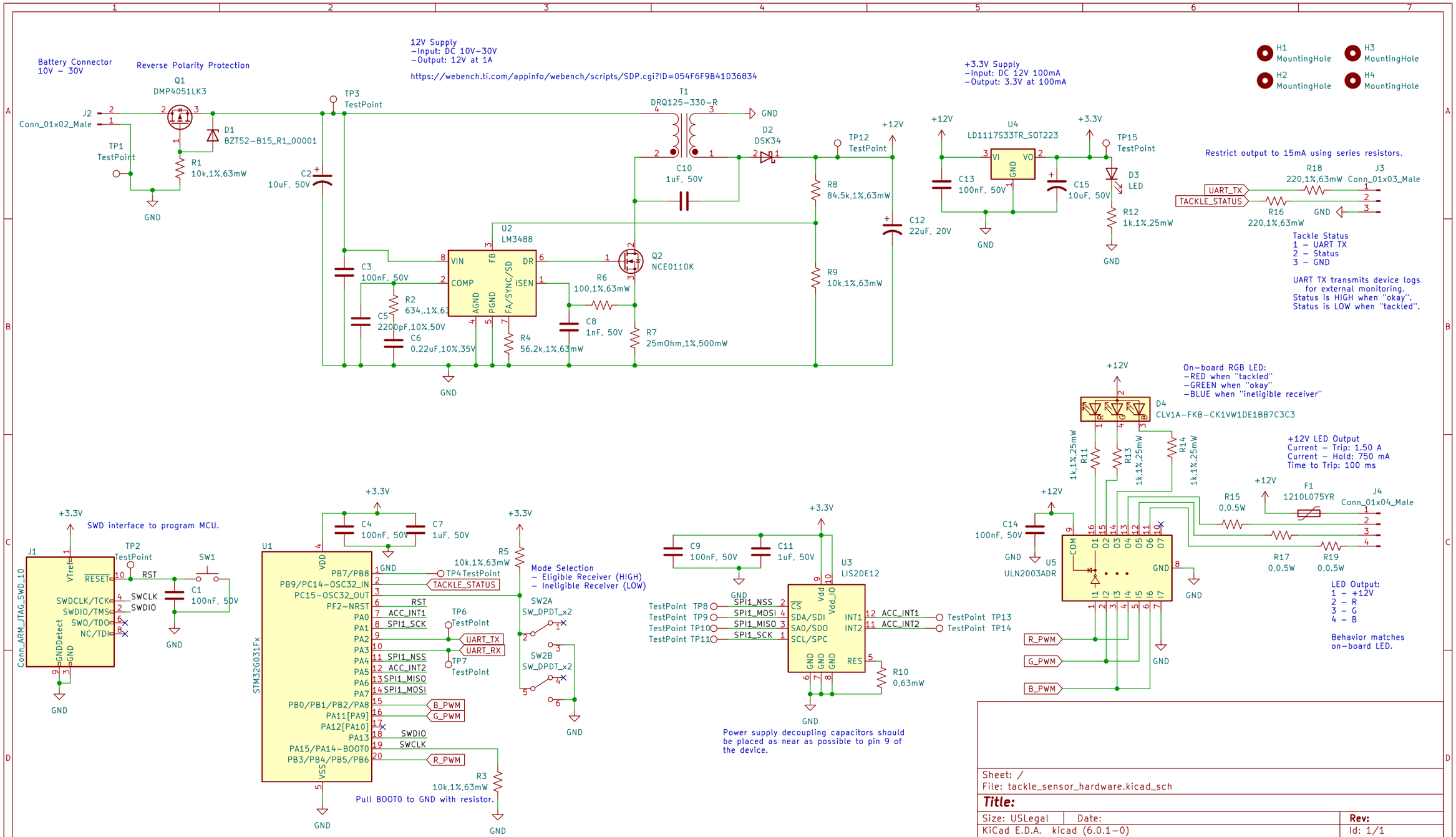
Battery Connector
10V – 30V
Reverse Polarity Protection
Q1
DMP4051LK3
J2
Conn_01x02_Male
TP1
TestPoint
D1
BZT52-B15_R1_00001
R1
10k,1%,63mW
GND
TP3
TestPoint
C2
10uF, 50V
12V Supply
–Input: DC 10V–30V
–Output: 12V at 1A
https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=054F6F9B41D36834
T1
DRQ125-330-R
D2
DSK34
C10
1uF, 50V
TP12
TestPoint
+12V
R8
84.5k,1%,63mW
R9
10k,1%,63mW
C12
22uF, 20V
U2
LM3488
VIN
COMP
FB
AGND
PGND
FA/SYNC/SD
DR
ISEN
Q2
NCE0110K
C3
100nF, 50V
R2
634,.1%,63
C5
2200pF,10%,50V
C6
0.22uF,10%,35V
R6
100,1%,63mW
C8
1nF, 50V
R4
56.2k,1%,63mW
R7
25mOhm,1%,500mW
+3.3V Supply
–Input: DC 12V 100mA
–Output: 3.3V at 100mA
U4
LD1117S33TR_SOT223
VI
VO
GND
C13
100nF, 50V
C15
10uF, 50V
+3.3V
TP15
TestPoint
D3
LED
R12
1k,1%,25mW
H1
MountingHole
H2
MountingHole
H3
MountingHole
H4
MountingHole
Restrict output to 15mA using series resistors.
R18
220,1%,63mW
J3
Conn_01x03_Male
UART_TX
TACKLE_STATUS
R16
220,1%,63mW
Tackle Status
1 – UART TX
2 – Status
3 – GND
UART TX transmits device logs
for external monitoring.
Status is HIGH when "okay".
Status is LOW when "tackled".
On-board RGB LED:
–RED when "tackled"
–GREEN when "okay"
–BLUE when "ineligible receiver"
D4
CLV1A-FKB-CK1VW1DE1BB7C3C3
R11
1k,1%,25mW
R13
1k,1%,25mW
R14
1k,1%,25mW
+12V LED Output
Current – Trip: 1.50 A
Current – Hold: 750 mA
Time to Trip: 100 ms
F1
1210L075YR
J4
Conn_01x04_Male
R15
0,0,5W
R17
0,0,5W
R19
0,0,5W
C14
100nF, 50V
U5
ULN2003ADR
COM
O1
O2
O3
O4
O5
O6
O7
R_PWM
G_PWM
B_PWM
LED Output:
1 – +12V
2 – R
3 – G
4 – B
Behavior matches
on-board LED.
+3.3V
SWD interface to program MCU.
J1
Conn_ARM_JTAG_SWD_10
VTref
RESET
SWDCLK/TCK
SWDIO/TMS
SWO/TDO
NC/TDI
GNDDetect
TP2
TestPoint
RST
SW1
C1
100nF, 50V
SWCLK
SWDIO
U1
STM32G031Fx
VDD
VSS
PB7/PB8
PB9/PC14-OSC32_IN
PC15-OSC32_OUT
PF2-NRST
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0/PB1/PB2/PA8
PA11[PA9]
PA12[PA10]
PA13
PA15/PA14-BOOT0
PB3/PB4/PB5/PB6
ACC_INT1
SPI1_SCK
SPI1_NSS
ACC_INT2
SPI1_MISO
SPI1_MOSI
B_PWM
G_PWM
R_PWM
TP4 TestPoint
TACKLE_STATUS
TP6
TestPoint
UART_TX
UART_RX
TP7
TestPoint
C4
100nF, 50V
C7
1uF, 50V
R5
10k,1%,63mW
Mode Selection
– Eligible Receiver (HIGH)
– Ineligible Receiver (LOW)
SW2A
SW_DPDT_x2
SW2B
SW_DPDT_x2
R3
10k,1%,63mW
Pull BOOT0 to GND with resistor.
C9
100nF, 50V
C11
1uF, 50V
U3
LIS2DE12
CS
SDA/SDI
SA0/SDO
SCL/SPC
Vdd
Vdd_IO
INT1
INT2
RES
TestPoint TP8
TestPoint TP9
TestPoint TP10
TestPoint TP11
TestPoint TP13
TestPoint TP14
R10
0,63mW
Power supply decoupling capacitors should
be placed as near as possible to pin 9 of
the device.
Sheet: /
File: tackle_sensor_hardware.kicad_sch
Title:
Size: USLegal
Date:
Rev:
KiCad E.D.A. kicad (6.0.1-0)
Id: 1/1