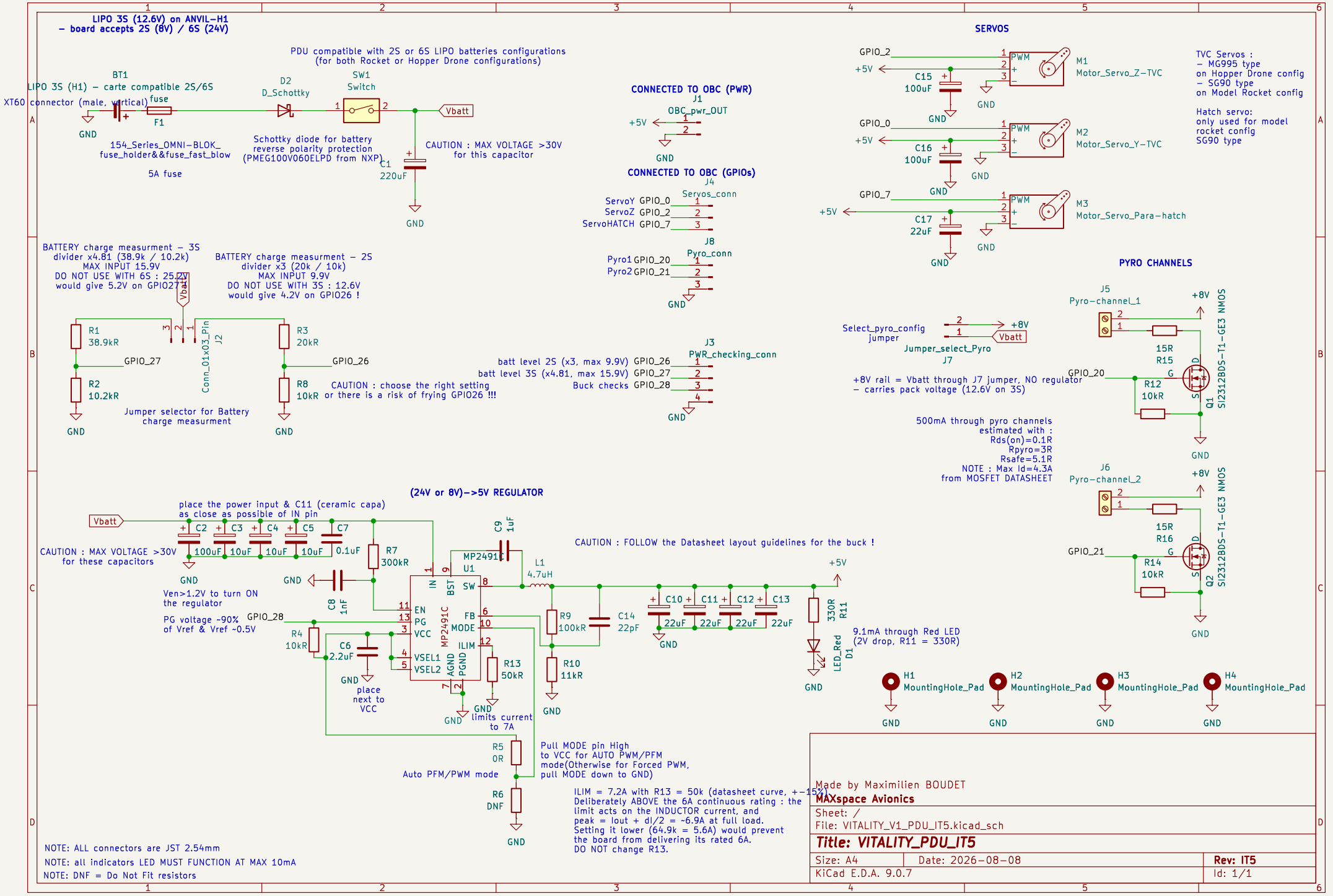

LIPO 3S (12.6V) on ANVIL-H1
- board accepts 2S (8V) / 6S (24V)
PDU compatible with 2S or 6S LIPO batteries configurations
(for both Rocket or Hopper Drone configurations)
BT1
LIPO 3S (H1) - carte compatible 2S/6S
XT60 connector (male, vertical)
fuse
F1
GND
154_Series_OMNI-BLOK_
fuse_holder&&fuse_fast_blow
5A fuse
D2
D_Schottky
Schottky diode for battery
reverse polarity protection
(PMEG100V060ELPD from NXP)
SW1
Switch
Vbatt
C1
220uF
CAUTION : MAX VOLTAGE >30V
for this capacitor
CONNECTED TO OBC (PWR)
J1
OBC_pwr_OUT
+5V
GND
CONNECTED TO OBC (GPIOs)
J4
Servos_conn
ServoY GPIO_0
ServoZ GPIO_2
ServoHATCH GPIO_7
J8
Pyro_conn
Pyro1 GPIO_20
Pyro2 GPIO_21
SERVOS
GPIO_2
GPIO_0
GPIO_7
C15
100uF
C16
100uF
C17
22uF
PWM
M1
Motor_Servo_Z-TVC
M2
Motor_Servo_Y-TVC
M3
Motor_Servo_Para-hatch
TVC Servos :
- MG995 type
on Hopper Drone config
- SG90 type
on Model Rocket config
Hatch servo:
only used for model
rocket config
SG90 type
BATTERY charge measurment - 3S
divider x4.81 (38.9k / 10.2k)
MAX INPUT 15.9V
DO NOT USE WITH 6S : 25.2V
would give 5.2V on GPIO27
BATTERY charge measurment - 2S
divider x3 (20k / 10k)
MAX INPUT 9.9V
DO NOT USE WITH 3S : 12.6V
would give 4.2V on GPIO26 !
R1
38.9kR
R2
10.2kR
GPIO_27
J2
Conn_01x03_Pin
R3
20kR
R8
10kR
GPIO_26
CAUTION : choose the right setting
or there is a risk of frying GPIO26 !!!
Jumper selector for Battery
charge measurment
J3
PWR_checking_conn
batt level 2S (x3, max 9.9V) GPIO_26
batt level 3S (x4.81, max 15.9V) GPIO_27
Buck checks GPIO_28
PYRO CHANNELS
Select_pyro_config
jumper
Jumper_select_Pyro
J7
+8V rail = Vbatt through J7 jumper, NO regulator
- carries pack voltage (12.6V on 3S)
J5
Pyro-channel_1
J6
Pyro-channel_2
15R
R15
R16
R12
10kR
R14
10kR
GPIO_20
GPIO_21
Q1
Q2
SI2312BDS-T1-GE3 NMOS
500mA through pyro channels
estimated with :
Rds(on)=0.1R
Rpyro=3R
Rsafe=5.1R
NOTE : Max Id=4.3A
from MOSFET DATASHEET
(24V or 8V)->5V REGULATOR
place the power input & C11 (ceramic capa)
as close as possible of IN pin
Vbatt
C2
C3
C4
C5
C7
100uF
10uF
10uF
10uF
0.1uF
CAUTION : MAX VOLTAGE >30V
for these capacitors
R7
300kR
C9
1uF
C8
1nF
Ven>1.2V to turn ON
the regulator
PG voltage ~90%
of Vref & Vref ~0.5V
GPIO_28
R4
10kR
C6
2.2uF
place
next to
VCC
MP2491C
U1
IN
BST
SW
EN
PG
VCC
FB
MODE
ILIM
VSEL1
VSEL2
AGND
PGND
L1
4.7uH
CAUTION : FOLLOW the Datasheet layout guidelines for the buck !
R9
100kR
R10
11kR
C14
22pF
C10
C11
C12
C13
22uF
330R
R11
LED_Red
D1
9.1mA through Red LED
(2V drop, R11 = 330R)
R13
50kR
limits current
to 7A
R5
0R
Auto PFM/PWM mode
R6
DNF
Pull MODE pin High
to VCC for AUTO PWM/PFM
mode(Otherwise for Forced PWM,
pull MODE down to GND)
ILIM = 7.2A with R13 = 50k (datasheet curve, +-15%)
Deliberately ABOVE the 6A continuous rating : the
limit acts on the INDUCTOR current, and
peak = Iout + dI/2 = ~6.9A at full load.
Setting it lower (64.9k = 5.6A) would prevent
the board from delivering its rated 6A.
DO NOT change R13.
H1
H2
H3
H4
MountingHole_Pad
NOTE: ALL connectors are JST 2.54mm
NOTE: all indicators LED MUST FUNCTION AT MAX 10mA
NOTE: DNF = Do Not Fit resistors
Made by Maximilien BOUDET
MAXspace Avionics
Sheet: /
File: VITALITY_V1_PDU_IT5.kicad_sch
Title: VITALITY_PDU_IT5
Size: A4
Date: 2026-08-08
Rev: IT5
KiCad E.D.A. 9.0.7
Id: 1/1