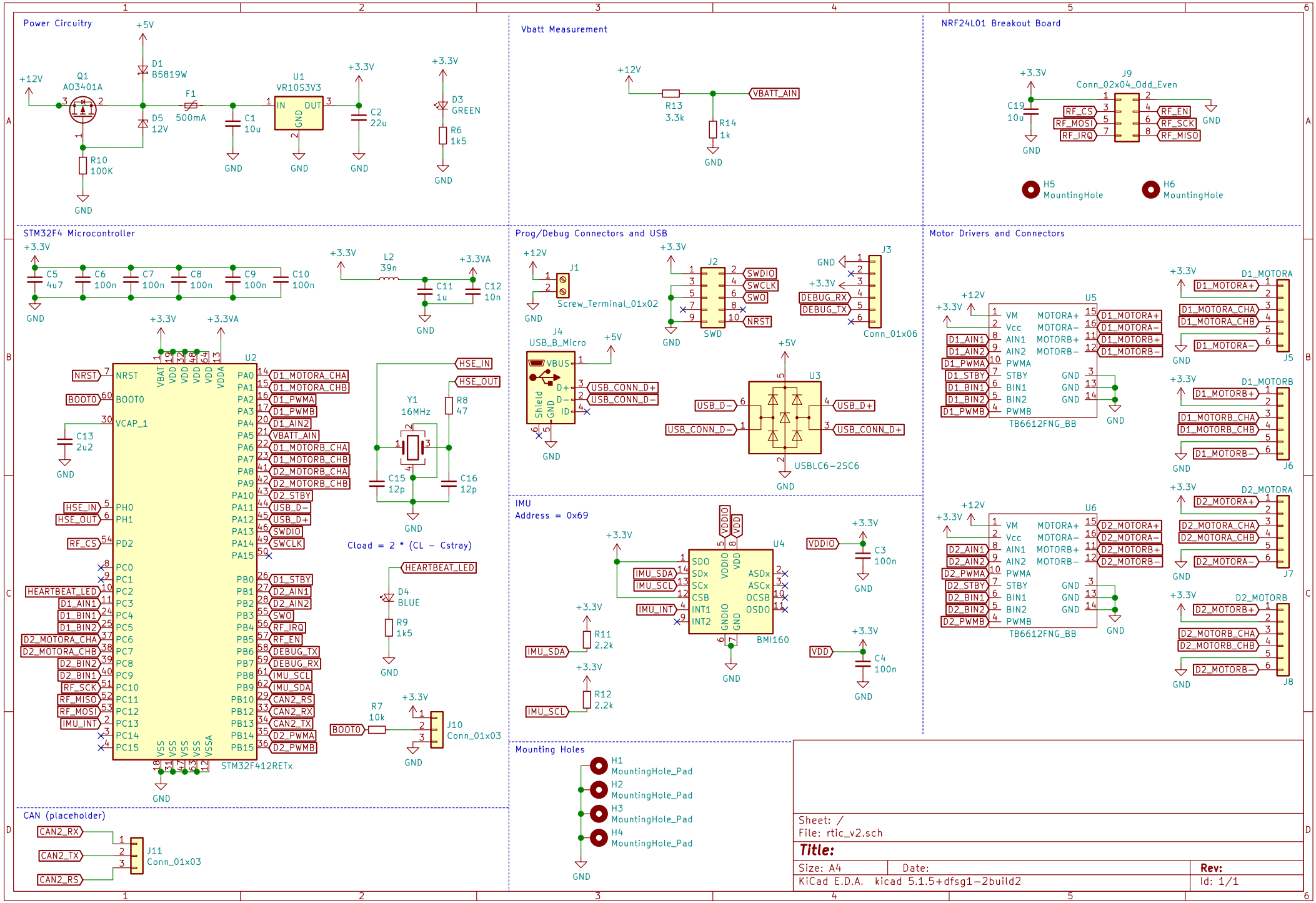
Power Circuitry
+12V
Q1
AO3401A
+5V
D1
B5819W
D5
12V
F1
500mA
R10
100K
GND
U1
VR10S3V3
IN
OUT
GND
C1
10u
+3.3V
C2
22u
D3
GREEN
R6
1k5
Vbatt Measurement
R13
3.3k
R14
1k
VBATT_AIN
NRF24L01 Breakout Board
C19
10u
J9
Conn_02x04_Odd_Even
RF_CS
RF_MOSI
RF_IRQ
RF_EN
RF_SCK
RF_MISO
H5
MountingHole
H6
MountingHole
STM32F4 Microcontroller
C5
4u7
C6
100n
C7
100n
C8
100n
C9
100n
C10
100n
L2
39n
+3.3VA
C11
1u
C12
10n
U2
NRST
BOOT0
VCAP_1
C13
2u2
HSE_IN
HSE_OUT
RF_CS
HEARTBEAT_LED
D1_AIN1
D1_BIN1
D1_BIN2
D2_MOTORA_CHA
D2_MOTORA_CHB
D2_BIN2
D2_BIN1
RF_SCK
RF_MISO
RF_MOSI
IMU_INT
D1_MOTORA_CHA
D1_MOTORA_CHB
D1_PWMA
D1_PWMB
D1_AIN2
VBATT_AIN
D1_MOTORB_CHA
D1_MOTORB_CHB
D2_MOTORB_CHA
D2_MOTORB_CHB
D2_STBY
USB_D−
USB_D+
SWDIO
SWCLK
D1_STBY
D2_AIN1
D2_AIN2
SWO
RF_IRQ
RF_EN
DEBUG_TX
DEBUG_RX
IMU_SCL
IMU_SDA
CAN2_RS
CAN2_RX
CAN2_TX
D2_PWMA
D2_PWMB
STM32F412RETx
Y1
16MHz
R8
47
C15
12p
C16
12p
Cload = 2 * (CL − Cstray)
D4
BLUE
R9
1k5
R7
10k
J10
Conn_01x03
Prog/Debug Connectors and USB
J1
Screw_Terminal_01x02
J2
SWD
J3
Conn_01x06
DEBUG_RX
DEBUG_TX
J4
USB_B_Micro
VBUS
Shield
USB_CONN_D+
USB_CONN_D−
U3
USBLC6−2SC6
IMU
Address = 0x69
U4
BMI160
SDO
SDx
SCx
CSB
INT1
INT2
VDDIO
VDD
GNDIO
ASDx
ASCx
OCSB
OSDO
IMU_SDA
IMU_SCL
IMU_INT
R11
2.2k
R12
2.2k
C3
100n
C4
100n
Motor Drivers and Connectors
U5
U6
TB6612FNG_BB
VM
Vcc
AIN1
AIN2
PWMA
STBY
BIN1
BIN2
PWMB
MOTORA+
MOTORA−
MOTORB+
MOTORB−
D1_MOTORA
D1_MOTORB
D2_MOTORA
D2_MOTORB
J5
J6
J7
J8
Mounting Holes
H1
MountingHole_Pad
H2
MountingHole_Pad
H3
MountingHole_Pad
H4
MountingHole_Pad
CAN (placeholder)
J11
Conn_01x03
Sheet: /
File: rtic_v2.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 5.1.5+dfsg1−2build2
Id: 1/1