Power

VBUS A4 +5V
CC1 A5 cc1
CC2 B5 cc2
D- A7 D-
D- B7
D+ A6 D+
D+ B6
SHIELD
SBU1 A8
SBU2 B8
GND A1 S1
J3 USB_C_Receptacle_USB2.0

C15 10u C5 100n GND
+BATT +BATT +BATT

U2 MP2315
R8 20
R3 100k
VCC BST
IN SW
EN
AAM GND FB
R21 75k
R9 20k
R10 7k5
R11 40.2k
NC
L3 5.5
C4 100n
C8 22u C1 22u C2 220u
D8 D_Shockley +5V
+BATT
GND
J11 Power Modules

Q6 IRLML6402
BAT1 J1
D6 TVS
R26 100k
D1 Zener
R5 5k1 R7 5k1 cc1 cc2
R18 1k
D5 POWER
+BATT
GND
U1 AZ1117-3.3
VI GND VO
C6 22u C10 22u C12 220u
+5V +3V3
GND

LoRa

+3V3 J9 ANT J10 LoRa_ANT
SCK_1 SCK ANT
MOSI_1 MOSI
MISO_1 MISO DIO5
LORA_SS NSS DIO4
DIO3
LORA_RST RESET DIO2
DIO1 LORA_BUSY
GND DIO0
U9 RFM98W-315S2
R15 10k
LORA_SS
GND

Ignition

+3V3 +BATT +3V3 +BATT
R16 100k R20 100K R23 100K R24 100K
FIRE0 Q3 IRLML6402 FIRE1 Q5 IRLML6402
R22 10k Q1 BSS138 R25 10k Q4 BSS138
D2 J6 F0 D4 J7 F1
F0_LED F1_LED
GND GND

Pressure Sensor

+3V3
C16 100n U10 BMP280
VDD SCK SCL
VDDIO SDI SDA
SDO
GND CSB
GND 10k R14 +3V3
GND

RGB Indicator

+3V3 +5V
D7 WS2812B
VDD
RGB DIN DOUT
VSS
GND

Buzzer

+5V
LS1 5020 J8 BUZZ
Buzz Q2 S8050
R33 10k
GND

Servo Motors

SERVO0 PWM M1 Motor_Servo
+5V
GND
SERVO1 PWM M2 Motor_Servo
+5V
GND
SERVO2 PWM M3 Motor_Servo
+5V
GND
SERVO3 PWM M4 Motor_Servo
+5V
GND

Out Port

+3V3 TP1 3V3
SWDIO TP3 SWDIO
SWCLK TP4 SWCLK
GND TP5
GND
ADC0 ADC1 ADC2 ADC3
J4 ADC
GND

M3 Mounting Hole

H1 MountingHole_Pad GND
H2 MountingHole_Pad GND
H3 MountingHole_Pad GND
H4 MountingHole_Pad GND

Processing System

J2 Switching
SDA SCL EXT_INT GND +3V3
MP1
GND

+3V3
R1 10k R2 10k R4 4k7 R6 4k7
RST IO0 SDA SCL
SW1 RST R19 1k D3 ESP_LED
INDI
GND GND

U8 ESP32-S3-WROOM-1U
RST EN IO15
IO16
RXD0 IO17
TXD0 IO18
IO0 IO21
INDI IO1 D-
LORA_SS IO2 D+
IO3 LORA_RST
SD_SS IO4 MOSI_1
IO5 MISO_1
IO6 SCK_1
IO7 MISO_1
SCL IO8 LORA_BUSY
SDA IO9 MOSI_2
IO10 SCK_2
IO11 MISO_2
IO12
IO13 FIRE0
IO14 FIRE1
GND GND

GPS

+3V3
C9 100n C11 100n C13 100n C14 1u
GND
U6 24LC32
A0 VCC SDA
A1 SCL
A2 GND WP
GND

+3V3
RX1 SDA
TX1 SCL
TXD/SPI_MISO
RXD/SPI_MOSI
USB_DM VCC
USB_DP V_BCKP VDD_USB VCC_RF
SDA/SPI_CS
SCL/SPI_CLK
R12 22
L2 22u
RF_IN J5 GPS_ANT
GND
EXTINT
SAFEBOOT TIMEPULSE
RESET
D_SEL
+3V3 U7 NEO-XM GND

IMU

+3V3 +3V3 U4 AZ1117-1.8 +1V8
C22 10u C23 100n VI GND VO C18 22u
GND GND

JP1 MPU VIO
+3V3 +1V8
MPU_VIO_SEL

U11 MPU-9250
VDD
VDDIO
IMU_INT INT SDA/MOSI SDA
AD0/MISO
AUX_SDA SCL/SCLK SCL
AUX_SCL CS
Q8 BSS138 R13 10k
Q9 BSS138 R17 10k
R28 10k R29 10k
REGOUT FSYNC
RESV_VDDIO
RESV_GND
C24 100n
GND GND
MPU_VIO_SEL +3V3

SD Card

J12 Micro_SD_Card
DAT1 DAT0 VSS CLK VDD CMD DAT3/CD DAT2
MISO_2 SCK_2 MOSI_2 SD_SS
SHIELD
+3V3 R30 10k
SD_SS
GND GND

PWM Controller

+3V3
U3 STM32G030F6
RST NRST PA0 ADC0
SCL PB7/PB8 PA1 ADC1
SDA PB9/PC14-OSC32_IN PA2 ADC2
Buzz PC15-OSC32_OUT PA3 ADC3
PA4
PA5 SERVO0
PA6 SERVO1
PA7 SERVO2
PB0/PB1/PB2/PA8 SERVO3
PA11[PA9]
PA12[PA10]
PA13
PA15/PA14-BOOT0 RGB
PB3/PB4/PB5/PB6 SWDIO
VSS SWCLK
+3V3
C3 100n
GND