Buck converter
VIN 3.8...32VDC – VOUT 5 VDC

U4 AP63205WU
L2 SRP5030T-6R8M
+24V +5V
C2 10 uF 50V
C3 100 nF
C7 22 uF 25V
C8 22 uF 25V
D14 LED
R32 180 Ohm
GND

Buck converter
5 VDC – VOUT 3.3 VDC

U1 AP63203WU
L1 SRR5228A-2R2Y
+5V +3.3V
C1 10 uF 50V
C4 100 nF
C5 22 uF 25V
C6 22 uF 25V
D15 LED
R33 20 Ohm
GND

24V Input

D13 LED +24V
R31 2.2 kOhm
J6 Power input
GND

Enable pin
SW1 SW_Push
R3 5.1 kOhm
+3.3V
C15 1 uF
EN
GND

UART0
TX/GPIO43
RX/GPIO44
J1
GND

BOOT pin
SW2 SW_Push
R34 10 kOhm
+3.3V
BOOT
GND

DS18B20
J16 +3.3V
4.7 kOhm R35
2.2 kOhm R37
GPIO2
J15
GND
J17 +3.3V
4.7 kOhm R36
2.2 kOhm R38
GPIO1
J18
GND

I2C & SPI
+3.3V
I2C_SDA I2C_SCL J41
I2C_SDA I2C_SCL J42
I2C_SDA I2C_SCL J38
GND
+3.3V
R46 4.7 kOhm
R47 4.7 kOhm
I2C_SDA I2C_SCL
SPI_MISO SPI_MOSI SPI_CLK GPIO47 J14
SPI_MISO SPI_MOSI SPI_CLK GPIO16 J37
GND

3 wire PT100
C9 100 nF
U15 MAX31865xAP
GPIO4 SDI
SPI_MOSI SDO
SPI_CLK SCLK
CS
SPI_MISO SDO
DRDY
DVDD
VDD
BIAS
REFIN+
REFIN-
ISENSOR
FORCE+
FORCE2
RTDIN+
RTDIN-
FORCE-
DGND GND
430 Ohm 0.1% R5
C10 100 nF
J2

USB
J7 USB4110-GF-A
R21 5.1 kOhm
D+ D-
R22 5.1 kOhm
GND

selectable pullup/pulldown I/O
+3.3V +3.3V
10 kOhm R49
J30 GPIO17 J29
10 kOhm R53
J33 GPIO16 J34
GND

ESP32-S3-WROOM-1
C14 +3.3V
GND
U3 ESP32-S3-WROOM-1
EN 3V3
+3.3V
SPI_MOSI
GPIO16
R42
R45 10 kOhm
GPIO43 GPIO42
GPIO45 GPIO46
R11 10 kOhm
R12 10 kOhm
I2C_SCL
GND

24V Outputs
C11 100 nF +5V
U5 SN74LV1T34DBV
GPIO13
GND
R4 680 Ohm +24V
J3 D3 SS34
Q2 IRLML6344TRPBF
R8 100 kOhm
GND

C12 100 nF +5V
U6 SN74LV1T34DBV
GPIO12
R7 680 Ohm +24V
J4 D4 SS34
Q4 IRLML6344TRPBF
R9 100 kOhm
GND

C13 100 nF +5V
U9 SN74LV1T34DBV
GPIO11
R10 680 Ohm +24V
J5 D1 SS34
Q1 IRLML6344TRPBF
R58 100 kOhm
GND

C16 100 nF +5V
U2 SN74LV1T34DBV
GPIO10
R1 680 Ohm +24V
J8 D2 SS34
Q3 IRLML6344TRPBF
R2 100 kOhm
GND

C17 100 nF +5V
U11 SN74LV1T34DBV
GPIO9
R16 680 Ohm +24V
J9 D5 SS34
Q5 IRLML6344TRPBF
R17 100 kOhm
GND

C19 100 nF +5V
U22 SN74LV1T34DBV
GPIO14
R27 680 Ohm +24V
J10 D19 SS34
Q7 IRLML6344TRPBF
R28 100 kOhm
GND

C18 100 nF +5V
U21 SN74LV1T34DBV
GPIO3
R25 680 Ohm +24V
F3 Polyfuse
J11 D18 SS34
Q6 IRLML6344TRPBF
R26 100 kOhm
GND

C20 100 nF +5V
U23 SN74LV1T34DBV
GPIO8
R29 680 Ohm +24V
F2 Polyfuse
J12 D20 SS34
Q8 IRLML6344TRPBF
R30 100 kOhm
GND

24V Fan Outputs with 5V PWM
C21 100 nF +5V
U13 SN74LV1T34DBV
GPIO43
D6 BAT54
R58 680 Ohm +24V
D9 STPS5L60U
D8 BZT52C5V1
D7 BZT52C5V1
R19 10 kOhm
J8
GND

C22 100 nF +5V
U7 SN74LV1T34DBV
GPIO42
D10 BAT54
R13 680 Ohm +24V
D21 STPS5L60U
D11 BZT52C5V1
D12 BZT52C5V1
R14 10 kOhm
J14
GND

Voltage divider ADC inputs
R41 dnp +3.3V
R39 10 kOhm +3.3V
J19 J21
C23 100 nF CH0
10 kOhm R44 +3.3V
dnp R43
J20 J22
C24 100 nF CH1
GND

J23 R40 10 kOhm +3.3V
C25 100 nF CH2
J24 R6 10 kOhm +3.3V
C26 100 nF CH3
J25 R15 10 kOhm +3.3V
C28 100 nF CH4
J26 R20 10 kOhm +3.3V
C29 100 nF CH5
J27 R23 10 kOhm +3.3V
C30 100 nF CH6
J28 R24 10 kOhm +3.3V
C31 100 nF CH7
GND

C27 100 nF +3.3V
U20 MCP3208
CH0 CH1 CH2 CH3 CH4 CH5 CH6 CH7
Vref Vdd
CLK Dout Din CS/SHDN
AGND DGND
SPI_CLK SPI_MOSI SPI_MISO GPIO18
ADC