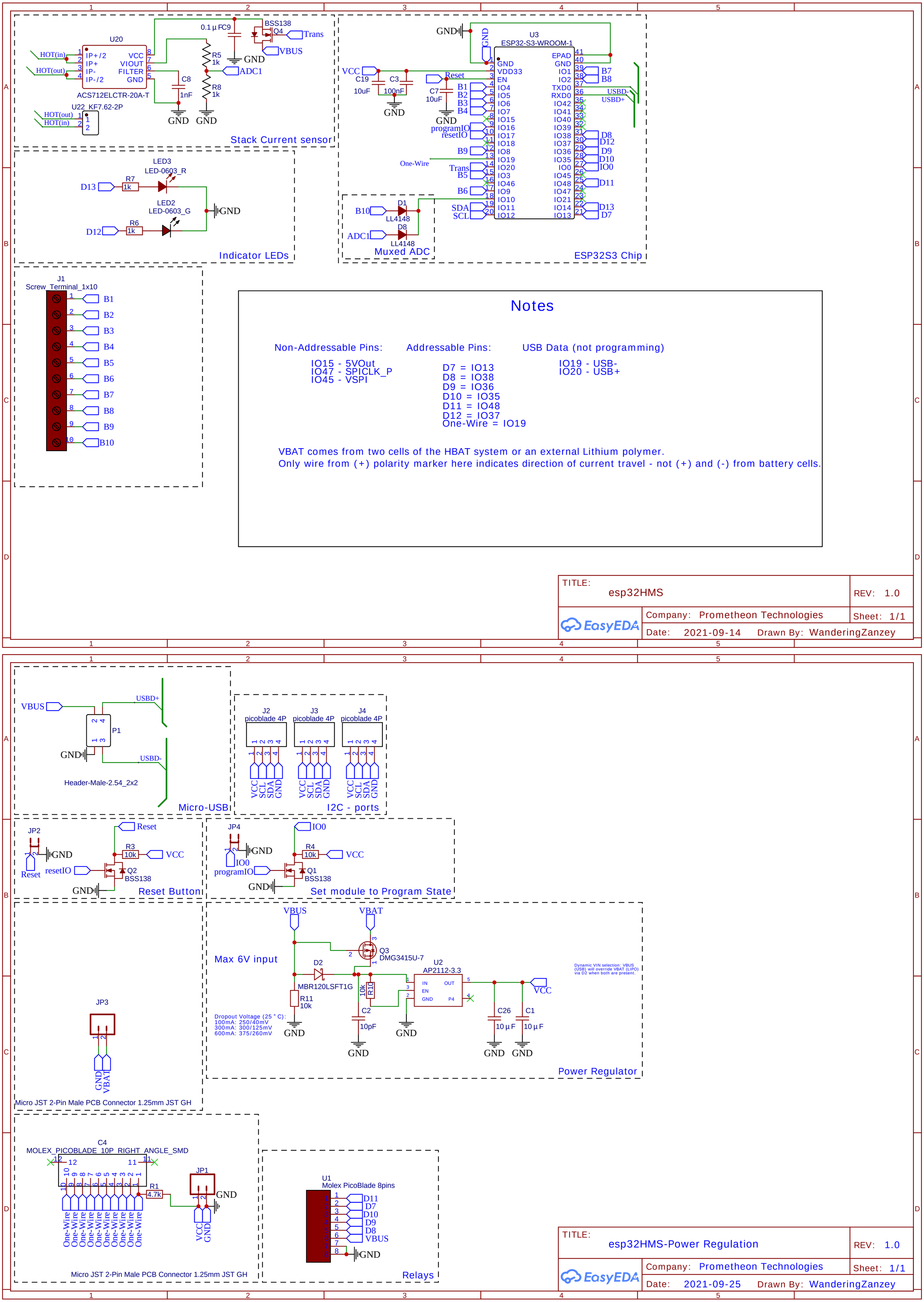
Stack Current sensor
U20
ACS712ELCTR-20A-T
HOT(in)
HOT(out)
IP+/2
IP+
IP-
IP-/2
VCC
VIOUT
FILTER
GND
U22_KF7.62-2P
0.1µF C9
BSS138
Q4
Trans
VBUS
R5 1k
R8 1k
C8 1nF
ADC1
Indicator LEDs
LED3
LED-0603_R
LED2
LED-0603_G
D13
D12
R7 1k
R6 1k
ESP32S3 Chip
U3
ESP32-S3-WROOM-1
VCC
C19 10uF
C3 100nF
Reset
C7 10uF
programIO
resetIO
One-Wire
Trans
SDA
SCL
USBD-
USBD+
Muxed ADC
B10
ADC1
D1 LL4148
D8 LL4148
J1
Screw_Terminal_1x10
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
Notes
Non-Addressable Pins:
IO15 - 5VOut
IO47 - SPICLK_P
IO45 - VSPI
Addressable Pins:
D7 = IO13
D8 = IO38
D9 = IO36
D10 = IO35
D11 = IO48
D12 = IO37
One-Wire = IO19
USB Data (not programming)
IO19 - USB-
IO20 - USB+
VBAT comes from two cells of the HBAT system or an external Lithium polymer.
Only wire from (+) polarity marker here indicates direction of current travel - not (+) and (-) from battery cells.
TITLE: esp32HMS
REV: 1.0
Company: Prometheon Technologies
Sheet: 1/1
Date: 2021-09-14
Drawn By: WanderingZanzey
Micro-USB
VBUS
USBD+
USBD-
P1
Header-Male-2.54_2x2
I2C - ports
J2 picoblade 4P
J3 picoblade 4P
J4 picoblade 4P
VCC
SCL
SDA
GND
Reset Button
JP2
Reset
resetIO
R3 10k
Q2 BSS138
Set module to Program State
JP4
IO0
programIO
R4 10k
Q1 BSS138
Max 6V input
VBUS
VBAT
Q3 DMG3415U-7
D2 MBR120LSFT1G
R11 10k
R10 10k
C2 10pF
U2 AP2112-3.3
IN
OUT
EN
GND
P4
C26 10µF
C1 10µF
Dropout Voltage (25 ° C):
100mA: 250/40mV
300mA: 300/125mV
600mA: 375/260mV
Dynamic VIN selection: VBUS (USB) will override VBAT (LIPO) via D2 when both are present.
Power Regulator
JP3
Micro JST 2-Pin Male PCB Connector 1.25mm JST GH
C4
MOLEX_PICOBLADE_10P_RIGHT_ANGLE_SMD
One-Wire
R1 4.7k
JP1
Micro JST 2-Pin Male PCB Connector 1.25mm JST GH
U1
Molex PicoBlade 8pins
D11
D7
D10
D9
D8
VBUS
Relays
TITLE: esp32HMS-Power Regulation
REV: 1.0
Company: Prometheon Technologies
Sheet: 1/1
Date: 2021-09-25
Drawn By: WanderingZanzey