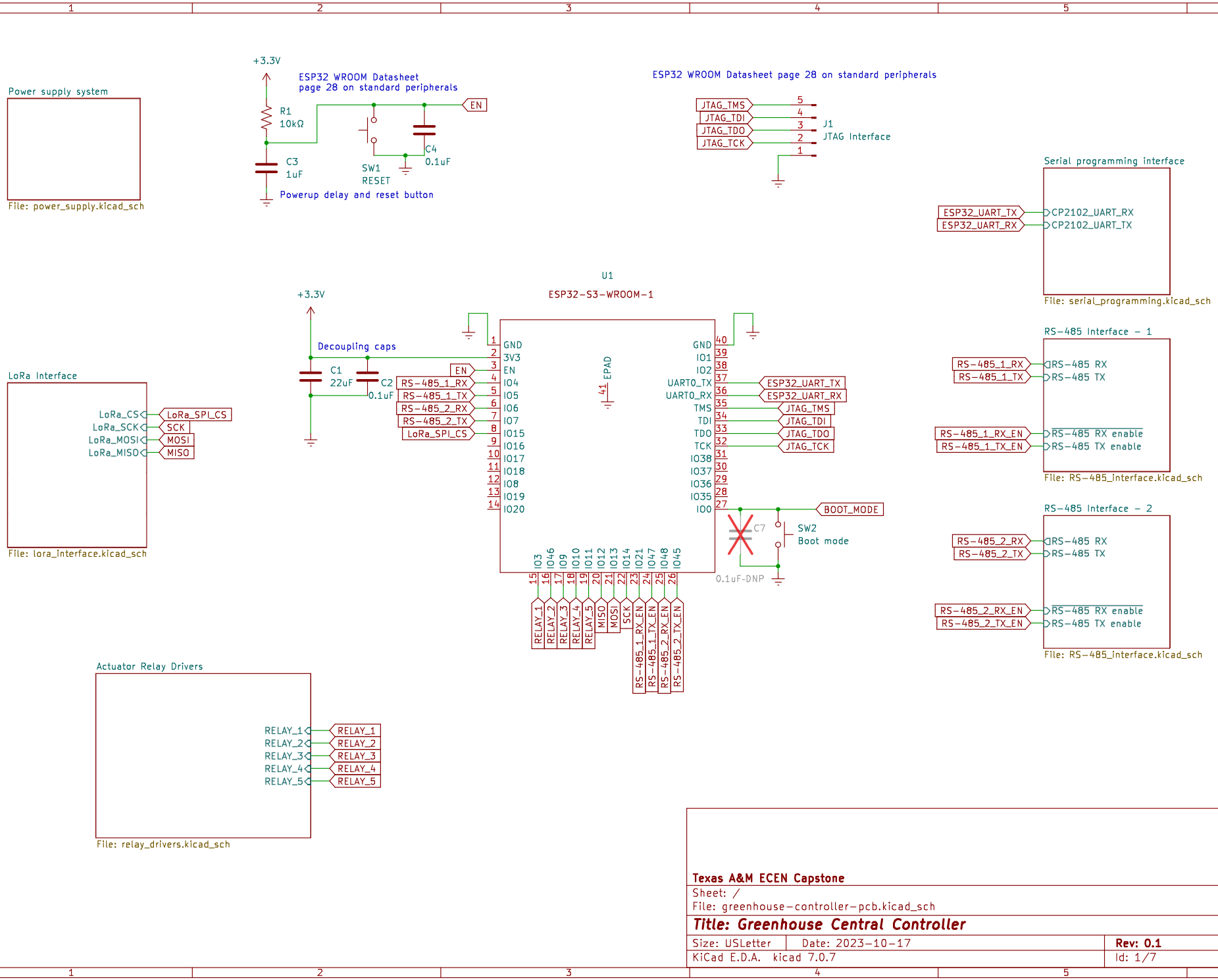
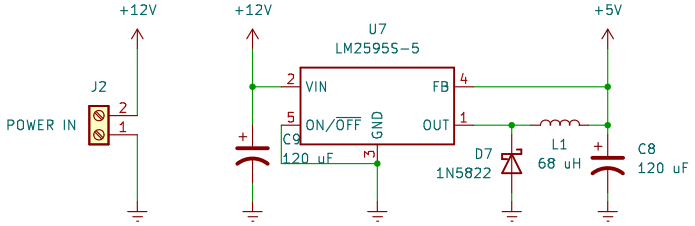
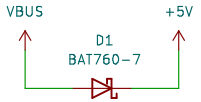
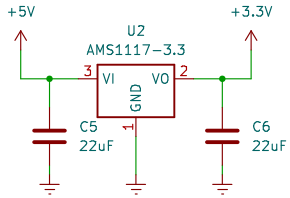

Power supply system
File: power_supply.kicad_sch
+3.3V
ESP32 WROOM Datasheet
page 28 on standard peripherals
R1
10kΩ
C3
1uF
SW1
RESET
C4
0.1uF
EN
Powerup delay and reset button
ESP32 WROOM Datasheet page 28 on standard peripherals
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TCK
J1
JTAG Interface
Serial programming interface
ESP32_UART_TX
ESP32_UART_RX
CP2102_UART_RX
CP2102_UART_TX
File: serial_programming.kicad_sch
U1
ESP32-S3-WROOM-1
+3.3V
Decoupling caps
C1
22uF
C2
0.1uF
GND
3V3
EN
IO4
IO5
IO6
IO7
IO15
IO16
IO17
IO18
IO8
IO19
IO20
EPAD
GND
IO1
IO2
UART0_TX
UART0_RX
TMS
TDI
TDO
TCK
IO38
IO37
IO36
IO35
IO0
RS-485_1_RX
RS-485_1_TX
RS-485_2_RX
RS-485_2_TX
LoRa_SPI_CS
BOOT_MODE
C7
0.1uF-DNP
SW2
Boot mode
RELAY_1
RELAY_2
RELAY_3
RELAY_4
RELAY_5
MISO
MOSI
SCK
RS-485_1_RX_EN
RS-485_1_TX_EN
RS-485_2_RX_EN
RS-485_2_TX_EN
LoRa Interface
LoRa_CS
LoRa_SCK
LoRa_MOSI
LoRa_MISO
SCK
MOSI
MISO
File: lora_interface.kicad_sch
RS-485 Interface - 1
RS-485 RX
RS-485 TX
RS-485 RX enable
RS-485 TX enable
File: RS-485_interface.kicad_sch
RS-485 Interface - 2
RS-485 RX
RS-485 TX
RS-485 RX enable
RS-485 TX enable
File: RS-485_interface.kicad_sch
Actuator Relay Drivers
RELAY_1
RELAY_2
RELAY_3
RELAY_4
RELAY_5
File: relay_drivers.kicad_sch
Texas A&M ECEN Capstone
Sheet: /
File: greenhouse-controller-pcb.kicad_sch
Title: Greenhouse Central Controller
Size: USLetter
Date: 2023-10-17
Rev: 0.1
KiCad E.D.A. kicad 7.0.7
Id: 1/7





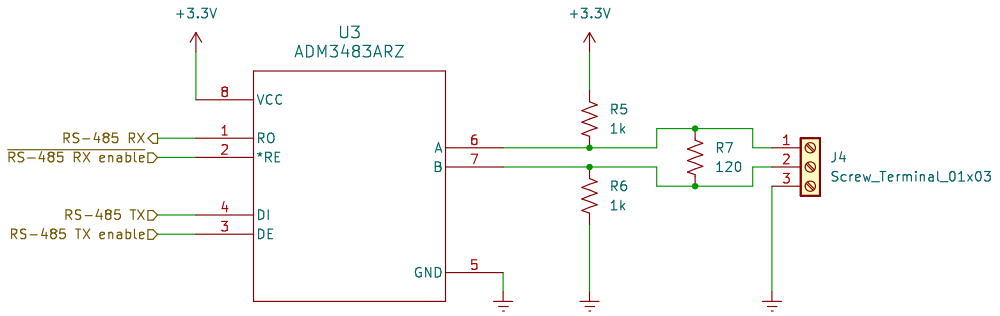
My understanding is that this allows graceful switching between power from the usb and from the 12v -> 5v regulator
Source: Espressif esp32 devkit v4 schematic



Power regulator for esp32 wroom module
Source: Espressif esp32 devkit v4 schematic

Texas A&M ECEN Capstone		
Sheet: /Power supply system/		
File: power_supply.kicad_sch		
Title: Power Supply		
Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 2/7

From Analog Devices Application note 960



Texas A&M ECEN Capstone

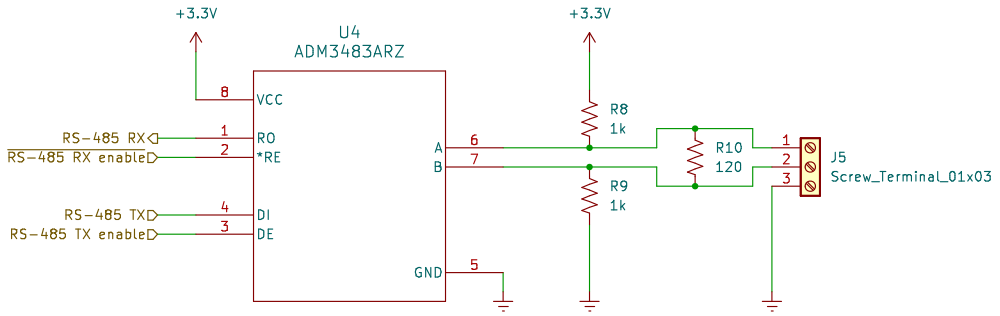
Sheet: /RS-485 Interface - 1/

File: RS-485_interface.kicad_sch

Title: RS-485 Interface

Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 2/7

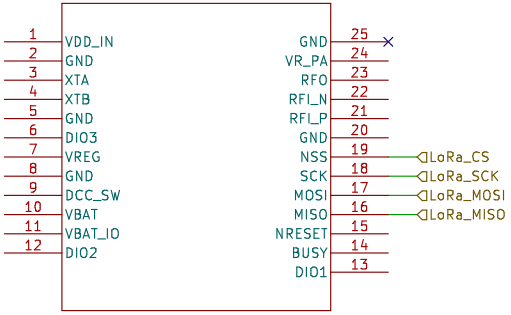
From Analog Devices Application note 960

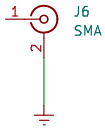


Texas A&M ECEN Capstone		
Sheet: /RS-485 Interface - 2/		
File: RS-485_interface.kicad_sch		
Title: RS-485 Interface		
Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 3/7

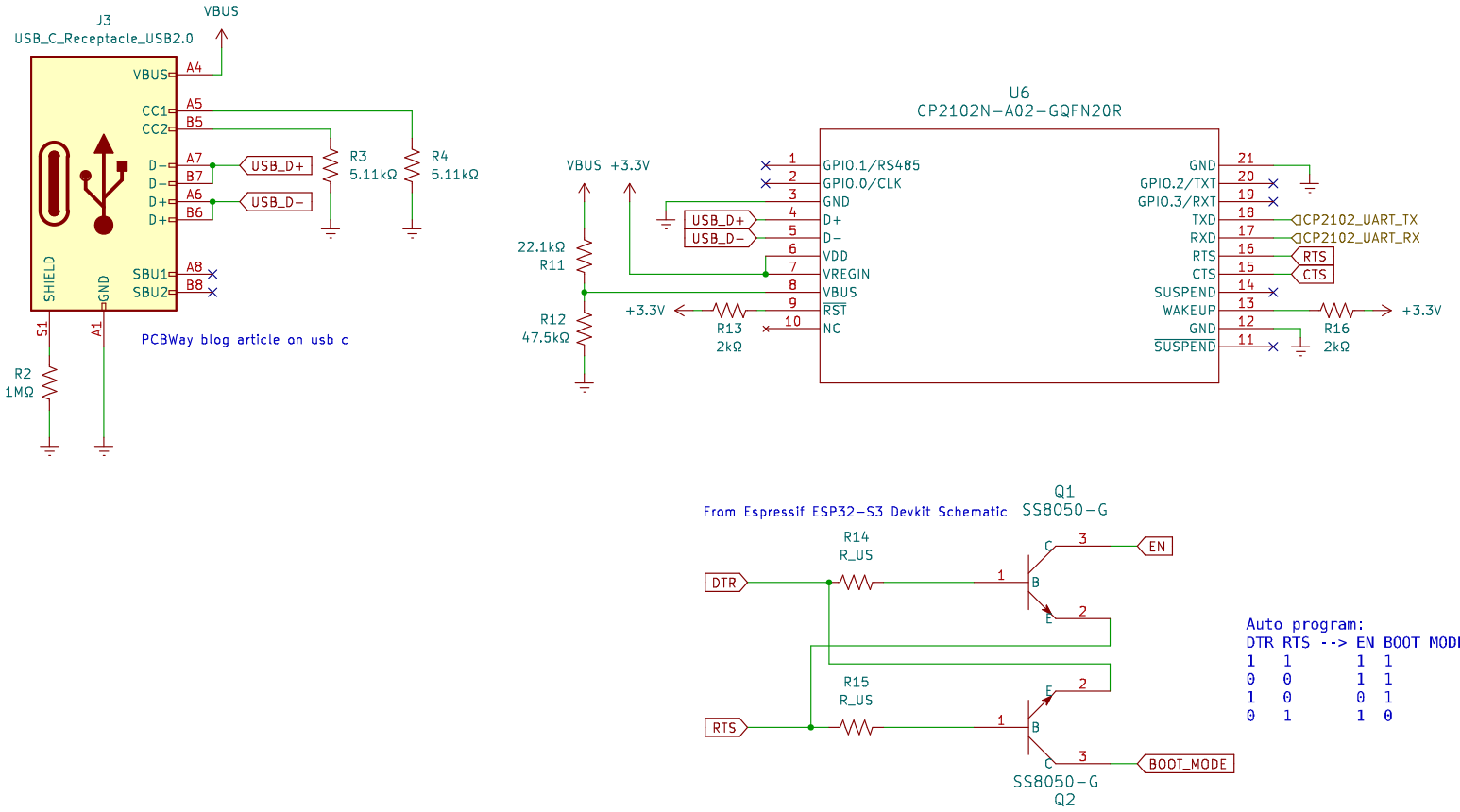
TODO:
LoRa chip support parts

U5
SX1261IMLTRT

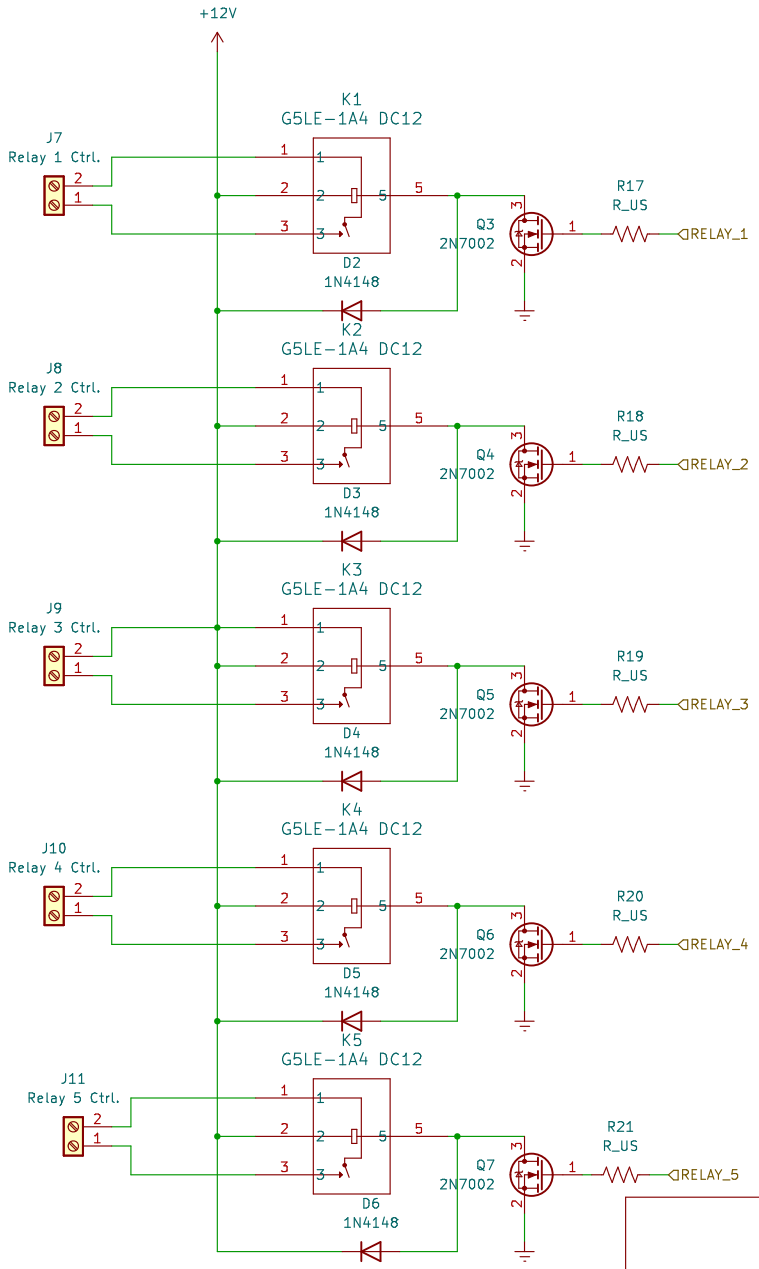




Texas A&M ECEN Capstone		
Sheet: /LoRa Interface/		
File: lora_interface.kicad_sch		
Title: LoRa Interface		
Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 4/7



Texas A&M ECEN Capstone		
Sheet: /Serial programming interface/		
File: serial_programming.kicad_sch		
Title: Programming and UART Interface		
Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 6/7



Texas A&M ECEN Capstone

Sheet: /Actuator Relay Drivers/
File: relay_drivers.kicad_sch

Title: Relay Drivers

Size: USLetter	Date: 2023-10-17	**Rev: 0.1**
KiCad E.D.A. kicad 7.0.7		Id: 7/7