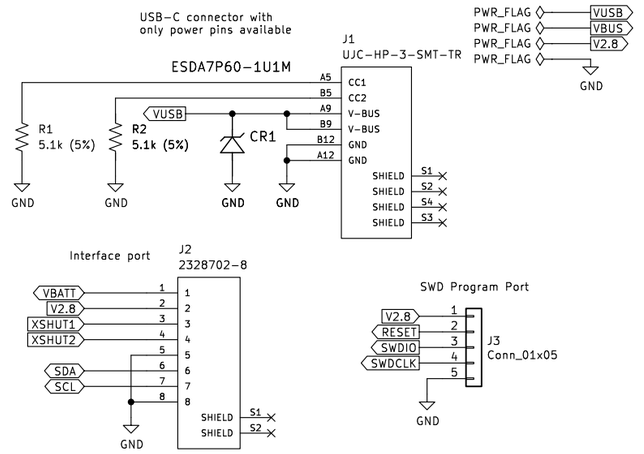
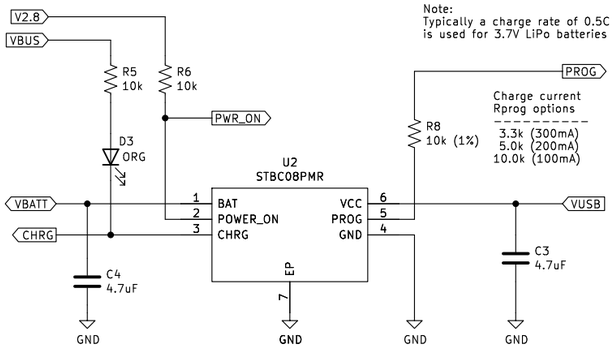
Headers



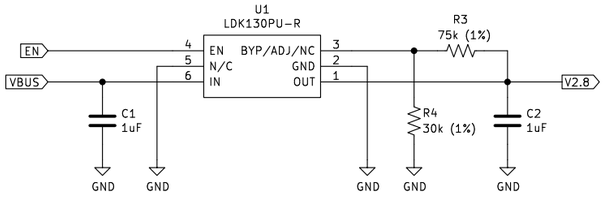
NOTES:
- R1 and R2 must be ±10% or less for power capability detection according to USB protocol
- CR1 is a transient voltage supression (TVS) diode for ESD protection

Charging Circuit



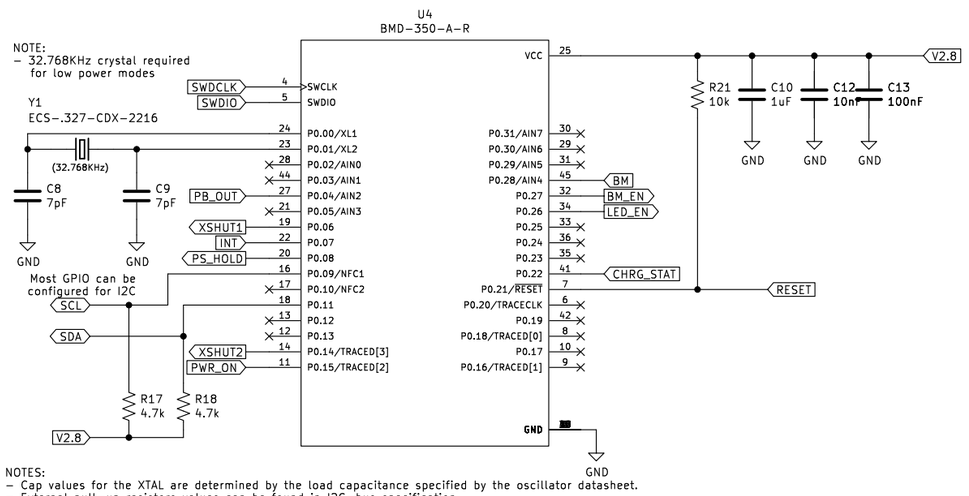
NOTES:
- Rprog = 1000 x (Vprog / Ibat). Vprog in constant current mode is 1.0 V
- Disconnecting the PROG pin from ground can be used to shutdown the IC

Voltage Regulator Circuit



NOTES:
- Vout = Vadj (1 + R3 / R4)
- Rearrange to get R3 = R4(Vout/Vadj - 1)
- According to datasheet, Vadj = 800mV (±16mV)

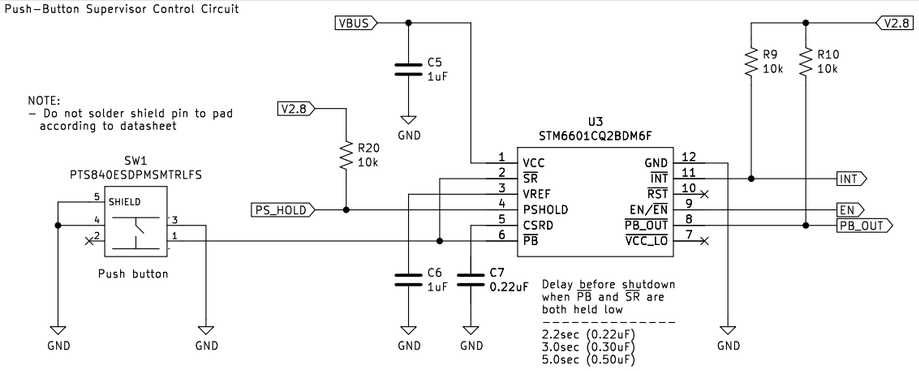
Bluetooth Cirucit



NOTES:
- Cap values for the XTAL are determined by the load capacitance specified by the oscillator datasheet.
- External pull-up resistors values can be found in I2C-bus specification.
  Pull-up are typically fitted only once per bus, near the host.
  Recommended values for pull-up resistors for an AVDD of 2.8V and 100KHz I2C clock is 4.7 kΩ.
  Recommended values for pull-up resistors for an AVDD of 2.8V and 400KHz I2C clock is 1.5 to 2 kΩ.
- P0.09 are P0.10 are NFC pins but can be configured in software as GPIO
- RESET line requires an external pull-up resistor

  REF: nRF52832_PS_v1.1 - 16.1 DAP - Debug Access Port
- SWDIO line has an internal pull-up resistor
- SWDCLK line has an internal pull-down resistor

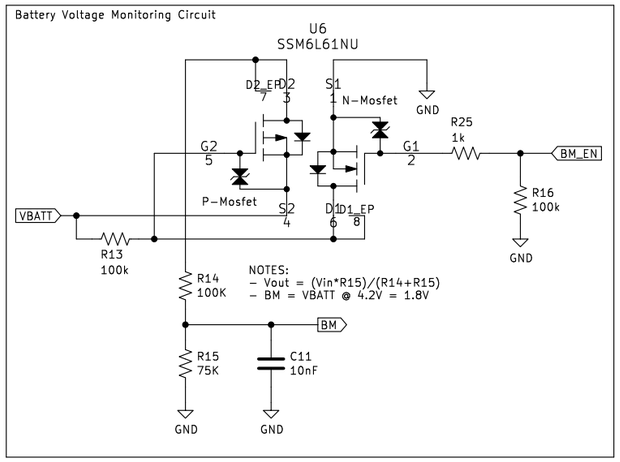
Push-Button Supervisor Control Circuit



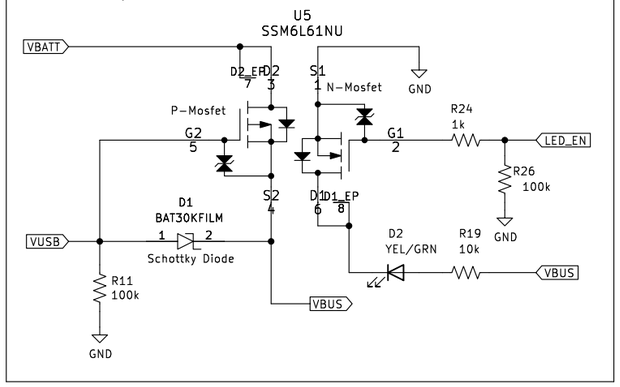
NOTES:
- CSRD cap sets the Smart Reset delay time at 10 s/uF. Recommended capacitor has a low ESR (e.g. ceramic)
- Has a fixed active high EN output, long push deasserts EN, internal pull-up on SR
- Has a fixed power-on lockout voltage at 3.30V and force shut-off at 3.10V
- RST not used with this configuration, active low and open drain, pull-up resistor added
- PS_HOLD driven low by internal 300kΩ resistor during startup, µC shall drive it high
- PB Has internal 100kΩ pull-up resistor
- SR Has internal 100kΩ pull-up resistor (optional order configuration)

NOTE:
- PS_HOLD pulled up to V2.8 to allow for production programming when chip is blank
- After programming, the firmware can pull the PS_HOLD low to shutdown the LDO

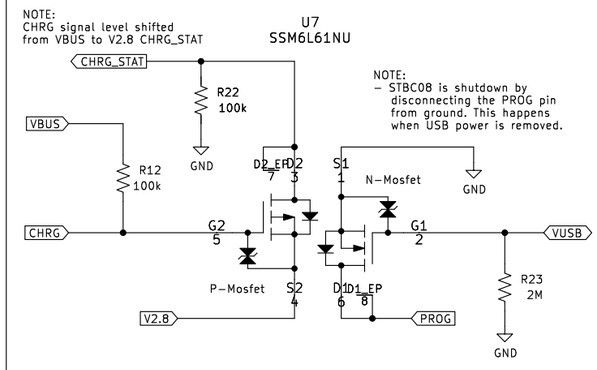
Battery Voltage Monitoring Circuit



Load Share and System LED Drive Circuits



STBC08 Charge Status Level Shifter and Enable Circuit



Designed by Andrew Green

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