



NOTES

- + Improved digital power regulator MCP1700T with LM117 to increase power capacity & voltage tolerance
- + Improved 7-component USB "rup" resistor control with two component 'digital' PNP + pull-up (siy's mini48 inspired)
- + Improved discrete component USB termination & filter with NUF2042 integrated USB upstream ESD & filter
- + Added Uusb protection with Poyfuse
- + Added power-on LED2
- + Isolated Crystal ground (XTAL_GND) from ground
- = Replaced SMD USB socket, buttons & LED with through-hole
- = Changed all 0402 capacitors & resistors to 1206
- = Replaced 0603 Ferrite Bead with 1206
- = Retained (vs mini48) BUT/B00T0 1k pull-up (R2) This protects external device pins from accidental BUT button push
- = Retained (vs mini48) RESET 1k pull-down (R4) This protects external device pins from accidental RESET button push
- Did not add mini48's capacitor across RESET button
- SF documentation says NRSIT has 2.5ms time delay. I assume that debounces RESET button (confirm?)
- Ref: RM0008 7.1.2 Power Reset
- STM32F103x8 STM32FxB Datasheet (CD00161566 rev 14)
- Did not add 32.76kHz RTC Crystal+caps
- ? Replace AV+ pin with Ucc connection, retain MCP170x
- ? Retain AV- (AGND)
- MCP170x likely okay at higher voltages when only driving ADC. However drawing more than a few mA current when Vin > 7V may damage it. This removes value of AV+