**Battery Management Component comparison:**

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| --- | --- | --- | --- | --- |
| JLCPCB Part number | Rated Voltage | IBAT | VBAT | Output Programming Method |
| C16581 | 8V | 1200mA | 0.7V | Rprog |
| C711584 | 28V | 2.5A | 14V | Resistor between VOUT and BAT |
| C82123 | 12V | 6A | 4V | None |
| C7473158 | 9V | 1000mA | 10V | Rprog |
| C5818962 | 28V | 2.5A | 14V | Resistor between VOUT and BAT |
| C2974724 | 28V | 1A | 11V | Rprog |

**Requirements:**

* 2 charging modes (from battery perspective)
  + 200 mA
  + 600 mA +- 100 mA
* Switching done via pin 13, connected to PB4 on microcontroller

**Design Ideas:**

* Dedicated Li-Po charger IC required to charge the battery from 9V
  + Will use C2974724 as it is the only IC found that can handle the required input/output voltages and current in addition to having an external Rprog connected to a dedicate pin on the IC.
* Current switching should be integrated into charging circuit
* Many ICs have a logic pin to set the output current based on Rprog connected. Could use a MOSFET switching circuit to change the value of Rprog using digital signal from pin 13.
* Could also use analogue switch
* ~~Will need to use a voltage divider to keep the temperature sensing pin at a standard operating voltage, as there will not be a temperature sensor for the battery.~~
  + According to the datasheet, when the TEMP pin is at ground, the function is disabled and all other functions operate as normal.
* The status LED pins will be tied to ground as there will be no status LEDs

**Battery Management Component Ideas:**

* C16581 (has external Rprog)
* ~~Bq2423x~~ (wrong output current options, but can be switched with simple logic signal at switching pin)
* C711584 (current is decided by resistor between IC and battery)
* ~~C725791~~ (maximum battery current is 500mA)
* ~~C2832124~~ (maximum input voltage is 8V)

~~C5381776~~ (maximum input voltage is 7V)