

Notes:

- Estimated 32 hour battery life under continuous operation at 250mA
- Although half of the 74HC74 chip is unutilized it was significantly cheaper as a dual package
- MPU regulator requires 25mA to 500mA drain to obtain $\pm 2\%$ voltage accuracy (dummy load)
- Analog regulator requires 10mA to 100mA drain to obtain $\pm 1.2\%$ voltage accuracy
- Diode is utilized to ensure input to analog regulator is kept within acceptable levels
- Both regulators are filtered to remove small levels of supply noise generated from switching
- Selected DC motor equipped with built-in encoder which is used for positional feedback

Layout Considerations:

- H-Bridge requires a special pcb layout for heat dissipation check the reference documentation
- Ensure that the connection between battery ground and analog ground is of sufficient trace width

Power System Design by Robert Goleberski

- Uses an LED bar indicator for illustrating battery level and heartbeat signal strength
- Provides regulated 3.3V power to the sensitive microcontroller circuitry
- Provides regulated +/- 5V for driving the analog front end and various other devices
- Custom DC motor controller design with provisions for easy onboard adjustments

Sheet: /PowerSystem/

File: PowerSystem.sch

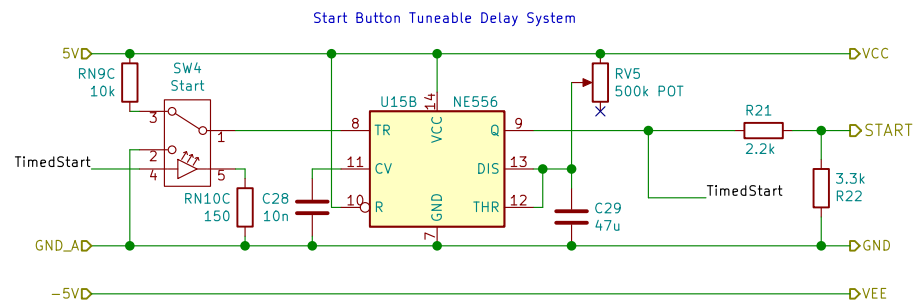
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Notes:
 – Approximatly 25mA are utilized by this feature as a result of the LED Lamp

555 Start Button Monostable Design by Matthew Santos
 – On Delay Tuneable up to 20 seconds
 – Naturally Debounces the Start Logic Input
 – Builtin Logic Level Conversion for the MPU
 – Illuminates the Start Button During Measurement

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Id: 5/5