Appendix E: Project Completion Form

Cost Estimates

Please give detailed calculations and estimates of the overall cost of your actual design below. Take care to include person-hour estimates for your software, board production and debugging, as well as your components and consumables. You should also estimate the production cost of your final unit (you may assume a large quantity are to be produced), the market price and determine how many need to be sold to be profitable. Account for any differences between the actual values and the values given in your original project proposal form.

Total cost for prototype £98

Estimated cost for manufacture £70 with mass discount of ~30%.

Person-hours 450 x 75 £33750

Total cost £137,500

Market value £150 + VAT → £180 £80 profit per unit → 1720 units sold to make a profit

Differences: More person-hours

More expensive propellers, motors, power distribution board

Design Changes

Briefly summarise any design changes your team had to make to the original design proposal, in order to get your system to work. Do not go into vast detail, as it is anticipated that this will be done by the individuals responsible for these components of the design in the formal report.

- Removal of PPM-to-Digital Decoder due to Spectrum not arriving, replaced with bluetooth module.
- Moved IMU interface to an Arduino Mini to remove compute stress from the main controller.
- Added a MSP microcontroller to fix issue with data integrity because of a high interrupt ~~rate~~ rate on the controller. (Motor control)*
- Holes from chassis removed due to restrictions on the laser cutter hardware, used tape for mounting instead.

* MSP used to control motors via UART, also a better choice due to 6 COM outputs from 2 * 16-bit timers

vs 4 COM on 2 8-bit timers on the mockup.