
The Benefit of the SkiHiTek UAV Blimp Power System

The flexibility of the rotational design of the solar panel to operate under different angles toward the sun leads to the possibility to use the UAV Blimp power system in the areas where the sun is very low in the sky for a long duration of time.

To successfully integrate the rotational design of the solar panel in the system, the UAV Blimp power system must:

- ♦ Contain a charging code for the solar-cells to charge any type of battery.
- ♦ Contain a minimum of two (2) solar-cell clusters, and two (2) battery-cells to effectively test a code.
- ♦ Supply adequate thrust to propel blimp at reasonable velocity (~40 km/h) and ascend to operating altitude (~400 m).
- ♦ Supply adequate power for all other blimp sub-systems.



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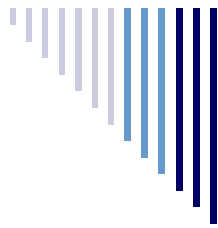
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SkiHiTek UAV Blimp Power System





SkiHiTek AUV Blimp Power System

What is SkiHiTek AUV Blimp Power System

The SkyHiTek AUV Blimp power system – is a fully autonomous aerial vehicle designed to sustain a long time flight through a programed flight path with very little input of the end user.

The SkyHiTek UAV Blimp power system consists of three main mechanisms (Figure 1): the

- Circuitry
- Conveyor mechanism
- Steering mechanism

These three (3) mechanisms functions simultaneously and navigate the system to perform the task.

The balloon, a conveyor system routes wires between the balloon and gondola. The steering turns the motors parallel to each other for maximum efficiency .

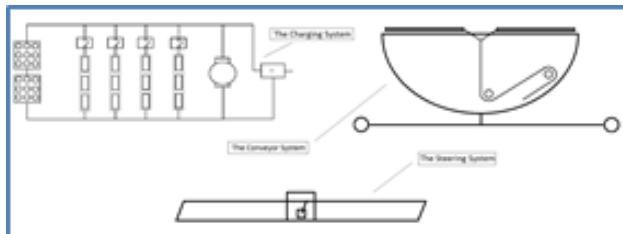


Figure 1. Three Mechanisms of the SkiHiTek AUV Blimp Power System

Circuitry

The electrical circuit provides power to the system through a series of solar cells and lithium- ion battery packs. This mechanism consist of the solar cells, the relay, the battery, micro-computer, drive motors, auxiliary out and motor drivers (Figure 2). The solar clusters cells gather sunlight and convert it to electricity for the battery packs contained of the balloon. The solar clusters and battery packs connected in parallel produce the correct voltage and amperage to charge the battery. The auxiliary electrical loads are regulated according to their operating specifications. Auxiliary electrical loads include the control systems, and servos. A programmable micro-computer distributes power from the batteries through the system despite of a sunlight condition

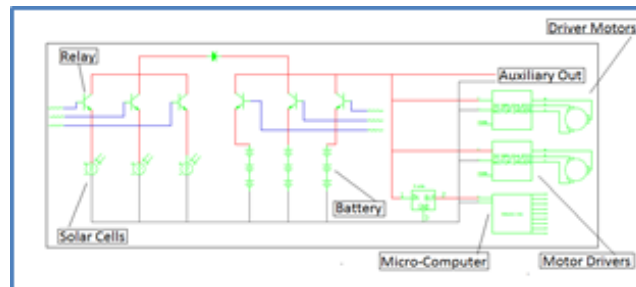


Figure 2. The circuitry of the SkiHiTek AUV Blimp Power System

Conveyor System

Due to the rotating nature of the blimp, a Conveyor cable routing mechanism is incorporated into the design. The conveyor passes wires from the rotating balloon to the stationary gondola and avoids any tangling or unnecessary stress on the wires. This mechanism consists of the rail system, the cable guides, and the spring (Figure 3). The three components operate simultaneously.

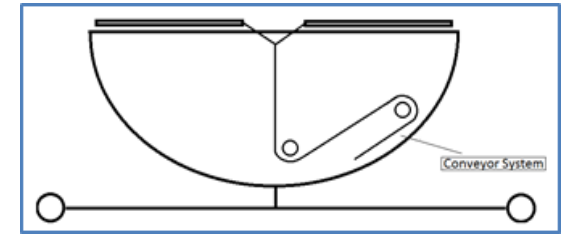


Figure 3. The conveyor system inside the balloon of the SkiHiTek AUV Blimp Power System

Steering System

The steering mechanism makes the propulsion motors angle towards each other from the both sides, from up and down and makes the rudders and elevators of the steering mechanism turn the system at any sharp angle. The steering system consists of the gondola mount, servos, carbon tubes, motor mounts, and motors. The steering system is attached to a secure mounting point within the gondola (Figure 4).

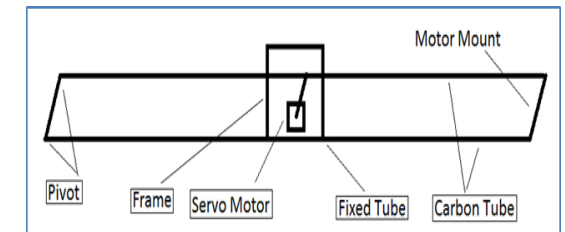


Figure 4. The steering mechanism of the SkiHiTek AUV Blimp Power System