

Improved RF-link performance for high altitude video-relay platforms

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Project Overview

For long distance mobile wireless coverage of cycling events the broadcast industry is using COFDM technology in the 2 GHz. band. Since these frequencies work "line of sight" for best performance an aerial relay like a helicopter or an airplane is inevitable. The video up-links are coming from camera motorbikes and have, for regulatory reasons, limited output power. Due to non-line of sight situations the RF-link towards the aircraft (flying at 20.000 ft.) is suffering. To overcome temporary dropouts in the up-link path the ISDB-T instead of the DVB-T standard has been chosen in combination with maximum ratio combining diversity and ASI switching. In addition to this technology Dutchview has developed a gyro stabilized multi-beam antenna.

Research questions

- Is the proposed antenna solving the lack of RF level.
- Is there an alternative construction for this antenna guaranteeing the same or better performance

Tasks

- Study the conditions were under the antenna has to perform it's task
- Verify if the prototype is performing up to its task
- Improve or change the prototype so it will meet the best achievable receive conditions.
- Prepare the antenna for aircraft certification
- Easy scalable for use on other frequencies
- Improve front to back ratio by adding GPS geolocation data in combination with muting the unused receivers.

The first four bullets are time constraint because the sporting season for outside races begins in March.

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