AirwareOS Compatible

Ground Control Station Interface

GSI Overview

The Airware Ground Station Interface (GSI) with Hardware-In-the-Loop Simulator (HIL-Sim) is a combination of autopilot command and control interface and rapid development/test platform for Unmanned Aerial Systems (UAS). It interfaces with AirwareOS autopilots for autonomous and manual control of vehicles in-flight and enables real-time simulation of missions and development of new capabilities on the ground.

AirwareOS Compatible

The GSI runs AirwareOS, a comprehensive platform for small commercial UAS development. By providing the essential elements of an operating system, AirwareOS handles the details and shifts the development focus to your UAS application.

Airware Now Offers a miniGSI

Airware now provides a smaller version of the GSI, the miniGSI, which is designed for applications with size and weight constraints on the ground.

- Small form factor ground station interface (dimensions: 1.89" x 2.34" x 0.75")
- USB powered (no batteries or power supply required)
- Optimized for tablet use in the field (when no HILSim features are needed)
- Cost effective solution for handheld and portable vehicles

Features

- EMI shielded aluminum enclosure for robust outdoor operations
- Serial pass-through to payloads connected to Airware os-Series autopilots (RS-232, RS-422, and RS-485)
- PPM interface to RC transmitters for extended-range RC control over the datalink
- Hardware-in-the-Loop Simulator included
- USB connection to a host computer, enabling computer or tablet based control of osAutoPilot and GSI functionality
- Static pressure sensor provides ground-level barometric pressure to aircraft altimeter for landing
- GPS input provides location of Ground Station to aircraft, enables automatic antenna pointing even in mobile applications
- Seamless integration with DGPS receivers, providing corrections to receivers on aircraft
- PWM, CAN, or Serial outputs to drive a 2-axis antenna pointer
- CAN2.0B port for future capability expansion and interfacing with other ground hardware
- Dimensions: 3.97" x 2.13" x 1.25"

Hardware-in-the-Loop Simulator

- Connects to any AirwareOS autopilot for real-time simulation of inertial, pitot-static, and GPS data
- Enables users to test new software features or plug-ins within the system without having to fly
- Embedded small form-factor 1GHz Linux computer controls dedicated simulation hardware
- Ethernet connectivity provides SSH access, model editing, and simulation data export
- Seamless Flight Gear connection on another computer for real-time visualization of simulated flight
- Closed-loop simulation at up to 500 Hz for high fidelity low-latency testing
- Full-featured development environment enables operator training, mission planning, and testing

Ground Control Software

Airware's Ground Control Station (GCS) software provides a powerful and intuitive user interface for controlling AirwareOS autopilots. The GCS allows you to create and execute detailed mission plans quickly and easily. Combined with the AirwareOS Dashboard configuration and maintenance application, you have everything you need to fly and maintain Airware's complete line of autopilots.

Key Features

- Create and fly missions with multiple waypoint actions (loiter, stare-at, and more)
- Display overlays from KML files that can represent restricted airspace and other areas
- Create and display points of interest
- Supports multiple online map providers with caching for offline use
- Load custom map tiles
- Manual camera gimbal and multi-rotor control via virtual joysticks or Xbox controller
- Display H.264 video from RTP and RTSP sources as well as analog video from a capture device
- Plug-in support for extending GCS functionality (such as custom payloads)
- Touch-friendly interface for tablet use