



# Control Station Description

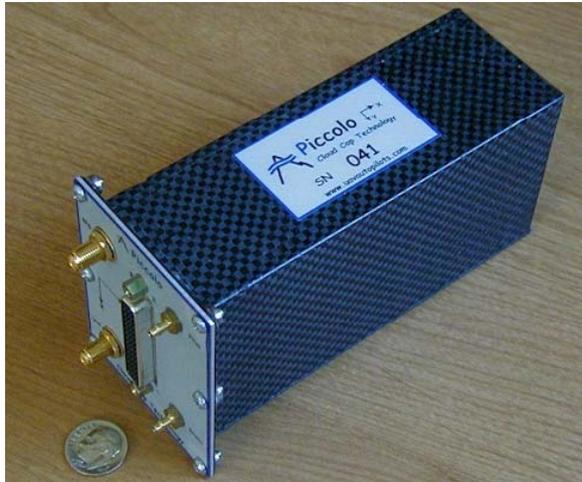


- ▶ Each UAS autopilot unit is monitored and controlled by its operator using laptop computers which are part of the ground control station. Each UAS has its own operator. During autonomous flight, the operator has full knowledge of the state of the autopilot unit including data such as the GPS location and flight path of the vehicle. The operator can also reconfigure flight plans in real time to suit a change in mission.
- ▶ Through the ground control station, the external pilot can assert manual control of any one of the UAS using an R/C style handset. This feature is used for takeoff and landing.





# Avionics and Control Hardware



Piccolo Avionics (One per UAS)



Piccolo Ground Station



Laptops w/ Control Software (One per UAS)





# UAV Control Interface - Piccolo

The screenshot displays four windows from the UAV Control Interface:

- Piccolo 147, [174025] 18:40:12; 11 December, 2003**: Shows GPS data (Latitude: 37.867852, Longitude: -122.267211, Height: 20.76), Air data (True Air Speed: 8.10, Altitude: -1.44, Air Temperature: 29), and System data (T: 43.00, RSSI: -71, lin: 0.31, Vin: 13.39). It also includes UHF radio settings and a deadman status of OFF.
- Piccolo 138, [174025] 12:02:55; 01 January, 2002**: Shows flight parameters (Loop TAS: 5.70, Altitude: 6.47, Turn rate: 20.45) and a table of commands (TAS, Altitude, Turn rate, Flaps, Tracker) with their current status and target values.
- Piccolo 144**: Shows flight plans and a map view with a 2.92 km vertical scale and 3.38 km horizontal scale. It includes options for flight plans, cursor mode, and map layers.
- Ground Station...**: Shows network control (Add Address, Rem Address, Remove All), system data (T: 41, RSSI: -71, lin: 0.27, Vin: 13.45), firmware (Version 1.1.7, Jul 7, 2003 Release), and UHF radio settings.

