Control Station

The ground command uplink and airborne control system consist of a high-quality off-the-shelf Pulse Code Modulation (PCM) transmitter and Direct Servo Control (DSC) receiver respectively as shown in Figure 2-4. The airborne control system operates on 10 KHz narrow band on 72MHz. Digital servos provide on board direct command to throttle and control surfaces including: ailerons, elevators, rudder, flaps, and spoilers. Digital servos also provide control commands to the pneumatic system distribution valves for the brakes and landing gear retract system.

Figure 2-4: AirSTAR Project UAS Flight Command and Airborne Control System

Several of the vehicles can also be controlled via an autopilot uplink 900 MHz command as shown below. The system utilizes a PC based laptop ground station with manual override capability for pilot in command monitoring and intervention. All flights are performed under line of sight, see and avoid conditions.