ORBITER
Communications

Aerial Datalink – The datalink sub-system provides the communication between the GCS and the Orbiter.

The link between the GCS and the Orbiter is composed of one uplink channel, through which the commands to the Orbiter and payload are transmitted, and one downlink channel through which the video and telemetry data are transmitted from the Orbiter to the GCS.

The datalink controller comprises a part of the Unmanned Multi-Application System (UMAS), an inertia measurement unit, avionics, and no additional control hardware of software is required. The datalink controller handles all uplink and downlink messages.

The interface between the datalink components and the UMAS is accomplished through standard serial communications points, including; (1) Video and telemetry transmitter, (2) Command receiver, and (3) Omni-directional antenna.

Command Receiver – The command receiver installed inside the right wing is a UHF receiver. The command receiver receives the commands sent from the GCS. The UMAS continuously tests the signal strength and quality. The UHF receiver characteristics are; (1) Frequency range UHF 337 – 512 MHz, and (2) Baud rate – 9600 Band.

Omni-Directional Antenna – The Orbiter is equipped with the following communication antennas (mounted in the wing tips;
(1) Uplink receiver – antenna gain 2.1 dB I, and (2) downlink transmitter – antenna gain 2.1 dBi.