MQ-8B Fire Scout Data Link Description

The MQ-8B Fire Scout Data Link Suite (DLS) provides line-of-sight uplink transmissions (command, control and voice communications) and downlink transmissions (imagery, AV status and health, and voice communications). The DLS contains a primary and a secondary data link. The Primary Data Link (PDL) is the TCDL with a (b) (3) uplink and (b) (3) downlink. The Secondary Data Link (SDL) is the AN/ARC-210 VHF/UHF radio with a (b) (3) half-duplex uplink and downlink. The VHF/UHF data link has the same uplink and downlink command/data capabilities as the TCDL, except that it does not have the bandwidth to transmit imagery.

The TCDL PDL is manufactured by Cubic Corporation, and is comprised of an Airborne Data Terminal (ADT), forward and aft AV-mounted omni-directional and directional antennas, and a Ground Data Terminal (GDT) with accompanying omni-directional and directional antennas. The TCDL link is a Ku band data link.
The ARC-210 based SDL is comprised of three ARC-210 radios in the AV, four radios in the GCS, and omni-directional ground and air antennas. Each air vehicle radio is equipped with a blade antenna arranged on the air vehicle designed to maximize 360 degree coverage to ground-based equipment. Each ground radio is equipped with a collapsible mast-mounted antenna.

In the GCS, secure voice communications are encrypted and transmitted to the AV. For secure communications relay, the AV transmits encrypted data. For non-secure communications, the GCS transmits unencrypted voice data and the AV retransmits the voice communication. The command and control link is always secure.

AV control during takeoff, landing and mission area ingress/egress is accomplished via the SDL, except for times when the operator wants to check the operation of the payload camera, IR or LDRF systems. In general, the PDL is reserved for operation and control of the AV in the mission area.