

## CRDA COA Application System Description – Communication

There are a variety of communication systems that are used for electronic communication between the control station and the unmanned aircraft. The communication system for the Aerostar UAS is typical of many UAS communications systems. The Aerostar communication system uses redundant uplink channels. The primary channel functions in the C-Band and the secondary channel functions in the UHF frequency ranges. The primary uplink (C-Band) channel is transmitted to the Aerostar via a directional dish (GDT) or an omni-directional antenna.. The secondary uplink (UHF) channel is transmitted via an omni-directional antenna. Both channels are identical and independent. The system only has one downlink (C-Band) channel from the UAV to the control station and provide both telemetry and video feeds. Both uplink and downlink channels have a high/low transmission power capability. The GDT is a directional dish antenna that rotates 360-degrees and -5degrees to plus 45-degrees of elevation to maintain direct communication with the Aerostar. The GDT us controlled by the internal pilot in the control station via GMS software. The GDT has four modes of operation (manual, position, GPS, Search and Scan). These modes enable the internal pilot to maintain contact with the Aerostar throughout normal flight and also during most contingency/emergency situations.



Prior to the operation of any unmanned aircraft at the NMSU UFTC that UAS's communication system will be evaluated and tested to determine its functionality and capabilities.