



# Radio Gateway for Unmanned Air Systems



The requirements for conducting Unmanned Air System (UAS) operations are specifically tiered to the nature of the flight operations and the specific classes of civil airspace. Aviation authorities require that an aircraft flying in civil airspace communicate on Air Traffic Control (ATC) radio frequencies using onboard radio transceivers.

Orbit's field proven end-to-end Radio Gateway enables access to airborne radios over the UAS' datalink. Whether via a LOS or satellite datalink BLOS, our solution enables UAS ground operators to access airborne radios to communicate with ATC as required. The system also supports secure radio communication between UAS operators via the UAV to special ground forces.

## Highlights

- Field proven, flexible and effective solution for all UAS voice communication needs
- Airworthiness Certified to DO-178C and DO-254
- DO-160G and Mil-Std qualifications
- Provides voice communication over IP from the UAS operator to all radio types (analog and digital) onboard the UAV
- Supports voice and data relay using onboard radios
- Secure voice mode, using integrated crypto in the ground control station
- Identical units for airborne and ground control station reduces the cost of ownership
- Voice compression standards such as G.711 / G.729 for minimizing bandwidth usage of the UAS datalink – VoIP & RoIP protocols ready
- Redundancy between onboard units
- Supports backup datalink and voice mode in case of main datalink failure

## The Radio Gateway LRU

Orbit's UAS Radio Gateway solution is powered by a fully certified and qualified state of the art avionics unit installed in the UAV and the Ground Control Station. The avionics unit includes the interfaces and required connectivity for voice transmission/reception from the UAS operator to/from radios onboard the UAV via its datalink.



Radio Gateway LRU

## Radio Gateway LRU Specifications

Analog Radio Interfaces	3
Ethernet ports	4
Serial Interface	RS485
Discrete inputs	8
Discrete outputs	5
Redundancy	Using 2 <sup>nd</sup> LRU in UAV
Backup in case of UAV datalink failure	Via Iridium or other satellite constellation
Civil Airworthiness Certifications	DO-178C, DO-254 & DO-160G
Mil-Std Qualifications	Mil-Std-810 & Mil-Std-461
Integration with SIP- VoIP Server	Rx/Tx Communication over Ethernet (RTP)
Voice Compression algorithms	G.711 / G.729
Wide Band Interface for supporting encryption devices	20Hz to 11KHz
Signal sampling rate	48KHz
MTBF	Above 20,000 hours
BIT coverage	Above 90%
Input voltage	28 Volt DC
Power consumption	Less than 20 Watt
LRU weight	Less than 4 lb (1.8 Kg)
Dimensions (Height x Width x Depth)	5" x 3.3" x 6.6" (127 x 84 x 167 mm) (Without connectors or support brackets)