

SkyARX[®]

KU-20 Qx

AIRBORNE TERMINAL



Airborne Modem

SkyARX Ku-20 Qx Terminal

Redefining Communication in
Challenging Environments
Overcoming the Keyhole Effect
with Four-Axis Antenna Systems

OVERVIEW

In equatorial regions, satellite communication systems face a unique challenge called the "keyhole effect." This phenomenon occurs when traditional 3-axis antenna systems require extremely high speed and acceleration to maintain tracking with satellites as the elevation angle approaches 90 degrees. The effort needed to sustain this tracking becomes infinitely large at 90 degrees, making it a significant obstacle for airborne vehicles operating near the equator region.

To overcome these challenges, the SkyARX Ku-20 Qx Terminal introduces an innovative four-axis antenna system. This advanced design provides stabilization against disturbances occurring at 80-90 degrees, particularly in the roll axis for airborne vehicles. By incorporating a fourth axis, the system significantly reduces the effort required to maintain satellite tracking, ensuring stable and reliable communications even in the most challenging environments. With its cutting-edge technology and sophisticated waveform structure, the SkyARX Ku-20 Qx Terminal sets a new standard for satellite communication systems. Its ability to transmit live, high-definition video and secure data during operation offers significant advantages for both civilian and governmental users.

Experience the future of satellite communications with the SkyARX Ku-20 Qx Terminal—where innovation meets reliability.



Airborne Antenna



Antenna Control Unit

AIRBORNE TERMINAL FEATURES

Secure High Speed Communication

- Protected IP traffic with AES encryption
- Innovative Four-Axis System
- High Velocity & Acceleration
- ITU-R S-728-1 Compliant
- MIL-STD-810G Compliant
- MIL-STD-461E Compliant
- MIL-STD-704F Compliant
- Qualified for 45.000 ft altitude
- Accurate satellite tracking with 0.2' RMS (FCC VMES)
- VCM/ACM
- Uplink Power Control
- QoS

Userfriendly Design For Aircraft Requirements

- RF integrated Fuselage mounted Antenna
- Modem placement without limits
- 28 VDC powered
- Only 3 LRUs

ENVIRONMENTAL & PHYSICAL CHARACTERISTICS

50.8 cm Airborne Antenna

- Power: Supplied through ACU (Max:450 W)
- Operating Temperature: -40 to +60 C
- Storage Temperature: -55 to +70 C
- Weight: 25.9 Kg
- MIL-STD-810G/MIL-STD-461E/ MIL-STD-704F

CTech Airborne Modem

- Power: 72 W @28VDC
- Operating Temperature: -40 to +55 C
- Storage Temperature: -55 to +70 C
- Weight: 5.4 Kg
- Dimensions: 312x261x133mm
- MIL-STD-810G/MIL-STD-461E/MIL-STD-704F

Antenna Control Unit

- Power: 15 W @28VDC
- Operating Temperature: -40 to +60 C
- Storage Temperature: -55 to +70 C
- Weight: 1.6 Kg
- MIL-STD-810G/MIL-STD-461E/ MIL-STD-704F

USE CASES

- Protected IP traffic with AES encryption
- Real Time Broadband ISR
- Live HD Video
- Search & Rescue
- Border Surveillance
- Secure Command & Control for UAVs

OPERATING FREQUENCY

Transmit : 13.75 to 14.50 GHz

Receive : 10.95 to 12.75 GHz

MODULATION & FEC

Forward/Return Link : VCM/ACM

Waveform : DVB-S2

RF/TRACKING PERFORMANCE

EIRP : 52.3 @14 GHz

G/T : 11.5 @11.7 GHz

Polarization : Linear (Vertical + Horizontal)

Axes



- Azimuth : 360° continuous
- Elevation : 5° to 90°
- Polarization : ±135°
- Cross Elevation : +/-13°

Velocity



- Azimuth : 150°/s
- Elevation : 150°/s
- Polarization : 150°/s
- Cross Elevation : 150°/s

Acceleration



- Azimuth : 200°/s²
- Elevation : 200°/s²
- Polarization : 200°/s²
- Cross Elevation : 200°/s²

Baseband Interfaces



- Data 10/100/1000 BASE-T Ethernet
- CLI RS-232/RS-422
- USB
- LINUX CONSOLE – RS232
- Encryption : AES-256 FIPS 140-2