



GX46 Airborne Satcom Terminal

Ka-band multi-purpose VSAT system





Multi-Role Airborne Terminal for Inmarsat Global Xpress and WGS

Orbit's GX46 is a modular, multi-role aviation terminal, optimized for use over Inmarsat's GX constellation and fully interoperable with the US/Australia Wideband Global Satcom (WGS) system.

GX46 operates across commercial and military Ka-bands through a 46cm (18") antenna, which is fully integrated with modems, electronics and software. The lightweight, small-footprint terminal couples high performance and Orbit's industry-leading reliability, enabling a wide range of communication opportunities for business jets, military mission aircraft and unmanned aerial vehicles (UAVs).

Built to fulfill the "everywhere, all the time" coverage requirements of the military and commercial airborne satcom markets, GX46 provides outstanding RF performance and dynamic response under the harshest environmental conditions.

Orbit offers a complete range of airborne building blocks, including airborne modems, BUCs, RF tracking functionality and ground stations, that maximize flexibility and enable future scalability. GX46 meets to the most stringent worldwide satcom and environmental regulations and military standards.

Tracking Superiority

The combination of Orbit's Advanced Control Loop™ algorithm and integrated RF tracking meets the demanding accuracy requirements of the Ka-band frequency range, ensuring maximum gain and performance.

Seamless Global Coverage

The GX46 enables worldwide connectivity, supporting the full range of Ka-band frequency bands, through Inmarsat's global GX satellite coverage or via the WGS system. The system is electronically switchable between systems and bands via Automatic Beam Switching (ABS) using industry-standard OpenAMIP and ROSS Open Antenna Management (ROAM) protocols.

Full Regulatory Compliance

The GX46 complies with industry regulations and standards including Inmarsat 5 and WGS and/or RTCA DO-160 F/G. Orbit has extensive experience qualifying and integrating terminals into new airframes and platforms.

Reliability and Durability

Designed to withstand the most demanding airborne conditions, GX46 features a rugged electro-mechanical design that complies with the most stringent environmental standards for shocks, bumps and vibrations.

Simple Integration and Installation

Orbit systems are shipped pre-assembled and pre-tested, and usually can be installed in a matter of hours rather than days. Interfaces and mechanical dimensions are standardized and ready for installation on a range of platforms.

World-Class Customer Support

With five regional service centers located around the globe, Orbit's trained support engineers are available 24/7 to handle the urgent needs of customers worldwide. A global inventory replenishment system ensures efficient spare parts distribution across regions. With a remote connection for troubleshooting and diagnostics, Orbit expedites service support and provides high cost-efficiency for its customers.



Serving Diverse Airborne Segments

—
Air Forces and Defense

—
Civil Aviation

—
UAVs

—
Commercial Aircraft

Key Features

—
Inmarsat GX Category 1 & 4 Certification (In process)

—
Designed for WGS (MIL-STD-188-164C)

—
G-MODMAN / RG-MODMAN compatible

—
User Friendly WEB User Interface

—
OpenAMIP and OpenBMIP Protocol support

—
SNMP Support

—
Optimized Size Weight and Power (SWaP)

—
Stabilization using various types of aircraft INS

—
Integrated RF electronics behind the Aperture

—
RTCA/DO-160G certification

GX46 Ka-Band Antenna System Specifications

Parameters	
Frequency Range [GHz] (Multi-role terminal support for both GX and WGS)	GX: Tx 29.0-30.0 GHz, Rx: 19.2-20.2 GHz WGS: Tx 30.0-31.0 GHz, Rx: 20.2-21.2 GHz
Antenna Size [cm / in]	46 / 18"
Polarization	Circular, 4-port, electrically switchable Co/Cross-Pol
G/T (Typical, at mid-band, at 30° elevation, without radome) @ 36,000 ft	15.2 dB/°K
EIRP Psat @ mid-band (without radome)	56.5 dBW Psat
Pedestal Type	Elevation Over Azimuth
Azimuth Range	Continuous 360°
Elevation Range (mechanical)	0° to 90°
Pointing Accuracy	≤0.2°
Weight on Tail - Single Line Replaceable Unit (LRU)	13.6 Kg
Installation Options	Multiple (e.g., Tail/Avionics Bay/Fuselage)
Input Voltage [RTCA/DO-160G]	+28 V DC, Typical
Operational Temperature	-55° C to +70° C
Altitude	55,000 ft
Environmental Conditions and EMI/EMC	According to Airborne RTCA/DO-160G

Note:
Orbit's flight-tested building blocks, variety of frequency-band configurations (e.g., Ku-band, ITU range) and turnkey solutions (including modem, RF tracking, ground station, etc.) are all available within short lead times.