



# MPT™ 46WGX Airborne Satcom Terminals

Ka-Band Multi-Purpose VSAT Systems



**APPROVED**  
GLOBAL XPRESS  
MANUFACTURER

# Multi-Role Airborne Terminal for Inmarsat Global Xpress, military Ka and WGS

Orbit's innovative MPT 46WGX is a modular, highly reliable multi-role aviation terminal, fully interoperable between the Wideband Global Satcom (WGS) system, military Ka frequency range and Inmarsat's Global Xpress (GX) constellation.

The MPT 46WGX operates across commercial and military Ka-bands through a 46 cm (18") antenna, fully integrated with modems, electronics and software. The lightweight, compact form-factor terminal couples high performance and Orbit's industry-leading reliability, maintainability and total cost of ownership, enabling a wide range of communication opportunities for a variety of airframe types.

Built to fulfill the "anytime, anywhere" connectivity needs of the military, governmental and business aviation markets, the MPT 46WGX provides outstanding RF, tracking performance under the harshest environmental conditions and compatibility with GEO, MEO, HEO and LEO satellites.

Orbit offers a complete range of airborne building blocks, including airborne modems, BUCs, RF tracking functionality, installation kits and audio management systems (AMS), that maximize flexibility and meet current and future mission requirements. MPT WGX adheres to the most stringent worldwide satcom and environmental regulations and standards.

## Key Features

WGS Ready

Inmarsat GX Category 1 & 4 certification (in process)

Compatibility with variety of modems

User-friendly web user interface (WEB-UI)

OpenAMIP and OpenBMIP protocol support

Low power consumption

Lightweight antenna design

Stabilization using various types of INS/IRU

Integrated RF electronics behind the aperture

RTCA/DO-160G Certification

## Serving Diverse Applications



Mission aircraft



Vertical Take-Off & Landing (VTOL)



Transport aircraft



Business jets



UAVs



Other mobile platforms



Rotary-wing platforms





## Industry Leading Performance

The MPT 46WGX, through its innovative RF design (patent pending), outperforms competing solutions in terms of terminal data rates and bandwidth efficiency. Designed with ISR and an increasingly bi-directional data rate demand in mind, the MPT 46WGX provides a very high return link capability making it a future-proof option for demanding missions.

## Tracking Superiority

The combination of Orbit's Advanced Control Loop™ algorithm and RF tracking meets the demanding accuracy requirements of Ka-band, ensuring maximum gain, signal stability, as well as optimized margins and throughput.

## Seamless Global Coverage

The MPT 46WGX enables worldwide connectivity, across a range of Ka-band frequency bands, through the commercial Inmarsat GX satellite network, military Ka or via the WGS system. The system is electronically switchable between networks, frequency bands and polarizations both in transmit and receive.

## Full Regulatory Compliance

The MPT 46WGX complies with industry regulations and standards including ITU, FCC, ETSI, Inmarsat Global Xpress, WGS ready and RTCA/DO-160G. Orbit has extensive experience qualifying and integrating terminals with modems and into new networks, airframes and platforms.

## Reliability and Durability

Designed to withstand the most demanding airborne conditions, the MPT 46WGX features a rugged electro-mechanical design that complies with stringent environmental standards for shock and vibration, and includes field proven building blocks to ensure high MTBF.

## Total Cost of Ownership

MPT 46WGX includes a simplified architecture of three (3) line replaceable units (LRUs); Antenna, Ka Power Supply Unit (KPSU) and Modem. With its lightweight, compact form factor, low power consumption and RF performance efficiency, the MPT 46WGX drives costs savings through the entire life cycle of the product.

## Simple Integration and Installation

Orbit systems are shipped pre-configured and pre-tested and can be installed in a matter of hours. Form factors and interfaces are standardized, enabling immediate installation on a range of platforms.

## World-Class Customer Support

Through our international service centers, Orbit's trained support engineers are available 24/7/365 to handle the urgent needs of customers worldwide. A global inventory replenishment system ensures efficient spare parts distribution across regions. With the capability to remotely access systems for troubleshooting and diagnostics, Orbit's real-time service support ensures parts and service availability to drive customer satisfaction.

## MPT 46WGX Ka-Band Antenna System Specifications

| MPT 46WGX  |   |
|--|---|
| Antenna  |   |
| Frequency Range  | Band 1: Tx 29.0-30.0 GHz, Rx 19.2-20.2 GHz<br>Band 2: Tx 30.0-31.0, Rx 20.2-21.2 GHz<br>Band 3 (optional): Tx 27.5-30.0 GHz, Rx 17.7-20.2 GHz |
| Aperture Diameter  | 46 cm / 18"   |
| Polarization   | Circular, 4-port, electrically switchable Co/Cross-Pol (Tx/Rx independent)  |
| G/T (Typical, at mid-band, at 30° elevation, without radome) @ 36,000 ft | 16.1 dB/°K  |
| EIRP Psat @ mid-band (Typical, without radome)                           | 56 dBW  |
| EIRP Spectral Density (EIRPsd) IAW FCC 47 CFR § 25.218                   | >42dBW/MHz  |
| Pedestal Type  | Elevation Over Azimuth  |
| Axial Ratio  | <1dB  |
| Azimuth Range  | Continuous 360°   |
| Elevation Range (mechanical)   | 0° to 90°   |
| Pointing Accuracy  | ≤0.2°   |
| Weight on Tail   | <14.25 Kg / <31.5 lb  |
| Antenna Installation Options   | As applicable (e.g., Tail/Hatch/Fuselage/Avionics Bay)  |
| Vibrations   | RTCA/DO-160G section 8, category R, curve E & E1  |
| Operational Temperature  | -55° C to +70° C / -67° F to 158 ° F  |
| Altitude   | 55,000 ft   |
| KPSU   |   |
| Power Consumption  | 220W Typ.   |
| Weight   | <5 Kg / <11 lb  |
| Power input  | +28VDC  |
| Power Consumption  | 220W Typ.   |
| Vibrations   | RTCA/DO-160G section 8, category R, curve E   |
| Modem  |   |
| Interoperability   | G-MODMAN / RG-MODMAN and others   |