



AL-7103 MKII



1.15m (45") Ku-Band/X-Band Maritime Stabilized VSAT System

Broadband without Boundaries

OrSat is a high-performance maritime stabilized VSAT system that empowers high-speed, two-way broadband communications for mission-critical and data-hungry applications vital to boosting operational productivity and crew morale. A field-proven, uniquely designed system, OrSat sets the standard for high availability, stabilization, RF performance and ease of operation. Providing always-on connectivity under the most severe sea conditions, OrSat enables myriad applications and IT solutions including voice calls, fax, email, web browsing, videoconferencing, extended organizational network capabilities, and remote support, while meeting stringent regulations and keeping costs under control. With over 1,000 deployments on frigates, container ships, offshore drilling support vessels, mega yachts, and other vessels, OrSat is the leading choice for delivering robust Ku and X-band satellite communications to the most demanding customers.

Superior RF Performance & Efficiency

Outstanding RF performance, coupled with adaptive coding modulation (ACM) available on modern modems, improves satellite resource usage and always-on connectivity on the fringes of satellite coverage.

Enhanced Global Coverage

Automatic beam switching (ABS) support for seamless global satellite roaming through industry-standard OpenAMIP protocol. Electrically switchable polarization for easy satellite switching and increased system versatility. Exclusive mechanical design and zero "keyholes" at zenith or horizon.

Industry-Leading Compliance & Certification

Strict regulatory requirement compliance, including type approval by satellite operators such as Eutelsat and Intelsat, certification by Anatel, FCC, ST-1, Paradigm (X-Band), and others, and compliance with STANAG 4484 (X-Band). Full maritime environmental-standard compliance including vibrations, shock and EMI/RFI.

FEATURING

- Highly efficient dual-offset Gregorian 1.15m (45") Ku-band antenna housed in a low-loss 1.28m (50") radome
- Superior stabilization and tracking for outstanding system availability under severe sea conditions (Eutelsat-certified)
- Quick and simple installation, single cable for below-deck connectivity
- Advanced remote-monitoring capabilities enabling complete replication of the system interface to any remote PC
- SNMP interface to network management systems
- Modular field-replaceable units for streamlined maintenance
- Wide-band LNB and co-cross polarization feeds for enhanced global coverage
- Broad support of BUC options: 4W/8W/16W Ku-band (STD or EXT) and 16W X-band

OPTIONAL FEATURES

- Field replaceable X-band RF kit (in under 1 hour)
- Dual-system configuration (with a single controller) to overcome blockage

Orbit Communication Systems provides high-performance maritime satellite communications solutions for mission-critical applications. With decades of experience and thousands of deployed installations, Orbit's innovative and reliable VSAT and TVRO solutions deliver broadband data communications and TV reception to users across the globe. Orbit's robust marine-stabilized solutions, backed by a worldwide support network, support the broadband communications needs of offshore oil & gas, commercial shipping, and naval applications.

OrSat™ AL-7103 MKII Ku/X-Band Technical Specifications

| | |
|--|---|
| Antenna Type | Dual offset Gregorian |
| Antenna Size | 1.15m (45") |
| Radome Size | D: 1.28m (50") H: 1.61m (63.4") |
| Dynamic Accuracy | 0.1° RMS |
| Dynamics: Roll Pitch Yaw Turning Rate | 30° @ 8 Sec 15° @ 8 Sec 8° @ 15 Sec 10°/Sec |
| Ship Gyro Interface | NMEA 0183, Step by Step, Synchro |
| Modem Interface | L-Band |
| System Weight (including Radome) | 270Kg / 595lb |
| Environmental Conditions Compliance | EMC: IEC-EN 60945 Safety: EN 60204-1, ISO 12100-2 Shock: STD 810E Method 516.5 Pro.1 Vibration: MIL-STD-167-1 (Mast Mounted). |

| | Ku-Band | X-Band |
|---|---|---|
| Operation Frequency | Tx: 13.75-14.5GHz Rx: 10.95-12.75GHz | Tx: 7.9-8.4GHz Rx: 7.25-7.75GHz |
| Antenna Polarity | Linear H/V | Circular Tx-RHCP Rx-LHCP |
| Antenna Gain | Tx: 42.5dBi @14.25GHz Rx: 41.0dBi @11.70GHz | Tx: 36.3dBi @8.15GHz Rx: 35.6dBi @7.5GHz |
| Antenna System G/T (typical) | 21.1dB/K° @ 12.5GHz (Clear sky 30° elevation) | 13.7dB/K° @ 7.5GHz (Clear sky 20° elevation) |
| Radome Loss (typical) | 0.3dB | 0.3dB |
| System EIRP (typical) | 47.5dBW (with 4W BUC) 50.5dBW (with 8W BUC) 53dBW (with 16W BUC) | 47.0dBW (with 16W BUC) |
| Cross-Pol Discrimination | 35dB | 21.3dB |
| BUC Options | 4W, 8W or 16W BUC (STD or EXT) | 16W BUC |
| LNB Options | Wide band global LNB • 10.95 to 12.75GHz or choice of: • 10.95 to 11.70GHz • 11.70 to 12.20GHz • 12.25 to 12.75GHz | 7.25-7.75GHz |
| Power Requirements (typical) | 90-260 VAC 50/60 Hz, 350W (4W BUC); 400W (8W BUC); 460W (16W BUC) | 460W (16W BUC) |

* On site X-Band upgrade RF kit Includes: Feed, RF Front End (OMT, TRF, etc), LNB, BUC, Accessories

Specifications are subject to change without prior notice

OrSat™ Block Diagram

