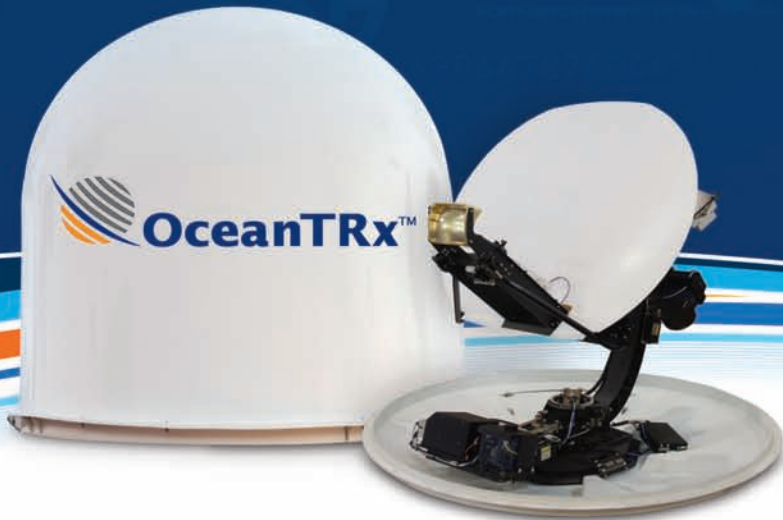




# OceanTRx™ 4

1.15m (45") Maritime Stabilized  
VSAT System



Where Innovation  
is Standard



## Global Broadband Evolution

OceanTRx™ 4 is an innovative platform supporting a variety of 1.15m stabilized maritime antenna system configurations in X, Ku and Ka bands. As a common platform, it is inherently designed to accommodate the current and future needs of the maritime market. Built to empower mission and business-critical applications, OceanTRx™ 4 features outstanding RF performance, system availability and dynamic response under virtually any sea conditions. As such, the system is an optimal solution for the broadband communications needs of myriad maritime platforms such as frigates, container ships, offshore drilling support vessels, mega yachts, and other vessels.

## OceanTRx™ 4 VSAT system:

### 500 Series

#### **Ka inherent support**

The 500 Series features built-in Ka fully compatible design to ensure smooth migration to future high-speed Ka services - for the entire Ka range - using GEO and MEO satellites. OceanTRx™ 4-500 provides multi-band frequency support for Ku, Ka and X bands, based on field exchangeable kits.

#### **Designed for Reliability and Durability**

Designed to withstand the most demanding sea conditions, OceanTRx™ 4 features a low-intensity electro-mechanical design and complies with the most stringent environmental standards for shocks, bumps and vibrations – including MIL-STD-167-1A and DNV 2.4 Class C, as well as IEC-60721 and MIL-STD-901D (Grade B) standards in its enhanced configuration for defense and offshore O&G applications.

#### **Rapid Low-Cost Installation**

OceanTRx™ 4 is quick and simple to install, since it does not require balancing and uses a single cable for below-deck connectivity. Shipped fully assembled and pre-tested over satellite, OceanTRx™ 4 can be installed in a mere matter of hours, dramatically shortening your installation time as compared to equivalent solutions.

#### **Enhanced Serviceability and Platform Commonality for Cost-Effective Operations**

Designed for efficient on-board serviceability and maintainability, OceanTRx™ 4 features highly accessible pedestal design, enabling convenient service support and field upgrade process that does not require accurate or periodic balancing. As part of ORBIT's new OceanTRx™ product line, OceanTRx™ 4 shares common electronic field-replaceable units (FRUs) with ORBIT's OceanTRx™ 7 system, allowing for lower cost of ownership, easier maintenance support, and shorter response times.

#### **Superior Performance & Air-Time Efficiency**

Outstanding RF performance, combined with the modem's adaptive coding modulation (ACM) technology, improves satellite resource usage and ensures always-on connectivity on the fringes of satellite coverage.

## Covering Diverse Maritime Sectors

- Offshore Oil & Gas (O&G)
- Commercial Shipping
- Naval
- Yachts



### High Versatility and Multiple Configurations

Built-in support for a wide range of configurations with different RF packages (X\*, Ku, Ka\*) and BUC power levels (up to 25W without cooling) facilitates field upgradability without the need for accurate balancing. The system supports dual or triple system operation and comes with either a white or gray radome.

### Seamless Global Coverage

OceanTRx™ 4 ensures worldwide connectivity by supporting the full range of Ku or Ka band frequencies using optional RF feeds for GEO or MEO satellites. Operating with satellites across geographical regions, OceanTRx™ 4 delivers seamless global coverage via automatic beam switching (ABS) achieved through the industry-standard OpenAMIP and ROSS Open Antenna Management (ROAM) protocols. Electrically switchable polarization facilitates satellite switching and increases system versatility.

### Remote Connection, Monitoring, Diagnostics and Troubleshooting

Advanced remote monitoring capabilities allow complete replication of the system interface to any remote PC. Combined with an inherent logger and spectrum analyzer, it enables off-site technicians to remotely monitor and operate the system, or carry out troubleshooting and diagnostics as if they were on the ship, thereby reducing operational costs. Open platform design supports the use of SNMP for carrying out network and system management, while enabling system integration with any network operations center (NOC). Secured remote connection is available for software upgrades.

### Strict Regulatory Compliance and Certifications

OceanTRx™ 4 complies with industry regulations and standards for X, Ku and Ka bands including ITU, FCC, ETSI, EutelSat, IntelSat, ANATEL regulations (for Ku & Ka Bands), as well as “STANAG 4484” and “Skynet 5-Paradigm” (for X Band).

### World-Class Customer Support

With five regional service centers located around the globe, ORBIT’s trained support engineers/technicians are available 24x7 to handle the immediate needs of customers worldwide. A global inventory replenishment system ensures efficient spare parts distribution across regions. By using remote connection for troubleshooting and diagnostics, ORBIT expedites service support and enhances overall cost-effectiveness for its customers.

\* Field upgradable upon release

# OceanTRx™ 4-500 Typical Features and Specifications

OceanTRx™4 – General Features	
Antenna Type	Dual offset Gregorian
Antenna Size	1.15m (45")
Radome Size	D: 1.55m (61") H: 1.69m (67")
Dynamic Accuracy	0.1° RMS
Dynamics (Ship motion): Roll Pitch Yaw Turning Rate	30° @ 8 Sec 15° @ 6 Sec 8° @ 15 Sec 10°/Sec
Range of Mechanical Pedestal Axes	Azimuth: Continuous Elevation: -30° to +120° Cross Elevation: -75° to +75°
Ship Gyro Interface	NMEA 0183, Step by Step, Synchro
Modem Interface	L-Band
System Weight (including radome, RF dependent)	< 200Kg / 441lb
Enhanced Environmental Conditions Compliance	<ul style="list-style-type: none"> <li>Shock &amp; Bump: IEC-60721-4-6 class 6M3, MIL-STD-901D (Designed to Grade B), MIL-STD 810</li> <li>Vibration: IEC-60721-4-6 class 6M3, MIL-STD-167-1 (Mast Mounted), DNV #2.4 Class C</li> <li>Temperature: -25°C+55°C as per IEC 60945:2002</li> <li>Wind: Up to 100 knots</li> <li>Rain &amp; Spray: IEC 60945 Section 8.8/IP Rating X6</li> <li>Humidity: IEC 60945:2002; Damp Heat Humidity: 93% (+/-3%) @ 40°C</li> <li>Safety: EN 60204-1; ISO 12100-2; EN 614-1; IEC 60945:2002</li> <li>EMC: Conducted &amp; Radiated Emission Immunity; IEC 60945:2002; IEC 61000-4-2,3,4,5,6,11</li> </ul>

	OceanTRx™4-500	
	Ku-band	Ka-band
Operation Frequency	Tx: 13.75-14.50 GHz Rx: 10.95-12.75 GHz	Tx: 27.6-31.0 GHz Rx: 17.8-21.2 GHz Configuration dependent, Consult ORBIT
Antenna Polarity	Linear H/V	Circular Polarity: Tx-RHCP/Rx-LHCP, or Rx-RHCP/Tx-LHCP, electrically selected
System G/T (Typical, complete system including radome)	20 dB/K° @ 12.5GHz (Clear sky, 30° elevation)	20 dB/K° @ 19.7 GHz (Clear sky, 30° elevation)
System EIRP (Typical, at mid range, including all losses)	53.5 dBW (With 16W BUC)	57 dBW (With 10W BUC)
Cross-Pol Discrimination	35dB	24dB
BUC Options	8W/16W/25W/40W	5W/10W/20W
Power Requirements (Typical, single ADE/BDE; Auto ranging input of 90-130VAC or 200-250VAC 50/60 Hz)	ADE: 400W (16W BUC) BDE: <100W RMS	ADE: 400W (10W BUC) BDE: <100W RMS

Specifications are subject to change without prior notice

## OceanTRx™ 4 Typical Block Diagram

