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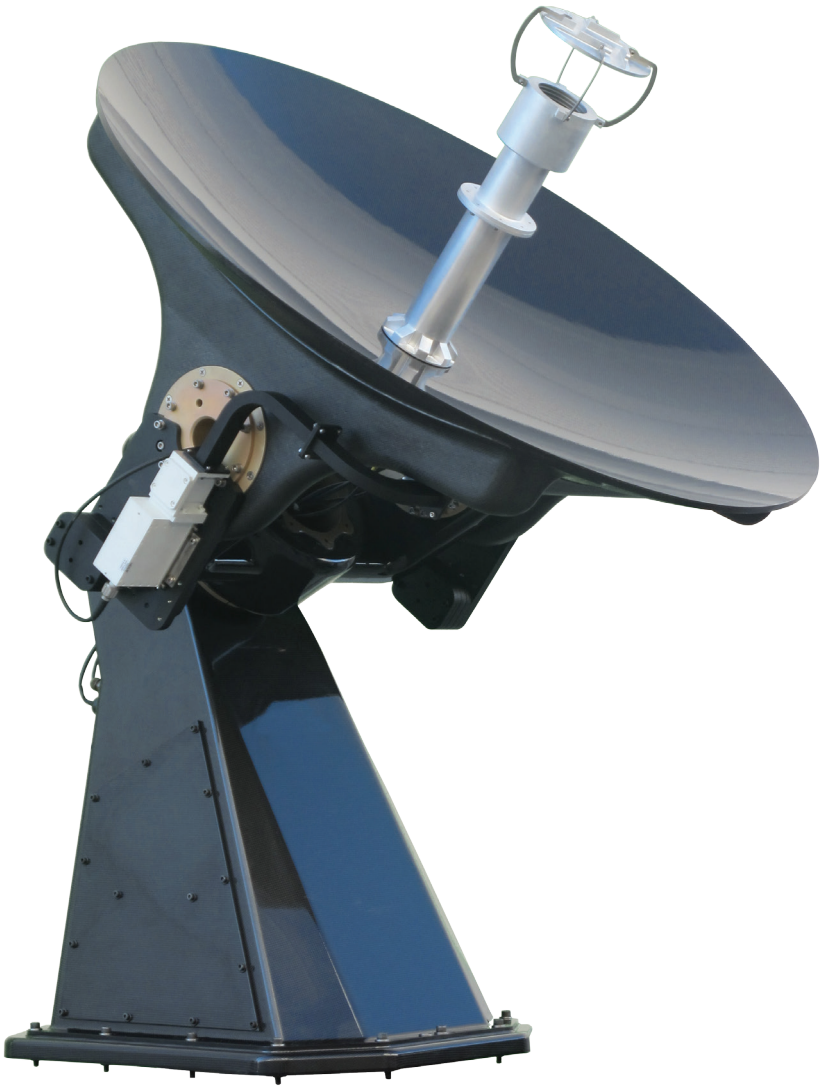
# AcroSAT

## SHIPBORNE SATELLITE COMMUNICATIONS TERMINAL



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## SHIPBORNE SATELLITE COMMUNICATIONS TERMINAL

Success of the naval campaigns depends on command control and communication systems, which provide reliable information to the decision makers and use available sensors and weapons efficiently. Executing these command control functions efficiently depends on providing seamless, reliable communication environment with high data rate between all elements/headquarters in the tactical and strategical level. With its ability of beyond line-of-sight communication and endurance to various geographical conditions, Satellite Communication Systems are indispensable.

AcroSAT, is a next generation maritime terminal incorporating the latest technology. It is designed to extend SATCOM capabilities of small to large ships according to their data requirements.

The antenna assembly is designed as 3-axis precisely stabilized gimbal carrying 105 cm antenna and enclosed in a lightweight protective radome. The utilization of cross-elevation axis allows the antenna to avoid keyhole effect at high elevation satellite look angles. The antenna is driven by azimuth, elevation and cross-elevation direct-drive motors from antenna control unit. Direct-drive motors provides better inertial stabilization, smooth operation and precise pointing. Antenna control unit utilizes control of single antenna tracking and also dual antenna tracking to provide extended coverage.

The antenna is manufactured from carbon fiber, thus this makes the antenna lightweighted and strong. Moreover, compactness of the antenna take account the space constraints on ships.

The antenna also exhibits high RF Performance with its compact design. According to needed EIRP, more powerful amplifiers can also be added.

**General**

- Integrated LNB, GPS and Gyro Modules
- Customized Non-transmit zone profile generation
- Improved RF performance along with compact design
- Configurable for different naval platforms according to the user requirements

**Functional Specifications**

- 3-Axis Stabilization and Tracking
- Dual or Single antenna control
- Design for rejection of keyhole effect

**Electrical Specifications**

- X-Band Operation Frequency
  - Rx (LHCP) : 7.25 – 7.75 GHz
  - Tx (RHCP) : 7.9 – 8.4 GHz
- Antenna Gain : 36 dBi
- Receive System G/T : >12.4 dB/K
- Cross Polarization Discrimination : >25 dB

**Mechanical Specifications**

- Antenna Size : 105 cm
- Lightweight and strong composite structure
- Direct-drive antenna motors
- Axis Limits
  - Azimuth : ±360° (continuous)
  - Elevation : -20° to +125°
  - Cross-L : -65° to +65°
- R/P/Y Amplitude
  - Roll : ±35°(Period of 4.5s)
  - Pitch : ±15° (Period of 3.5s)
  - Yaw : ±7° (Period of 3.5s)

**Environmental Specifications**

- Environmental Conditions : MIL-STD-810G
- Platform Shock : MIL-S-901D
- EMI/EMC : MIL-STD-461F
- Grounding : MIL-STD-1310G



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