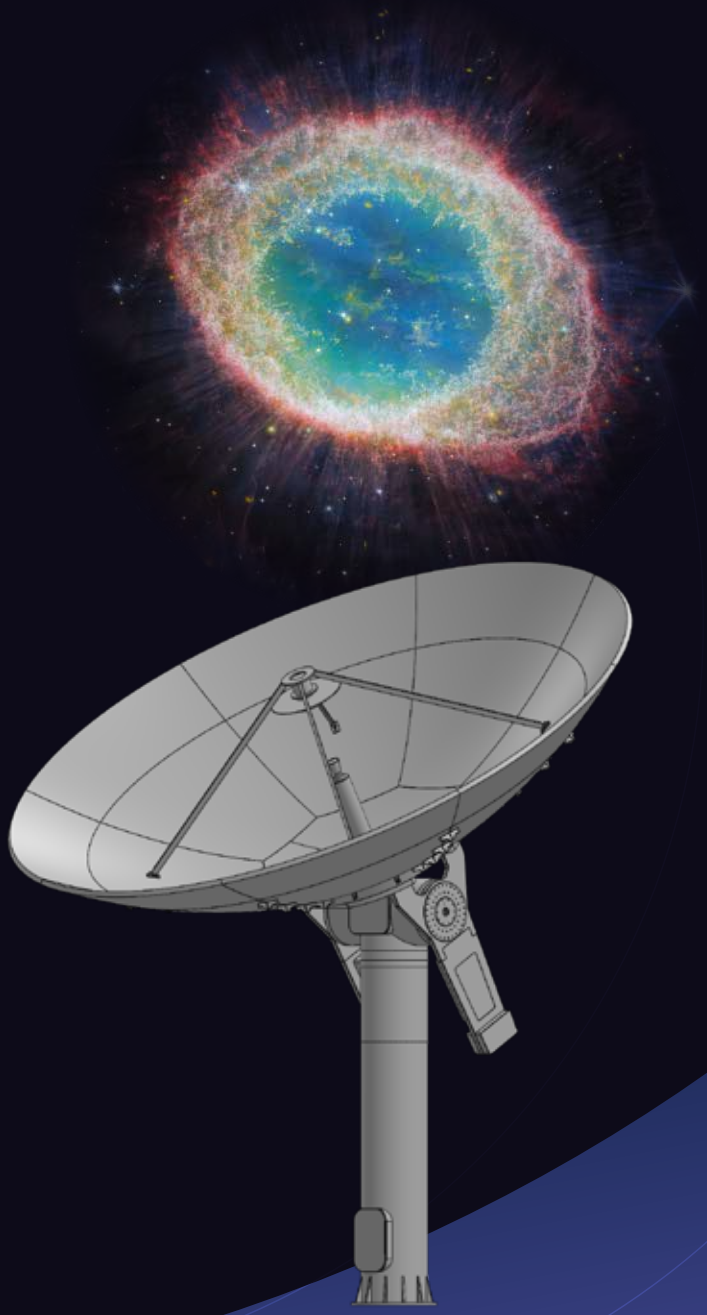
TEXAS SPACE COMMUNICATIONS™

ASTRA 90

9.0M 2-AXIS X-BAND RX



Product Overview

The 9.0-meter X-Band Receive-Only Tracking Antenna is a high-performance ground communications system designed for demanding space science and deep-space telemetry missions. Optimized for precision two-axis tracking, long-duration spacecraft support, and extended X-band downlink coverage, the antenna delivers exceptional receive sensitivity and high gain performance for spacecraft in GEO, cislunar, and deep-space regimes. Engineered for continuous duty operation in harsh environments, the system provides reliable acquisition and stable tracking, advanced feed architecture, and robust interface flexibility for mission-critical ground systems. With high mechanical accuracy and advanced RF performance, it ensures stable, high-fidelity telemetry reception for space environment monitoring, scientific payloads, and deep-space communications.

Positioner Features

Reflector Size: 9.0m diameter

Feed System: Cassegrain feed assembly optimized for X-band receive operations, including extended X-band deep-space telemetry support.

Polarization Options: Dual Circular Polarization (LHCP/RHCP) selectable or simultaneous operation

Autotrack Option: Autotrack system for X available

Radome Option: Available for added protection and enhanced operational longevity in extreme environments

Performance Data

Parameter	Specification
X-Band Receive Frequency	8.000 – 8.500 GHz
X-Band Polarization	Selectable LHCP and RHCP or simultaneous operation capability for Rx
X-Band G/T	35.5 dB/K (typical) at 25°C, high elevation
X-Band Receive IF Frequency	Tunable to 720MHz ±200MHz or 1250 MHz ±200 MHz
Frequency Stability	External reference locked OCXO holdover maintains stability

Antenna Control & Tracking System

Tracking Mode: Program Track/Auto Track
Ephemeris Support: OEM/TLE program tracking

Azimuth Axis Range: 360° continuous
Elevation Axis Range: 0° to +180°

Velocity & Acceleration:
Software-limited to 15 deg/s angular velocity and 15 deg/s² angular acceleration

Pointing Accuracy: < 0.05° RMS for highly accurate satellite acquisition and tracking

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Electrical and Environmental

Operating Temperature: -40°C to +55°C
Wind Speed: Operational < 88 km/h, survival < 200 km/h
Humidity: 100% outdoor conditions
Operating Altitude: 3000m
Input Power: 200 - 240 VAC, 20 A, 50/60 Hz, Three Phase
Weight: 8200 kg (Estimated)

Warranty

Warranty Period: 2 years

* Specifications subject to change.

Control Systems

Antenna Control Unit

Full Ethernet-based control with web interface, supporting REST or JSON protocols for easy integration to M&C software. Includes integrated safety interlocks, auto-shutdown features, and multi-satellite tracking capability.

Security

All external interfaces are encrypted with TLS1.3 or SSH with support for advanced features such as mTLS and JWT.

Dehydration System

Built-in pressurization technology to protect sensitive components from environmental damage.

Overview