

## **1500 18.3-METER ANTENNA SYSTEM**

### **Multi-band, multimission capability**

**A platform for space missions, satellite communications (SATCOM) and radar applications**

#### **FULL HEMISPHERIC COVERAGE**

The positioner provides full hemispheric coverage for tracking LEO, MEO, GEO or HEO satellites. Each axis is equipped with dual counter-torque drives with zero backlash for optimal pointing accuracy. The design accommodates mounting of radio frequency (RF) high power amplifiers and converters near or on the reflector for efficient RF performance.

The split feed designs allow the antenna to be configured to support transmit (Tx) and receive (Rx) within multiple bands of operation in a single aperture. For the highest precision tracking, a monopulse feed can be provided on any of the receive bands.

#### **INTEGRATED RF SUBSYSTEM/ CONTROLLER**

The Model 1500 antenna system includes a fully integrated RF subsystem and

receive/transmit electronics to interface to the infrared (IF) communications equipment. The antenna mounted RF subsystem includes LNAs, amplifiers, and RF/IF converters to interface with customer provided baseband modems.

The Antenna System Controller (ASC) is the user's primary control and monitor interface to the antenna. It features an embedded Graphical User Interface (GUI) and is equipped with an industry standard network interface (SNMP v3 over Ethernet) that provides real-time command and control of all critical devices on the antenna. The ASC is accessed locally or remotely by any modern web browser to perform all scheduling, command/control, monitoring functions and maintenance activities - regardless of the computer's operating system. The ASC also features a suite of industrial modules to perform most system control and monitoring tasks.



#### **BENEFITS**

- > **Two-axis positioner for LEO tracking altitudes as low as 400 km.**
- > **Positioner is designed to accommodate close proximity mounting of amplifiers and converters for efficient RF performance.**
- > **System can be configured to support Tx and Rx in multiple bands of operation eliminating the need for a separate system for each frequency band.**
- > **The Antenna Control System (ASC) features an embedded Graphical User Interface (GUI) for real-time command and control locally or remotely through a modern web browser.**
- > **Advanced antenna optics provide optimal G/T in any band of interest for greater efficiency.**
- > **Base of pedestal provides an air conditioned environment for the comfort of support personnel.**



## PERFORMANCE CHARACTERISTICS

Frequency range	User defined feeds available for: L-/S-/X-/Ku-/Ka-/Q-band
Reflector aperture	18.3 meters (optional apertures from 13 to 22 m)
Antenna elevation axis height	12 meters (nominal above grade)
Wind (operational, steady state)	65 mph (105 kph)
Wind (drive to stow)	68 mph (109 kph)
Wind (survival, stowed)	125 mph (200 kph)
Velocity	Elevation = 7.5°/sec, $\alpha = 7.5^\circ$ /sec
Acceleration	Elevation = 5°/sec, $\alpha = 5^\circ$ /sec
Elevation travel	-1° to 181°
Azimuth travel	±410°
Pointing accuracy (non-wind)	0.010°, 22 bit encoder (0.000085° resolution)
Backlash	Zero (dual counter-torque drives in each axis)
Humidity	Outdoor equipment 100% condensing
Rain	4 inches per hour
Ice survival	0.5 inch max. radial
Power requirements	120/208VAC, 3 PH, 50/60 Hz, 84 kVA nominal
Temperature	-20 to + 55 deg C (operational) -40 to + 70 deg C (survival)

## OPTIONS INCLUDE:

- > Simultaneous L-/S-/X-/Ka-band operation
- > STIG compliant ASC software information assurance maintenance program
- > Turnkey system engineering and integration
- > Site installation and test services
- > Optical interface for IF and ASC
- > Positioner only supply for test ranges or customer supplied loads

### 1500 18.3-Meter Antenna System

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