



## 5.0RXP1 X-Band Geoscience Reception Antenna System

Geoscience satellite reception antenna and demodulator solution

The 5.0RXP1 is a Geoscience satellite reception system including a 5.0 meter three axis antenna system, X-Band prime focus feed, downconverter and a high rate demodulator to collect data from common high rate geosciences satellites.

### System Features

Standard equipment includes, positioner, feed mounting poles, ACU-3 antenna control unit and a complete maintenance tool kit. The positioner also provides standard options for AC or DC power and 100BASE-T Ethernet on the elevation arm.

Completely eliminating reception loss caused by what is sometimes called a "keyhole effect" in a near overhead pass the 5m positioner utilizes three axis tracking to reduce the worst case maximum tracking velocity requirements for a low LEO to about 7°/sec allowing use at any practical frequency.

### Components

- 5.0AE3BP-5m antenna positioner system with 5.0m composite reflector
- X-band feed covering 8000-8400 MHz with selectable polarity and built in block converter to 1250 MHz +/- 200 MHz IF
- Optional simultaneous polarity feed
- Optional Cassegrain feed available in selectable or simultaneous polarity
- High rate demodulator with aggregate limit of 1.2 Gbps
- Built in ACU with built in GNSS receiver to precisely track satellites using TLE's
- Dehydrator DHR150 for system pressurization
- Custom system cables up to 100m included, optional additional length
- Optional RF over fiber interface allows the antenna system to be remotied up to 10km
- Custom crates suitable for air or ocean transport
- Up to 4 days of onsite SME time to ensure a quality installation

### Features

- A complete antenna system front end ready to track and receive common Geosciences satellites with options up to initial "satellite data on disk" ready for high level processing
- G/T typical at high elevation near 31 dB/K
- Bundle package provides a high reliability antenna positioner with minimal maintenance requirements providing the lowest total cost of ownership
- Antenna system design life 25 - 30 years
- Control interfaces use JSON formatted files that are easily understood by software developers
- Rapid installation (typical 3 - 4 days)
- Highly Responsive Service Organization
- Rapid delivery, 5 months typical
- Includes 2 year limited warranty



### Applications

- Tracking, reception and optional processing of Geosciences satellites up to initial data files on disk. Use as a satellite data collection system front-end for satellite high level data processing systems that are controlled by customer provided M&C software
- Typical satellites:
  - Landsat
  - Worldview
  - Radarsat
  - Sentinel
  - Spot
  - SAR Satellites
  - Future satellites requiring similar G/T

## Operational Specifications

Azimuth Maximum Velocity.....	>20°/ Sec
Azimuth Maximum Acceleration .....	Up to 60°/ Sec <sup>2</sup>
Azimuth Maximum Torque .....	Peak: 9897 Nm (7300 ft/lbs) ..... Continuous: 6646 Nm (4900 ft/lbs)
Azimuth Maximum Travel .....	Unlimited Rotation
Elevation Maximum Velocity .....	>20°/ Sec
Elevation Maximum Acceleration .....	Up to 60°/ Sec <sup>2</sup>
Elevation Maximum Torque .....	Peak 9897: Nm (7300 ft/lbs)..... Continuous: 6646 Nm (4900 ft/lbs)
Minimum Tracking Elevation .....	-5°
Tilt Axis Maximum Velocity .....	>20°/ Sec
Tilt Axis Maximum Acceleration .....	Up to 60°/ Sec <sup>2</sup>
Tilt Axis Maximum Torque .....	Peak: 9897 Nm (7300 ft/lbs)..... Continuous: 6646 Nm (4900 ft/lbs)
Tilt Axis Maximum Travel .....	Unlimited Rotation
Brake Holding Torque.....	19,659 Nm (14,500 ft/lbs)
Total System Tracking Accuracy.....	0.1°
Absolute Position Feedback Accuracy .....	±0.006°

## Electrical, Mechanical and Environmental Specifications

Input Voltage, Frequency.....	208 -240 VAC, 20 A (5A Typical), 50/60 Hz, Single Phase
Operating Altitude .....	3000m Above Sea Level
Operating Temperature .....	-40° C to +55° C
Operating Maximum Wind Speed .....	Continuous 88 km/h (55 mph), gusts to 105 Km/h (65 mph)
Maximum Wind Speed In Stow .....	200 km/h (125 mph)
Non-Operating Maximum Rain Load .....	25 cm (10 inches) Per Hour
Maximum Ice Load .....	13 mm (0.5 inches)
Weight .....	2,268 kg (5000 lbs)
Safety, Emissions, and Machinery Directive Ratings .....	CE Marked-Tested by Independent Labs

## Electrical Cabinet and External Controls:

The electrical cabinet is equipped with the following safety devices:

- Emergency stop switch
- Audible warning annunciator
- Main Steps / Tie and Handle Points
- Visual warning indicator
- Padlocks to lock the left and right sides of the electrical cabinet

5.0AE3BP antenna positioners are compliant with CE Machinery Directive IEC 60204-1

