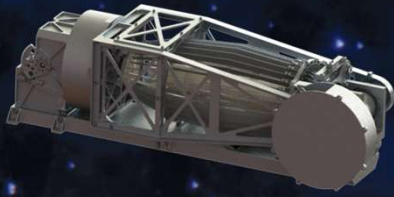


# KaPDA-Gimbal

## High Gain Antenna on a 2-Axis Gimbal Platform



Stow



Deploy



Operate



0.7m Q/V Band Gimballed Antenna

### Key Features

- **TRL 9 with >36 units ordered**; delivered 2/month throughout 2024
- Scalable reflector from 0.5m to 1.0m diameter options
- Tendeg standard product includes reflector, gimbal and control electronics, feed, waveguide, diplexer, filters and cabling, depending on customer needs.
  - Volume available behind reflector for customer furnished LNAs, PAs, Radios, etc.
  - Integrated gimbal controller with serial interface.
  - LNA and PA can be directly attached to feed to reduce RF losses.
  - Reflector surface is 1g tolerant, minimizing need for offloading GSE
  - Non-gimbal options available, including a hinged deployment
- Performance
  - RF characterized at X, Ku, K, Ka, Q, and V bands (up to 52 GHz).
  - Polarization capabilities: RHCP, LHCP, Vertical and Horizontal.
- Applications, among others:
  - COM Links: LEO to GEO, LEO to Earth, LEO to LEO, Lunar to Earth
  - Radar
- Patent: US11658385B2

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**TENDEG**

Deployable Antennas and Precision Structures

# KaPDA - Gimbal

## 0.7m X-Band Gimbaled Antenna, TRL-9

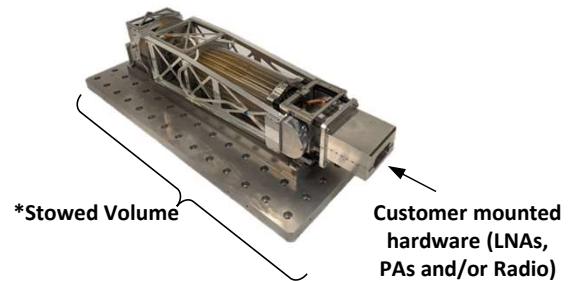
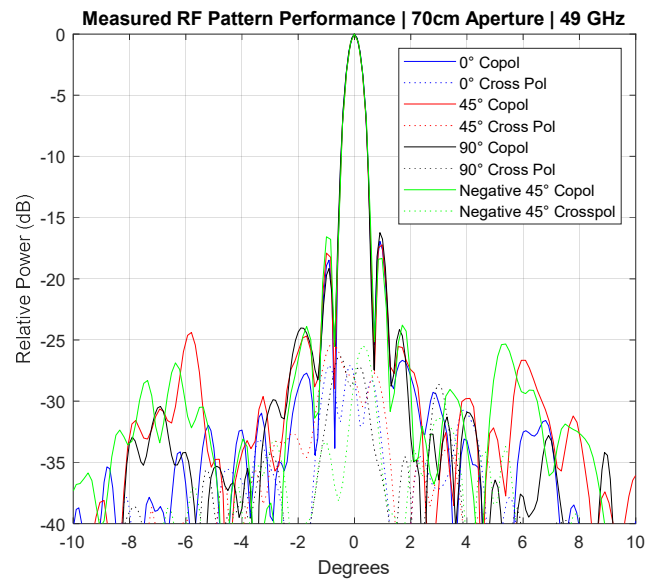


### KaPDA-Gimbal Performance Metrics

Metric	As Built
Pointing Repeatability	< ±0.05 deg (per axis)
Operating Elevation Range	±91 deg
Max Elevation Rate	10 deg/s
Max Elevation Acceleration	5 deg/s <sup>2</sup>
Operating Azimuth Range	355 deg
Max Azimuth Rate	10 deg/s
Max Azimuth Acceleration	5 deg/s <sup>2</sup>
Stowed Size*	22 x 21 x 71* (cm)
Deployed Diameter	50 to 100 (cm)
Peak Gain*	> 45 dB*
Cross-Pol Discrimination	> 25 dB
Mass*	11.5 kg*
Thermal	-20°C to 80°C
Vibration tested	10.9 Grms.
Gimbal Operating Power*	10-20 W*

\*Sized for a 70cm diameter reflector; volume does not include twist capsule, gain values measured at 40GHz, mass does not include LNAs, PAs or other customer furnished hardware mounted to back side of the antenna. Gimbal Operating Power is a typical orbital average.

### RF Performance Specifications



Tendeg is a hardware delivery company focused on advanced deployable antennas and precision structures. The group specializes in large deployable reflectors (UHF to Q/V Bands with Diameters from 0.5 to 20m) with integrated RF feeds, deployable helicals and log periodic antennas, gimbaled platforms with control electronics, precision hinges, booms, trusses and other advanced spaceflight architectures. Tendeg has deployed over a dozen large antennas in space and has delivered more than twenty integrated antenna systems in the first eight months of 2024. Tendeg is employee owned, has a team of 120 staff members and is based in Louisville, Colorado

# TENDEG

Deployable Antennas and Precision Structures

Revision Aug 2024