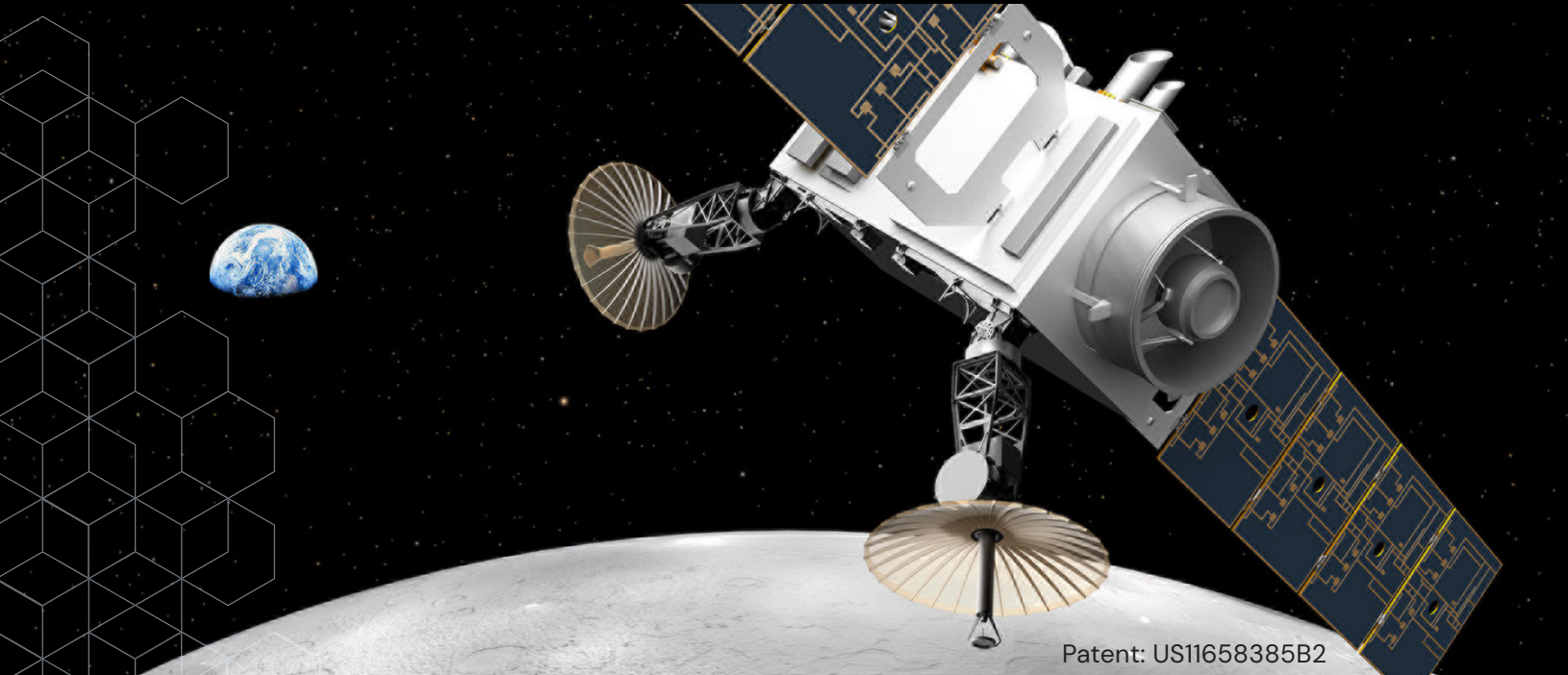


KaPDA 2-AXIS GIMBAL PLATFORM

X - Q/V Band Capable

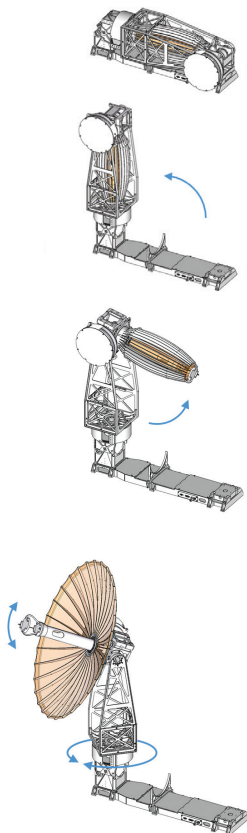
www.tendeg.com



Patent: US11658385B2

KEY INFORMATION

- **TRL 9** with >36 units ordered; delivered 2/month throughout 2024
- Scalable reflector from 0.5m to 1.5m diameter
- **Fully Integrated Unit**
 - Integrated reflector, gimbal and control electronics, feed, waveguides, diplexer, filters and cabling, depending on customer needs.
 - Volume available behind reflector for LNAs, PAs and radio components among others, direct waveguide attachment to feed reduces RF losses
 - Reflector surface is 1g tolerant, minimizing need for offloading GSE
- **Performance**
 - RF characterized at X, K, Ka, Q/V bands (up to 52 GHz).
 - Polarization capabilities: RHCP, LHCP, Vertical and Horizontal.
- **Applications**
 - COM Links in LEO, MEO, GEO and Lunar Orbits
 - Synthetic Aperture Radar
 - Space Domain Awareness



2-Axis Gimbal Deployment

TENDEG
INNOVATION DEPLOYED



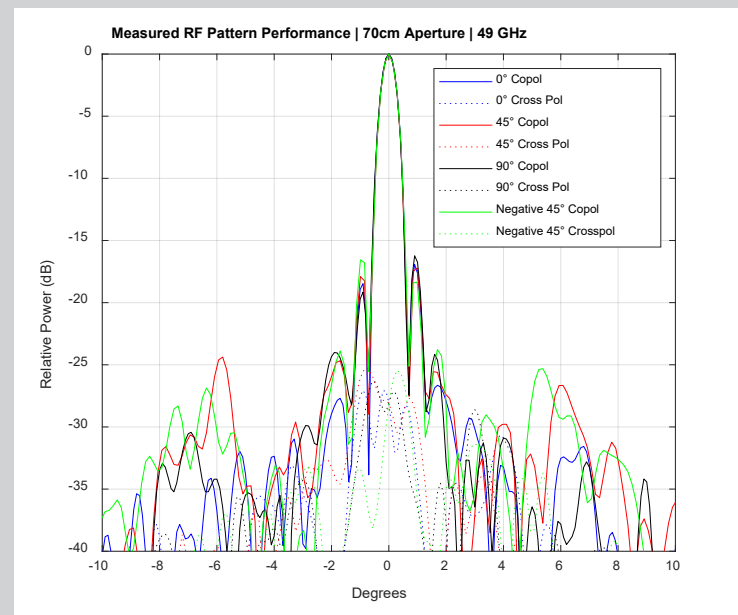
Gimbal Performance Metrics

Metric	As Built
Pointing Repeatability	$< \pm 0.08$ deg, typical (1-sigma)
Operating Elevation Range	± 90 deg
Max Elevation Rate	10 deg/s
Max Elevation Acceleration	5 deg/s ²
Operating Azimuth Range	355 deg
Max Azimuth Rate	10 deg/s
Max Azimuth Acceleration	5 deg/s ²
Stowed Size*	22 x 21 x 71* (cm)
Deployed Diameter	50 to 100 (cm)
Peak Gain*	> 45 dB*
Cross-Pol Discrimination	> 25 dB
Mass*	12 kg*
Vibration tested	Exceeds GEVS Protoqual (14.1 GRMS)
Gimbal Operating Power*	10–20 W*

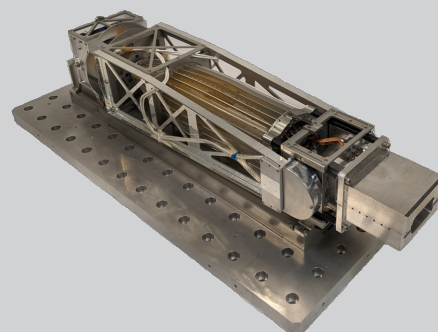
*Sized for a 70cm diameter reflector; volume does not include twist capsule, gain values measured at 40GHz, mass does not include LNAs, PAs or other customer furnished hardware mounted to back side of the antenna. Gimbal Operating Power is a typical orbital average.

RF Performance Specifications

Example RF performance



Compact Stowed From Factor



Customer mounted hardware (LNAs, PAs and/or Radio)