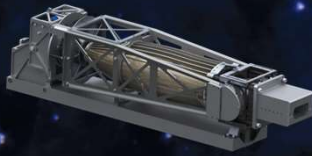
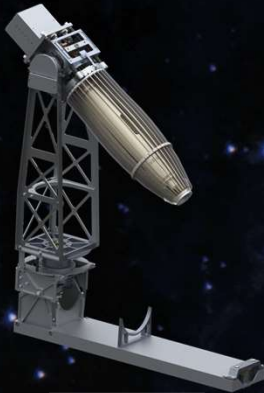


KaPDA-Gimbal

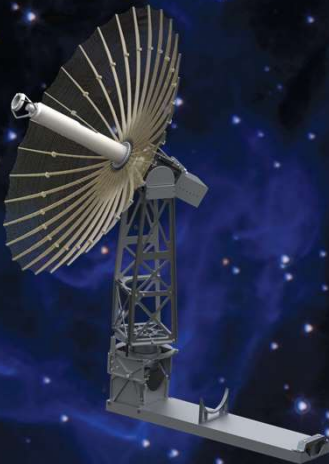
2-Axis Gimbal, Control System, and High Gain Antenna



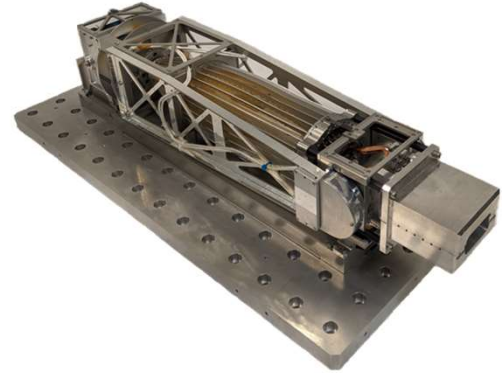
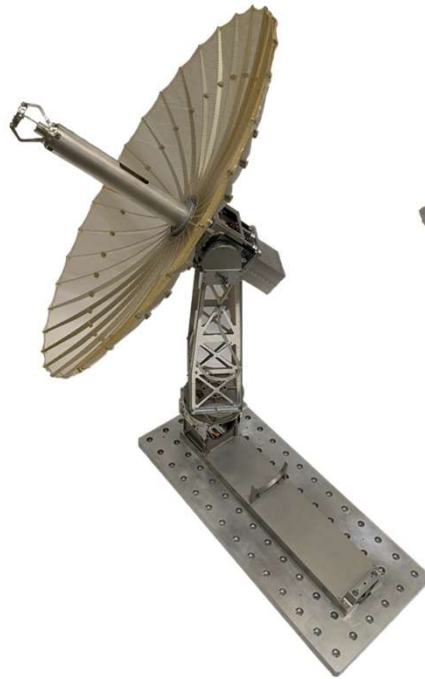
Stow



Deploy



Operate



SWaP:

- 16 cm x 18 cm x 64 cm *
- Weight: 6.6 kg *
- Typical gimbal operating power < 12.5 watts

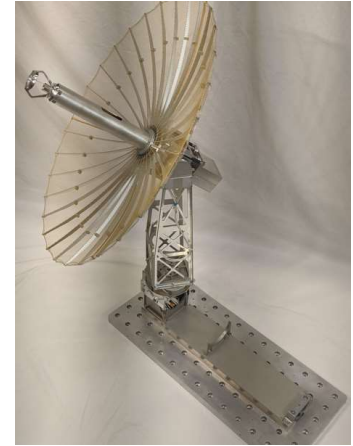
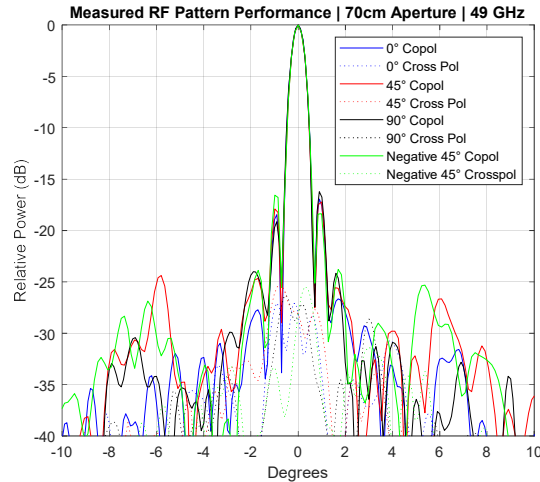
*70 cm reflector option shown.

Key Features

- Can track LEO to GEO, LEO to ground, LEO to LEO.
- Integrated gimbal controller with serial interface.
- 50 to 100 cm diameter reflector options available.
- Polarization capabilities: RHCP, LHCP, V and H.
- RF tested to 51 GHz. Options at X, Ku, K, Ka, Q, and V bands.
- Vibration tested to 8.69 Grms.
- Antenna is TRL 9: KaPDA launched July 2018 to LEO. Deployment and radar operations fully successful.
- Gimbal assembly is TRL 6. First flight scheduled Q1 2022.
- LNA and PA can be directly attached to feed to reduce RF losses.
- Elevation axis can be counterbalanced such that center of gravity is static during gimballed antenna operations.
- Patent US20160352022A1 and pending US 62/782,599.

TENDEG

RF Performance Specifications



KaPDA-Gimbal Performance Metrics

Metric	Units	As Built
Pointing	deg	< 0.05 (per axis)
Operating Elevation Range	deg	±87
Max Elevation Rate	deg/s	10
Max Elevation Acceleration	deg/s/s	5
Max Azimuth Range	deg	±178
Max Azimuth Rate	deg/s	10
Max Azimuth Acceleration	deg/s/s	5
Stowed Size	cm	16 x 18 x 64*
Deployed Diameter	cm	50 to 100
Peak Gain (40 GHz)	dB	> 45
XPD	dB	> 25
RMS Surface Accuracy	mm	0.25
Mass	kg	6.8 (without LNAs or PAs)*
Thermal	°C	-20 to 80

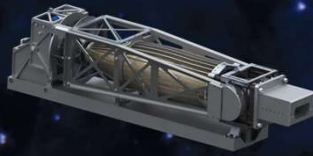
*Assumes 70 cm reflector option.

About Tendeg

Tendeg LLC provides antennas, precision deployable structures, and mechanical engineering design and analysis services for space missions. The company was founded in 2007 by a group of space industry veterans with an average of 22 years experience in designing and building space flight hardware. Tendeg has offices near Denver, and Aspen.

TENDEG

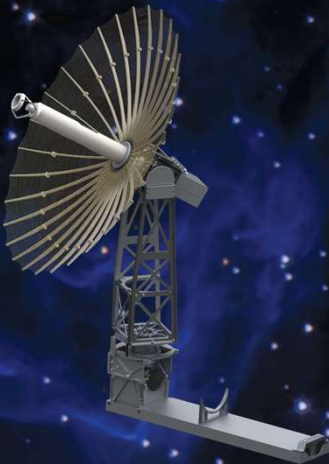
ANTENNAS & PRECISION DEPLOYABLES FOR SPACE



Stow



Deploy



Operate

Tendeg LLC
 1772 Prairie Way Unit A
 Louisville, CO 80027
 303-929-4466
www.tendeg.com