




High Performance Space
Structure Systems GmbH
(<http://www.hps-gmbh.com/en>)

The Team to Trust

Munich | Porto (<http://www.hps-lda.pt/>) | Bucharest (<http://hps-srl.ro/>)

MENÜ ▾

  (<http://www.hps-gmbh.com/portfolio/subsystems/antennas/>)

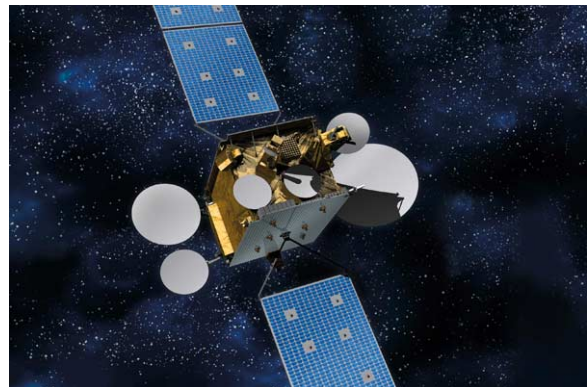
REFLECTOR ANTENNAS

Top Deck Antennas – Side Deployable Antennas – Dual Gridded Antennas –
Large Deployable Antennas – Ka-SAR Radar Antenna System – GNSS Antennas
– Ground Portable Antennas

Antennas represent one of the company's four subsystem domains that HPS fully covers with a portfolio ranging from side-deployable antennas, top deck- and feeder link-antennas over dual gridded, GNSS- and large deployable antennas, up to radar- and even ground-antennas.

In particular focus at HPS: the company's specialization on Ka- and Q/V-band. Notable features of HPS antenna subsystems are their low weight, high reflectivity, low thermoelastic distortion and high eigenfrequency.

HPS delivers antenna subsystems complete and fast – advantages which in combination with those proven quality features mentioned above have led to HPS flight heritage on board of the „Heinrich Hertz“-mission of the German space agency DLR.



Contact:

For further information please contact our chief engineer (../../contact/kontaktformular/).

References:

→ Success Trajectory (<http://www.hps-gmbh.com/en/portfolio/subsystems/success-trajectory/>)

Top Deck Antennas

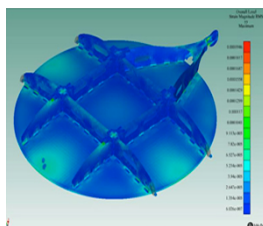
**Downlink example:**

- Tx: 18.8 – 20.2 GHz
- Rx: 28.5 – 30.0 GHz;
- Tested up to 49.8 GHz
- Up to 19 beams for multibeam user link scenario
- Main reflector diameter: 70 cm
- Subreflector: 25 cm
- Mass: 7 kg (inkl. Feed Cluster)
- 1st Eigenfrequency: >110 Hz

Feeder link example:

- Tx: 37.5 – 40.5 GHz
- Rx: 47.2 – 50.2 GHz
- European coverage
- 8 gateways for nominal ops
- 2 for diversity sites
- Main reflector diameter: 120 cm
- Subreflector: 80 cm
- Mass: 23 kg (incl. feed and thermal H/W)
- 1st Eigenfrequency: >60 Hz

Side Deployable Antennas

**1.0 m Class:**

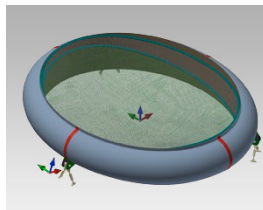
- Tx: 18.8 – 20.2 GHz
- Rx: 28.5 – 30.0 GHz
- 2 service areas
- Single offset configuration
- Pointing error: < 0.006°

- TED < 0.017 mm RMS
- Mass: 3.7 kg (reflector only)
- 1st Eigenfrequency: >140 Hz

1.6m Class (scalable up to 2.5m):

- Tx: 18.8 – 20.2 GHz
- Rx: 28.5 – 30.0 GHz
- 2 service areas
- Single offset configuration
- Pointing error: < 0.02°
- TED < 0.03 mm RMS
- Mass: 9.8 kg (reflector only)
- 1st Eigenfrequency: >130 Hz

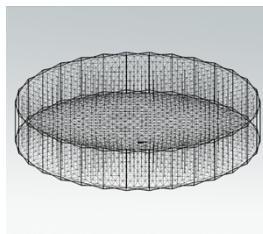
Dual Gridded Antennas



Features:

- Ku-/Ka-Band
- Linear polarisation
- CFRP-rod based patented concept
- Diameter: 1,2 m
- Mass: 4,3 kg
- 1st Eigenfrequency: >100 Hz
- Shaped and unshaped configurations

Large Deployable Antennas

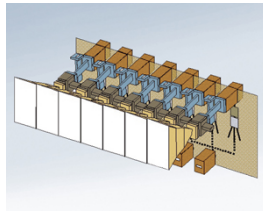


Features:

- C-Band, L-Band, S-Band
- Scalable up to Ka-Band
- LEO application for Earth Observation
- GEO application for Telecommunication
- Diameters between 5 m and 20 m
- Mass of reflector assembly:
25 kg (5 m) and 60 kg (12 m)

- Close co-operation with subcontractor LSS UG, Munich
- Reflecting surface: gold plated metal mesh

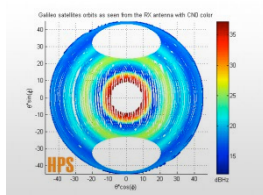
Ka-SAR Radar Antenna System



Features:

- LEO-Orbit
- Interferometric SAR system
- 2x Rx-antennas on deployable booms
- 2x Tx-antennas
- 35–75 GHz
- 3 hybrid multi-matrix power amplifier network
- Dual linear polarization

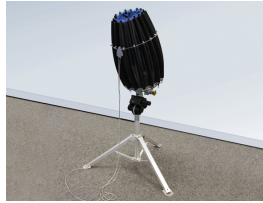
GNSS Antennas



Features:

- Autonomous orbit determination of GEO satellites
- Use of GNSS multi-constellation (GPS/GALILEO)
- Dimensions: max. diameter: 25 cm; height: 50 cm
- Mass (incl. thermal H/W): 1.5 kg
- Electrical Interface: SMA connector
- Mechanical Interface: 4x M5 screws

Ground Portable Antennas

**Features:**

- Direct satellite link
 - Civil and military applications
 - Packable to a back pack
 - Quick deployment time
 - Mass: 7 kg
 - Diameter: 1.2 m
 - Tx: 13,75–14,5 GHz
 - Rx: 10,76–12,75 GHz
-

- Portfolio (<http://www.hps-gmbh.com/en/portfolio/>)
-
- About HPS (<http://www.hps-gmbh.com/en/about-hps/>)
- News (<http://www.hps-gmbh.com/en/news/>)
- Career (<http://www.hps-gmbh.com/en/career/>)
- Downloads (<http://www.hps-gmbh.com/en/downloads/>)
- Contact (<http://www.hps-gmbh.com/en/contact/>)

© 2015 HPS GmbH

Data privacy statement (<http://www.hps-gmbh.com/en/data-privacy-statement/>)

Imprint (<http://www.hps-gmbh.com/en/imprint/>)