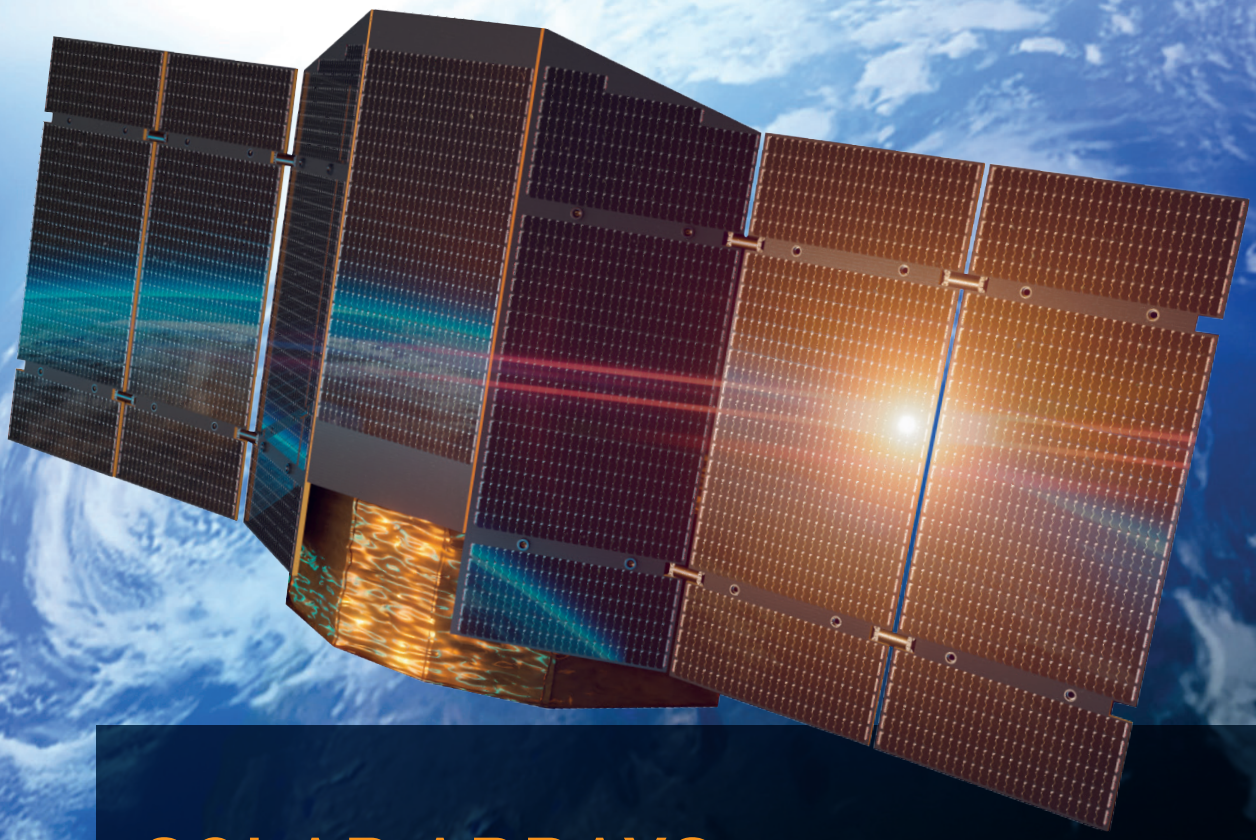
SpaceTech GmbH



SOLAR ARRAYS

Product Information

SOLAR ARRAYS

With several hundred solar arrays in orbit, SpaceTech is a leading supplier of solar array systems for satellites. We are your one-stop solution for the full scope of solar arrays.

Solutions for your mission

From body-mounted panels, via single hinge deployable arrays to multi-hinge deployable solar array wings including deployment electronics & HDRM, solar array drive, mechanisms as well as photovoltaic assemblies on panels.

Highly automated

With our highly automated, yet flexible in-house production of panels, photovoltaic laydown and our unique deployment mechanisms, you benefit from fast development and highly cost-efficient designs, fitting perfectly to your needs.

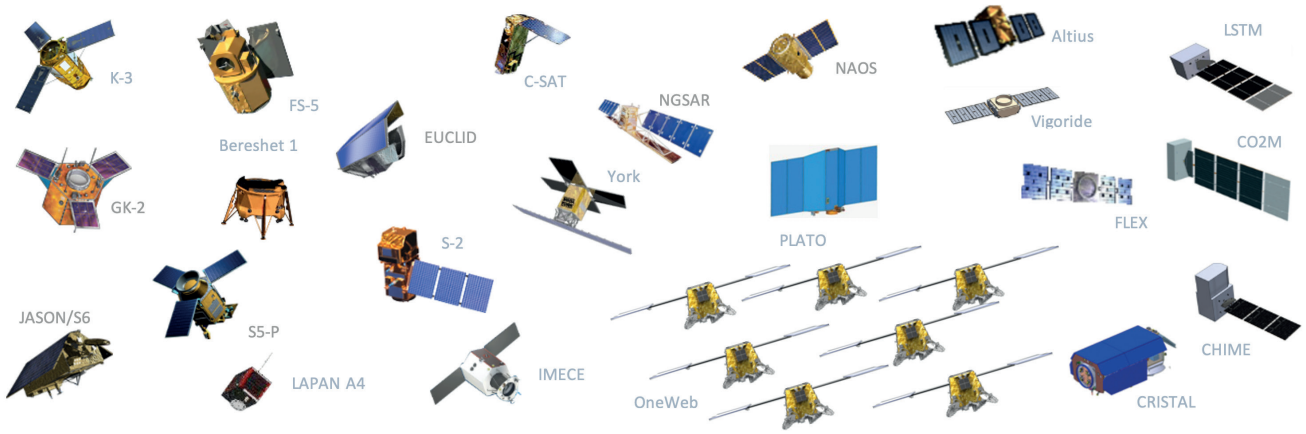
One-off to series production

We serve NewSpace mega-constellations as well as the most demanding institutional missions. Depending on your needs, we offer you existing solutions or ensure an efficient design optimized for your mission.

Heritage

Examples of our activities are the solar arrays for OneWeb Satellites, York Space Systems and a multitude of institutional missions, including GökTürk-2, Sentinel-5p, Sentinel-6, EUCLID, FLEX, CHIME, CO2M, CRISTAL and LSTM.

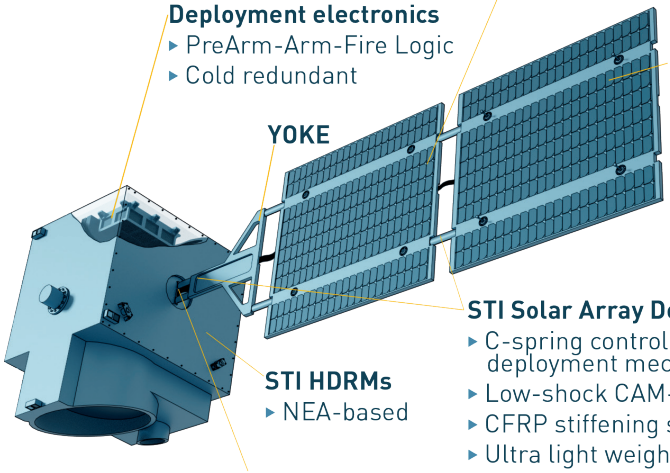
388 STI Solar Arrays in Orbit - on 180 Satellites



SpaceTech solar array heritage

Are you interested in our existing components or in need of a new development? Please contact us!

Key features of STI solar arrays



CFRP Panels
- In-house manufactured by CST
- Automated insert placements

Deployment electronics
- PreArm-Arm-Fire Logic
- Cold redundant

YOKE

STI Automated Cell Laydown
- Cost-efficient automated process
- Variable panel sizes
- Variable string design

STI Solar Array Deployment Mechanisms
- C-spring controlled, unsynchronized deployment mechanism
- Low-shock CAM-systems
- CFRP stiffening struts
- Ultra light weight CFRP solutions

STI HDRMs
- NEA-based

SADA
- Cost-efficient twist-capsule

Fast and flexible

With widely varying mission needs, there is no 'one-size-fits-all' for solar arrays. Our production facilities support high volume production as well as flexibility to achieve optimized solutions for your mission.

Your advantage

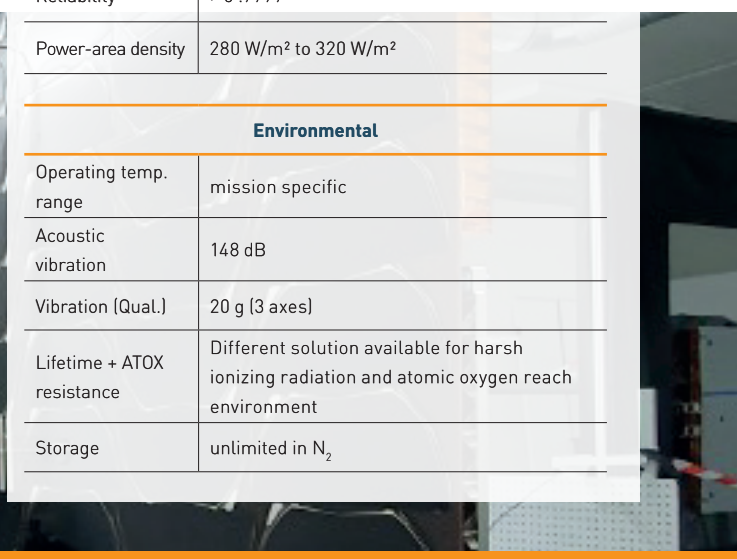
- High design flexibility
- High cell fill ratio of up to 85 %
- Automated, highly cost optimized production of up to 10 m² per day
- Heritage of more than 300 solar arrays in orbit – 100 % success rate

Typical properties

Mechanical	
Mass	From 3 to 6 kg/m² depending on the influence of the deployment mechanisms
Stowed stiffness	> 50 Hz out-of-plane, > 120 Hz in-plane
Deployed stiffness (out of plane)	> 1 Hz for multi hinge deployments > 10 Hz for single hinge deployments

Electrical	
Power EOL	up to 5 kW
Interface	on demand
Bleed resistor	10 / 20 kΩ
Thermistor	PT 1000
Magnetic moment	Easy to compensate with a clean layout
Reliability	> 0 .9999
Power-area density	280 W/m² to 320 W/m²

Environmental	
Operating temp. range	mission specific
Acoustic vibration	148 dB
Vibration (Qual.)	20 g (3 axes)
Lifetime + ATOX resistance	Different solution available for harsh ionizing radiation and atomic oxygen reach environment
Storage	unlimited in N_2



SpaceTech (STI) is a privately owned company and independent from large aerospace companies. Located in Immenstaad, Germany, on the shore of Lake Constance, we are ideally situated in the center of a high-tech area together with several other aerospace companies and have access to a strong network of experienced suppliers. Founded in 2004, STI has developed into an established and well recognized medium size enterprise in the space industry.

STI offers a wide spectrum of products and services for space missions, from challenging prototypes for institutional science and earth observation missions to low cost series production for mega constellations. Our main capability is the design, development and manufacturing of innovative, high quality space equipment. Our products in particular include:

- Solar arrays, from body mounted to multi hinge solar array wings with SADA
- Photonic and quantum-optical instruments and components, ICARUS systems
- Satellite structures, deployment mechanisms, and electronics
- Small satellite system design, production, integration

Key to STI's success is our profound knowledge of satellite system and subsystem design which allows us to find smart solutions for each customer and mission from a holistic point of view. SpaceTech systems and equipment operate flawlessly on more than 660 satellites in orbit. We are known in the space industry for our straight- forward and pragmatic approach, tailored processes and robust in-orbit operation.

The momentum as a young and dynamic space enterprise with innovative ideas is a perfect match for many of the new space challenges. This is why SpaceTech attracts highly qualified personnel, many with long standing and exceptional experience in the space business but also young and highly motivated engineers and scientists. And this is why we can deliver you the best solution for your needs.

When can we launch your space vision?

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