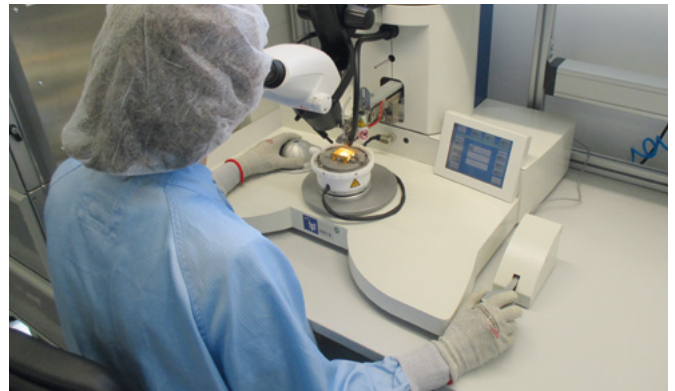


Design & Manufacturing of Spaceflight RF and MW Modules

TruAmp Satellite Products

Within our space division group we design and manufacture RF microwave components and modules for spacecrafts since 2005. Back then, starting with X-band and L-band low noise amplifiers (LNAs) and power amplifiers for the Satellites TerraSAR-X and TanDEM-X. Lately we were delivering for the phased array satellite project SARah-1 more than 100 units of a broadband bi-directional amplifier sub-system. All our development and manufacturing processes are space qualified by ESA, Airbus and others.



TruAmp Satellite products

RF modules for TerraSAR-X and TanDEM-X – successful in space

The Satellites TanDEM-X and TerraSAR-X are the first configurable Synthetic Aperture Radar (SAR) in space. For this mission we developed, manufactured and delivered:

- L-band LNAs
- X-band LNAs
- X-band 4 W driver amplifiers
- Calibration networks

RF modules for the phased array satellite SARah-1

The SARah-1 satellite generates high resolution images via a SAR. For this mission we developed, manufactured and delivered:

- Bi-directional X-band amplifier including 6-bit true-time delay lines
- Power splitters
- Gain equalizers
- Harness

Customized components through specialized knowledge and competences

- Space qualified in-house development and manufacturing
- Design, procurement and manufacturing according to international quality standards (ESA, MIL)
- Documentation according to internal TRUMPF Hüttinger microwave standards and to special customer requirements
- Manufacturing, assembly and testing in clean room environment (class ISO 8)
- Personal is trained according to ESA requirements
- In-house assembly tools: chip positioners, glue dispensers, wire bonding, vacuum chip die soldering
- Process quality assurance: bond pull tester, die shear tester
- All required electrical test equipment and environmental tests in-house available
- Thermal vacuum test, vibration and shock testing are done at external partner facilities



TRUMPF Hüttinger
generating confidence