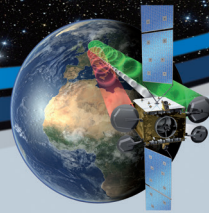
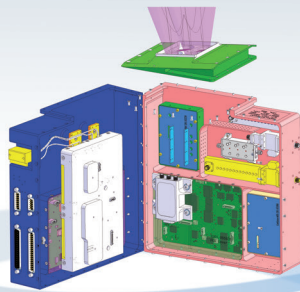


GeReLEO-SMART

Geostationary Relay for LEO Satellites
GEO-Satelliten Multibeam-Antennen-Realisierungs-Technologieexperiment



Ka-Band Relay for LEO-Satellites
Multi Beam Antenna Array
MEMS Matrix
Customized Low Noise Amplifiers
Reconfigurable FPGA

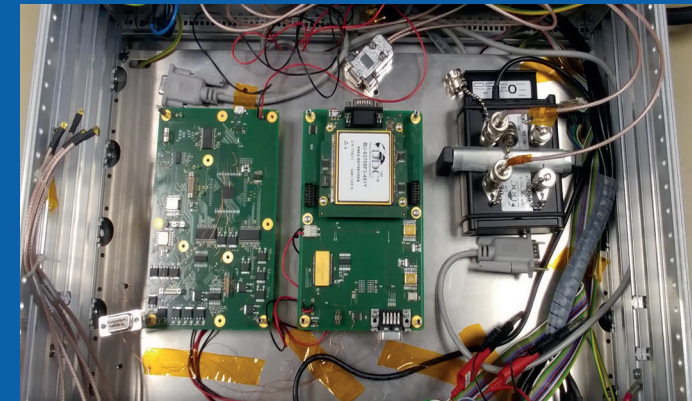


Supported by:
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by the German Bundestag

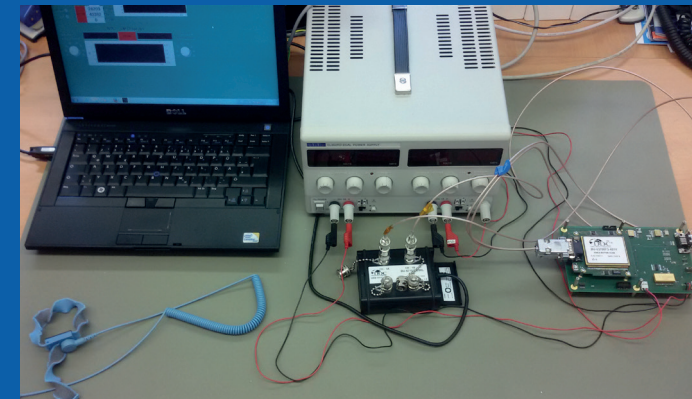
GeReLEO-SMART is a scientific technology demonstration payload to be launched on the German satellite Heinrich Hertz. It will demonstrate the technology readiness to build a multi feed array Ka-band antenna which is a key technology for a future geostationary data relay.

Key demonstration features:

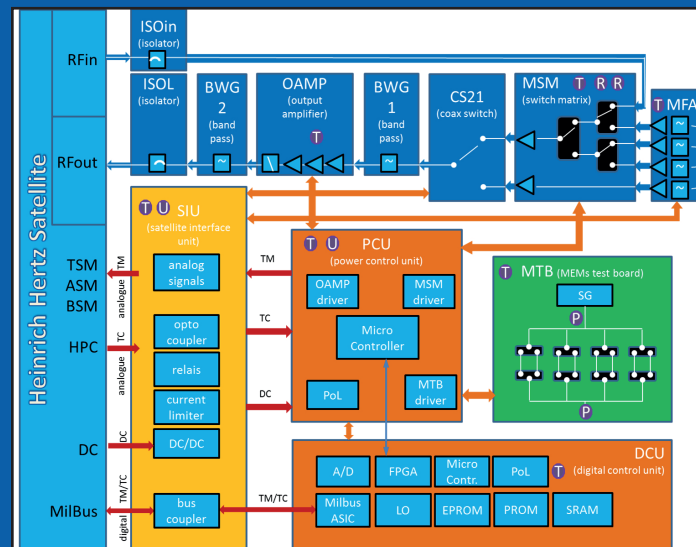
- MFA: Multi Beam Antenna with integrated LNAs
- MSM: RF MEMS switches to select different antenna groups
- DCU: Reconfigurable control unit with FPGA and Milbus interface
- MTB: Test bed for MEMS
- OAMP: 3-stage amplifier
- Operational frequency: Ka-Band



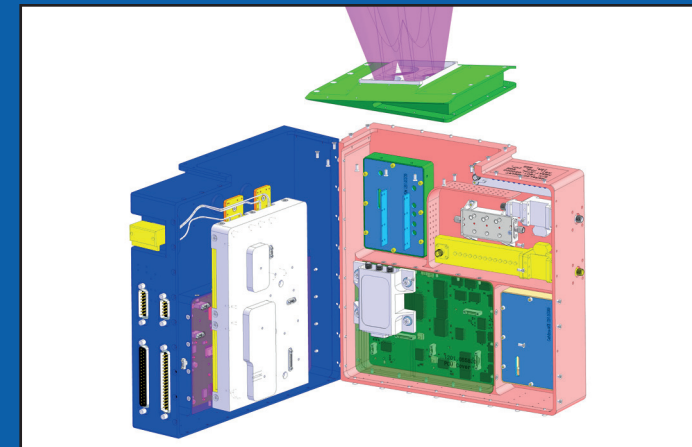
Power and digital control unit with Milbus interface



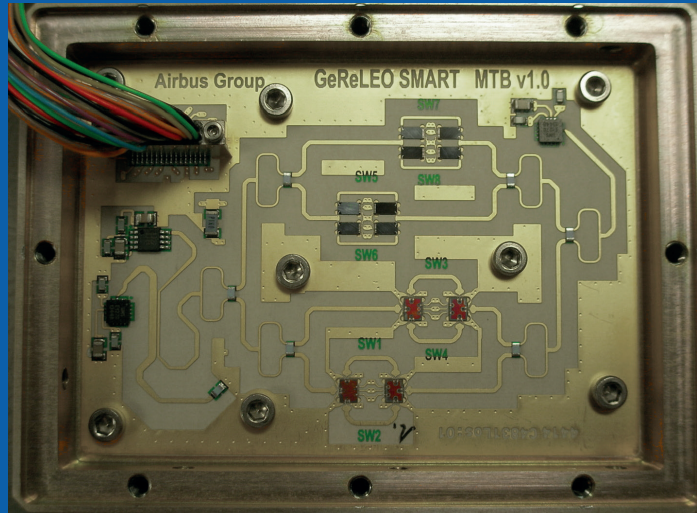
Test setup of the digital control unit



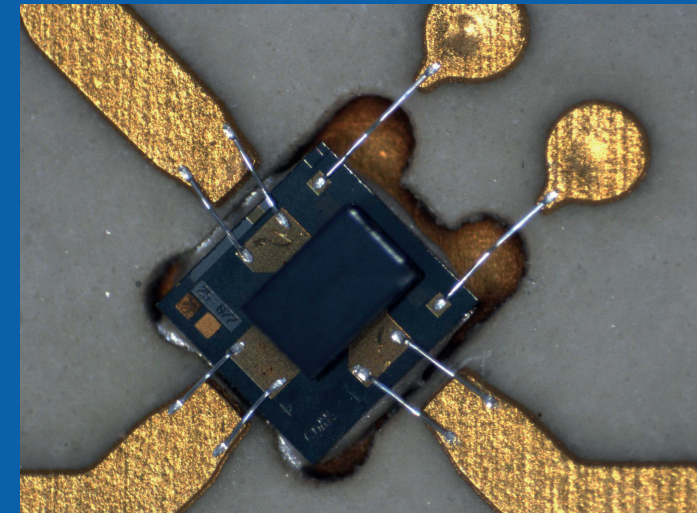
Internal block diagram of the payload



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Engineering model of the MEMS test bed



Bonded SPDT MEMS inside PCB cavity

Partners:



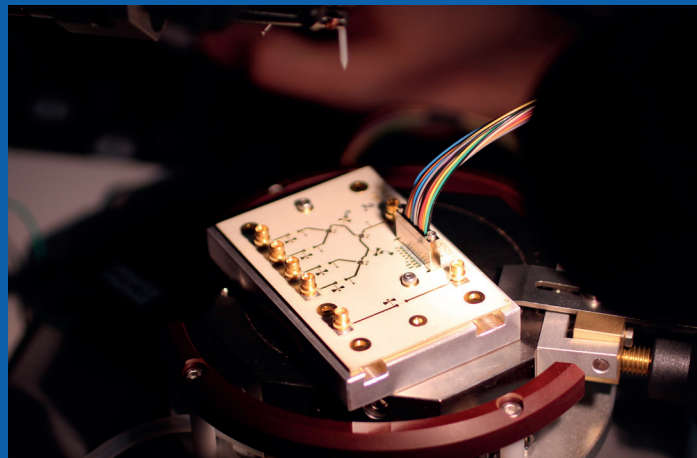
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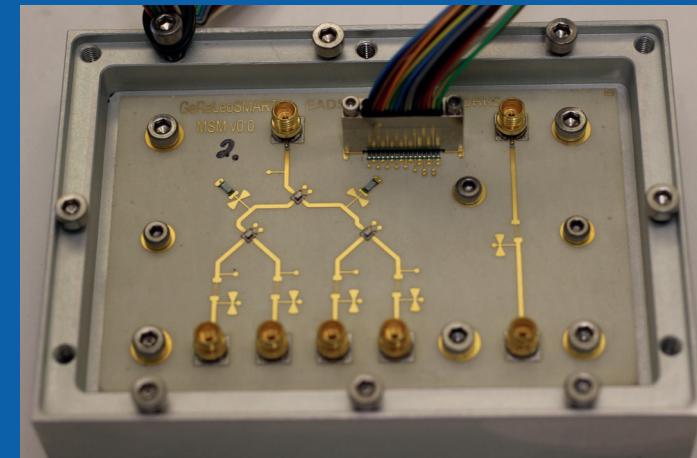
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FKZ: 50 YB 1221



MEMS bonding



Engineering model of the 1-to-4 MEMS
 switch matrix