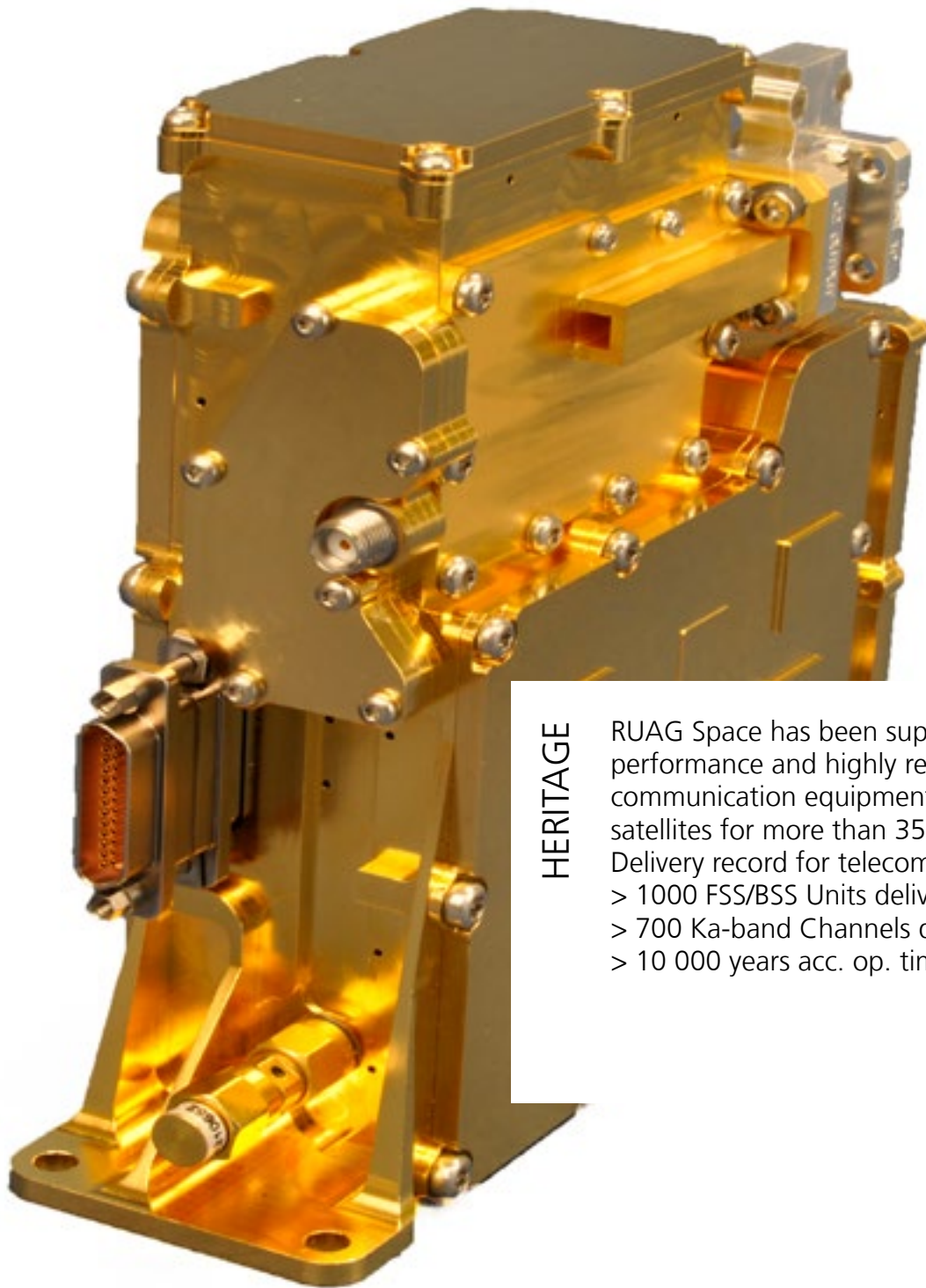


# Telecom: Ka/Ku-band Cross Converters

RUAG Space Ka/Ku-band Up- and Downconverters meet the highest performance and reliability requirements. Application of latest technologies with a PL-DRO offers excellent performance, small size, low mass and efficient manufacturing.



## HERITAGE

RUAG Space has been supplying high performance and highly reliable microwave communication equipment for telecom satellites for more than 35 years.

Delivery record for telecom payloads:

- > 1000 FSS/BSS Units delivered
- > 700 Ka-band Channels delivered
- > 10 000 years acc. op. time in orbit

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### Ka/Ku-Band Cross Converters for telecom payloads

The new series of Ku/Ka- and Ka/Ku-band cross converters includes internal LO generation and EPC for most satellite Bus standards. The equipment are built using the latest MMIC technologies and a phase-locked DRO (PLDRO) local oscillator, offering excellent electrical performance and reliability while exhibiting a compact design with low cost adaptation for different LO frequencies.

### Modularity

The modular design allows the equipment to be configured for different frequency plans as well as for a variety of DC and TM/TC interfaces.

### Compacts design

Extensive use of MMIC and miniaturization technologies (e.g hermetic HTCC hybrid technology) is employed to give small size and low mass. The high level of integration result in improved producibility and short lead times.

#### Ka/Ku Downconverter:

- RF Input: Waveguide (WR 28 or WR34) (or coaxial SMA-K with adapter)
- RF Output: coaxial SMA

#### Ku/Ka Upconverter:

- RF Input: coaxial SMA
- RF Output: coaxial SMA
- DC & TM/TC: MDM-25

#### Production

- Well-known technologies and established processes
- Extensive clean-room facilities
- Highly automated testing and data collection
- Inhouse facilities for environmental testing

### Technical Data

<b>Frequency range, Input</b>	
<b>Ka/Ku</b>	27.5 to 31.0 GHz
<b>Ku/Ka</b>	12.7-14.8 GHz
<b>Frequency range, Output</b>	
<b>Ka/Ku</b>	10.7-12.75 GHz
<b>Ku/Ka</b>	17.3-21.2 GHz
<b>LO Frequency range</b>	
<b>Ka/Ku</b>	~14 – 20 GHz
<b>Ku/Ka</b>	~3 – 8 GHz
<b>Gain</b>	25 - 32 dB (tunable to within $\pm 1$ dB)
<b>OIP3</b>	>30 dBm
<b>Noise figure</b>	<14 dB
<b>Temperature range</b>	-20°C to + 70°C
<b>DC power</b>	<10 W (@ 28-100 V power bus)
<b>Mass (Ka/ku)</b>	650 grams
<b>Size (Ka/Ku)</b>	140 x 40 x 124 mm (incl. mounting feet)