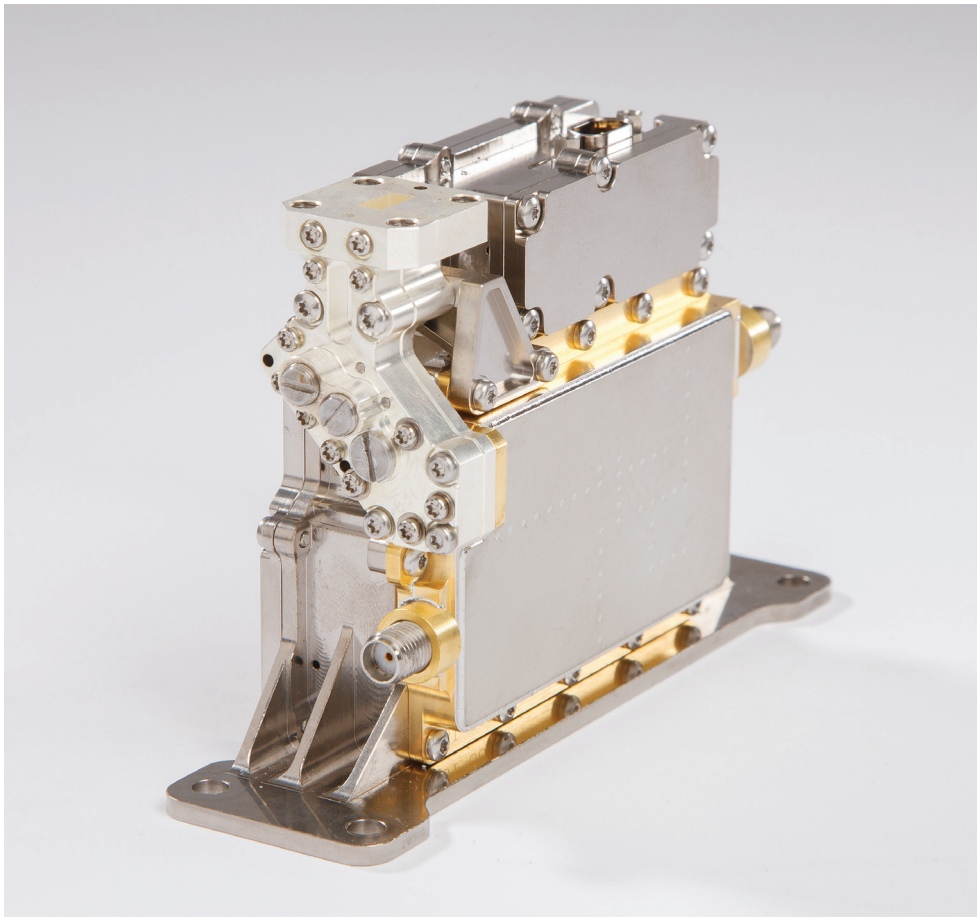


Telecom: Ka-band Slice Frequency Converter

RUAG Space novel compact Slice Frequency Converter for Ka-band payloads meet the highest performance and reliability requirements. Application of new technology enables small size, low mass and efficient manufacturing.



Novel Frequency Converter for Ka-band payloads

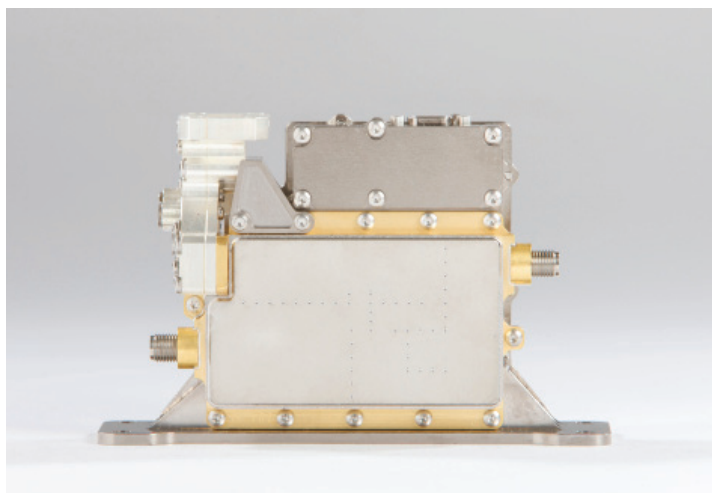
Novel Ka-band Frequency Converter for 30 GHz-to-20 GHz Conversion. The use of external LO and EPC allows the use of frequency converter with small size and low mass. The equipment is built using the latest MMIC technologies for excellent electrical performance while exhibiting low DC power consumption and smallest dimension.

Production

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

Heritage

RUAG Space has manufactured and delivered Ka-band equipment for more than two decades. The heritage includes more than 220 frequency downconverters, and 90 upconverters for the Spaceway and Hispasat AG1 programmes.



Ka-band slice converter - view from the side

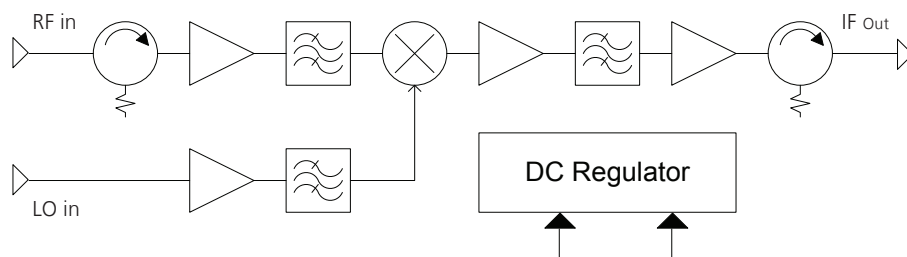
Modularity

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.

Compact design

Extensive use of MMIC and miniaturization technologies are employed to give small size and low mass. The high level of integration result in improved producibility and short lead times.

Slice Converter block diagram



Design features

- Modular design, adaptable to different frequency plans
- Flexible input interface: waveguide or coaxial input dependent on customer requirements
- Constant gain over temperature or gain boost function (gain increases with temperature)
- Small size and low mass.
- Low power consumption

Technical Data

Parameter	Typical Performance
Frequency range, Input	27.5 to 31.0 GHz
Frequency range, Output	17.7 to 21.2 GHz
LO Frequency range	7.5 to 11.8 GHz
Input Power:	
RF	-20 dBm (nom/carrier) and 0 dBm (overdrive)
LO	-7 to +5 dBm (typical)
Gain	28 - 34 dB (tunable to within ± 1 dB)
Transmit Band Gain	<-20 dB
OIP3	>30 dBm
Noise figure	<15 dB
Temperature range	-20°C to + 70°C
DC power supply:	
V+/I+	+5.5 – +9.0 V / <500 mA
V-/I-	-9.0 – -6.0 V / <20 mA
Mass	235 gram
Size (footprint)	111 x 31 x 71 mm (incl. mounting feet)

Mechanical ICD

