

Telecom: Ka-band Slice Frequency Converter

Beyond Gravity Space 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.

Heritage

Beyond Gravity 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:

- > 1300 FSS/BSS Units delivered
- > 700 Ka-band Channels delivered
- > 10 000 years accumulated operational time in orbit

Key features

Frequency Converter for Ka-band payloads

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 small dimension.

Interfaces

RF input:	Waveguide (WR28) or coaxial (SMA-K)
RF output:	SMA-K
LO input:	SMA
DC & TM/TC:	MDM-9

Modularity

The modular design allows the equipment to be configured for different frequency plans as well as for a variety of DC voltages.

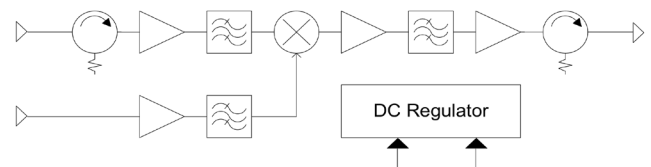
Compact design

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.

Production

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

Compact Receiver and Converter block diagram



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	7.0 to 12.0 GHz
Input Power: RF LO	-20 dBm (nom/carrier) and 0 dBm (overdrive) 0 to +3 dBm (typical)
Gain	28 - 34 dB
Transmit Band Gain	<-20 dB
OIP3	>28 dBm
Noise figure	<15 dB
Temperature range	-20°C to + 70°C
DC power supply: V+/I+ V-/I-	+5.5 – +9.0 V / <500 mA -9.0 – -6.0 V/ <20 mA
Mass	0,24 kg
Size (footprint)	111 x 31 x 71 mm