

Telecom: Ka-band Low Noise Amplifier (LNA)

RUAG Space Ka-band Low Noise Amplifiers meet the highest performance and reliability requirements. Application of latest technologies such as mHEMT MMICs offers excellent noise 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

Ka-Band LNA for telecom payloads

Novel Ka-band Low Noise Amplifier for full band 27.5-31 GHz. The equipment is built using the latest MMIC technologies (e.g. mHEMT LNA) for excellent electrical performance and reliability while exhibiting low DC power consumption and smallest dimension.

Modularity

The modular design allows the equipment to be configured as single LNAs (Slice) with secondary DC power (to be supplied from an external EPC or CPSU) or as Quad-pack with either secondary DC or with internal DC/DC supply. The equipment can be configured for a variety of DC-power- and TM/TC interfaces.

Compacts 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

Flexible input and output RF interfaces

- RF Input: Waveguide (WR 28 or WR34) (or coaxial SMA-K)
- RF Output: Waveguide (WR 28 or WR34) or coaxial SMA-K
- DC & TM/TC: MDM-15/MDM-9

**Technical Data**

Parameter	Typical Performance
Frequency range	27.5 to 31.0 GHz
Gain	40 - 60 dB (tunable to within ± 1 dB)
OIP3	>20 dBm
Noise figure	<2.3 dB
Temperature range	-20°C to + 70°C
DC power (secondary DC)	<270 mA (@ +5 V), <-10 mA (@ -5V)
DC power (internal DC/DC)	<2.4 W
Mass	<170 gram/channel (for slice version)
Size (Single slice)	103 x 36 x 52 mm (incl. mounting feet)