

Cryogenic Ultra Wide-Band LNA for radioastronomy



USING CUTTING-EDGE TECHNOLOGY, THE CRYOGENIC ULTRA LNA OFFERS EXCEPTIONAL RECEPTION IN A FULLY CUSTOMIZED SYSTEM

Innovative technology

State-of-the-art technology provides a very low noise figure whatever the selected frequency band.

Units can include up to 4 channels (2 frequencies) and also include filters and test couplers depending on customer requirements.

Efficiency & Reliability

Each unit is fully tested and delivered with a complete factory acceptance test report.

Advanced design and construction mean the equipment can be operated in the toughest environments.

Exceptional performance combined with reliability and cost effectiveness.

Patented sleeve system to simplify cold head service. Reduced maintenance downtime.

Configurability

Up to 4 channels (2 frequency bands, 2 polarizations) can be fitted in one unit. Filtering for Tx protection is available.

The unit can operate in any orientation on movable antenna structure.



Key Features

- * Radioastronomy applications
- * Deep-space or lunar communications
- * High reliability & efficiency
- * Ultra-low noise figure
- * High gain & low ripple
- * Low input & output VSWR
- * Wide operating temperature range
- * Patented sleeve system for ease of coldhead maintenance
- * Can restart without a vacuum pump after a power outage

OPTIONS

- * Indoor power supply unit
- * Frequencies:
S, C, K, Ka26 or Ka32
- * Filtering for Tx protection
- * PC based automatic
monitoring system
- * Input/output switching
redundant configurations

RF performance

Operating freq. range	S / X / Ka	2.3 - 14 GHz / 8.4 - 8.5 GHz / 31.8 - 32.3 GHz
Noise temperature	S / X / Ka	10 K / 11 K / 30 K
Input VSWR		>1.4:1
Gain		>55 dB
Base temperature		15 K
Cooldown time		5 hrs.
Warmup time		2 hrs.
Service interval		13000 hrs.

Maintenance aspects of cryogenic LNAs

An improved maintenance concept is implemented on new cryogenic LNAs. This concept uses a sleeve system which enables the User to replace the cold head without opening the sealed enclosure.

The main advantage of this concept is to drastically reduce the down-time of the operational system (from 48 hours to 12 hours) and to avoid the need for a specialist cryogenic technician on-site for services or repairs.

Thanks to the sleeve design, first-level maintenance actions can be carried out by the users's own maintenance staff.

Interfaces & physical

Operating temperature	-10 °C to +40 °C
Storage temperature	-40 °C to +60 °C
Humidity	90 % condensing

Typical measured data

