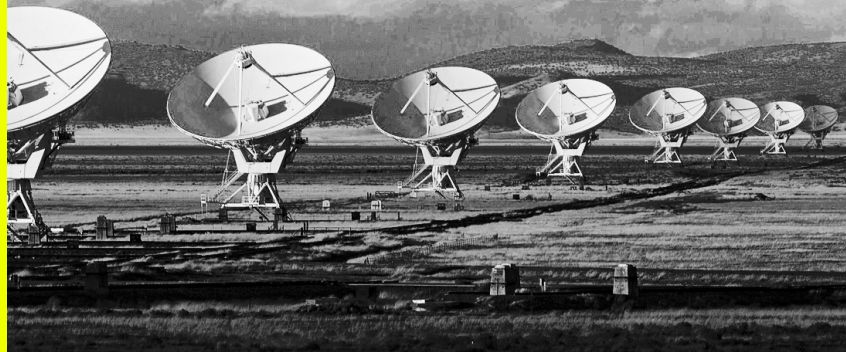


SCIENCE

Radioastronomy
Deep space
Quantum computing

CELESTIA



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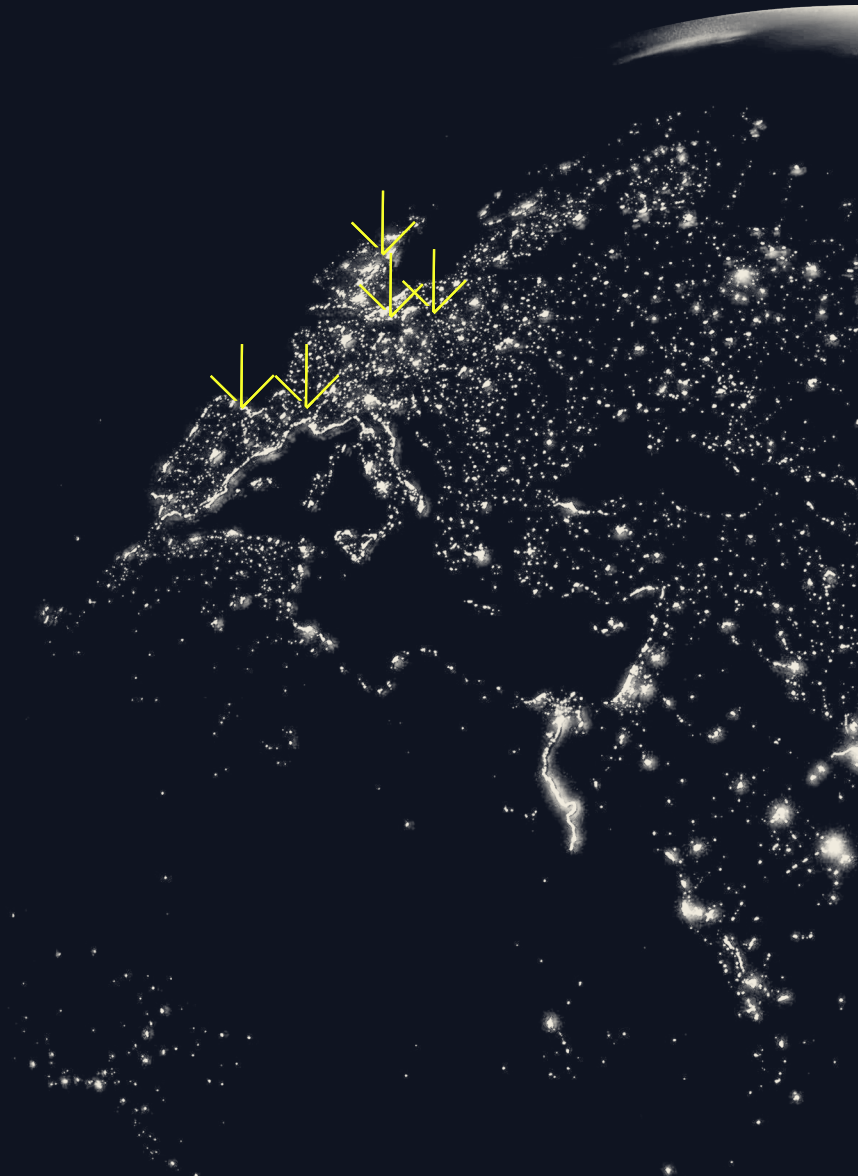
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Elevating excellence

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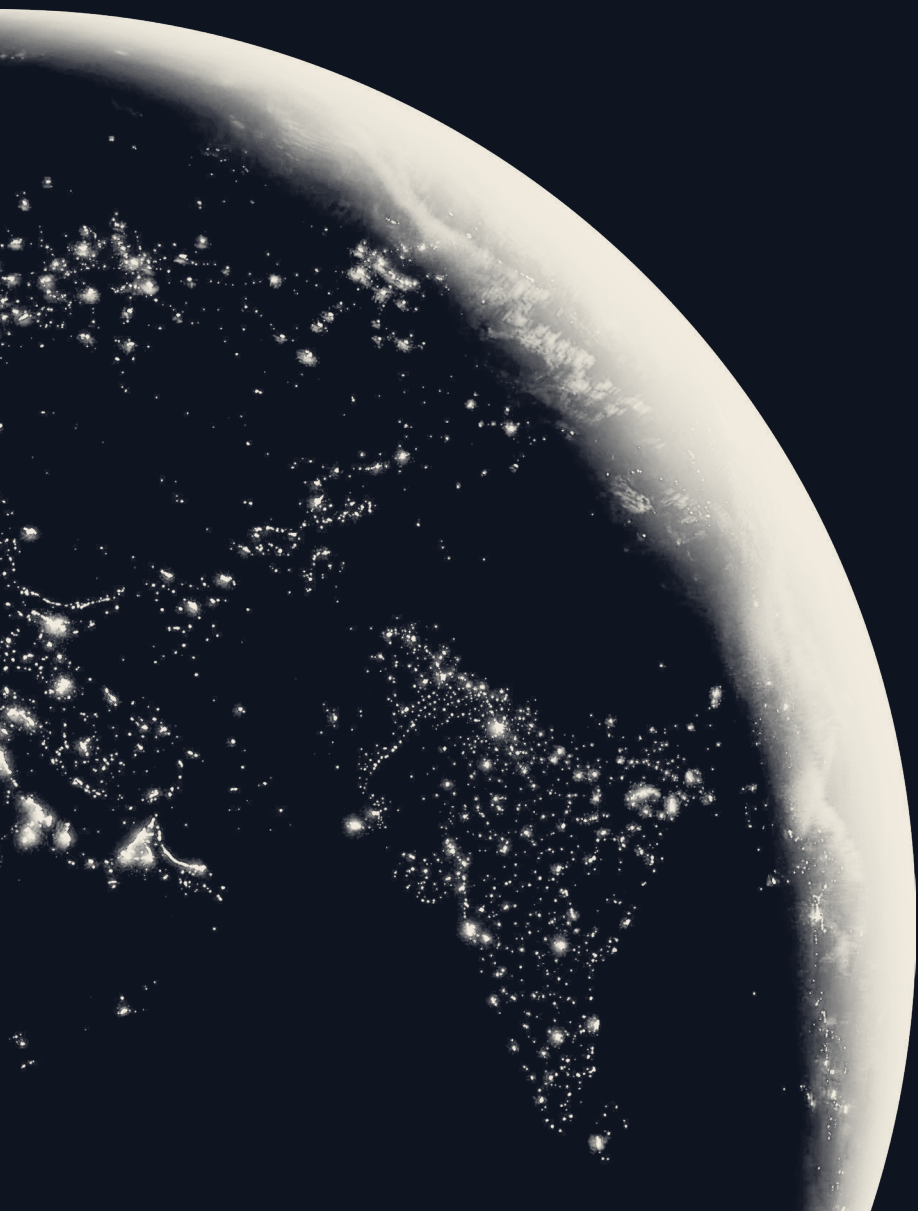
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CELESTIA

European group of multi-technology companies



Our group companies operate **across the globe but share a common purpose.** Together, we exist to lead the **continuous search for cutting-edge solutions** with reliable, affordable, European made high technology.

About us

Put simply, we connect ground to space, producing reliable solutions to communications challenges.

We are creating turnkey communications solutions for a **worldwide market**.

For over 25 years, our business has been synonymous with world-class innovation, quality and engineering excellence with a customer focus.

We deliver technology products, systems and services to our partners across the **aerospace, defence, satellite, scientific and IoT sectors**.

Global in reach, our **multi-disciplined teams** create smart responses to communications challenges using new ideas, new technologies and new ways of thinking.

We have the backing of **Waterland Private Equity** accelerating our growth ambition.

We have a strong heritage in partnering with businesses and international space agencies from development to commercialisation in a wide range of key enabling technologies.

We are built to innovate

Where we are

We have design, manufacturing and testing facilities in Spain, the Netherlands, Belgium, France and the UK.

European team working together as one. Our European origins bring a legacy of quality craftsmanship to the global stage, offering solutions that are regionally rooted but internationally recognised.

Our engineering and production facilities are located in **six different countries across Europe**, putting us within close reach of our customers. **Crafted in Europe, delivered worldwide**

CELESTIA



Cryogenic Systems

Ultra low noise cryogenic receivers, a wide portfolio of cryogenic LNAs and compact cryo-LNA systems

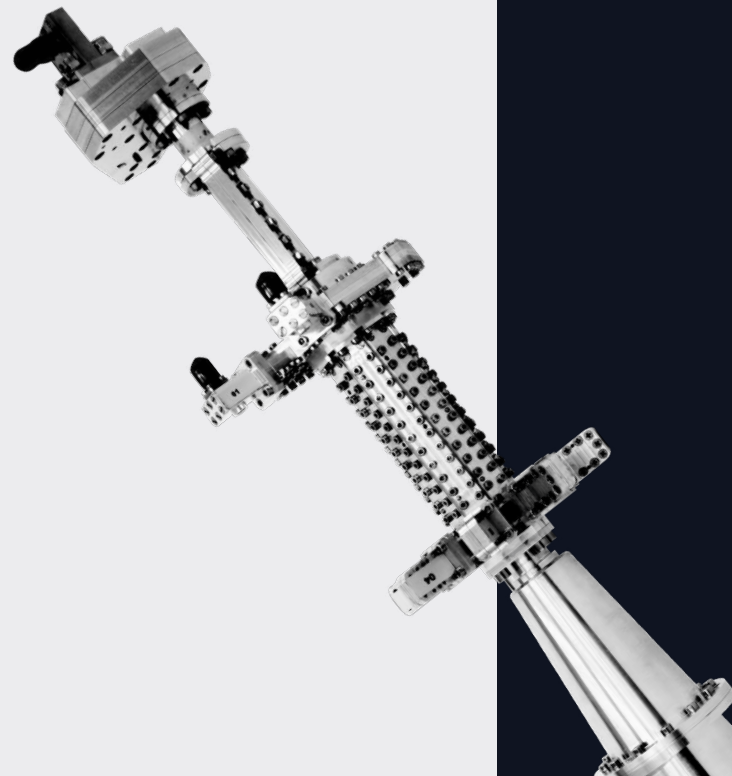
using a zero-maintenance cryo-cooler ultra low noise receiver with patented technology for **deep space communications, radio astronomy and VLBI applications.**

A **low cost compact cryo-LNA system for satcom.**

Passive RF Components

Different types of antenna feeders, probes, horns, polarisers and Orthomode Transducers (OMTs), from UHF to millimetric frequency bands.

A wide portfolio at **different frequency bands** for **SATCOM, radio astronomy or antenna testing applications.**



SSPAs (Solid State Power Amplifiers)

A wide product portfolio based on GaN technology, from tens of Watts up to kW, covering very low frequency bands up to Q band.

Hundreds of GaN SSPAs deployed in the field in very demanding sectors.

Proprietary and unique technologies including high efficiency power combination techniques, multicarrier operation solutions for maximising the linear power and efficiency for aerospace, broadcast, spaceborne, radar, science and 5G.

Monitoring & control solutions

Celestia is also specialised in the development of flexible scalable and robust solutions for Monitoring, Control & Management of complex infrastructures.





Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING

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Cryogenic Low Noise Amplifiers

BAND	TYPE	FREQUENCY	NT @ 12K	IRL	GAIN	INPUT PORT	POWER BIASING
W	Cryo LNA	72-116 GHz	31 K (avg)	8 dB (avg)	27 dB (avg)	WR10	7 wires
Q	Cryo LNA	31-50 GHz	14 K (avg)	10 dB (avg)	35 dB (avg)	WR10	9 wires
K - Ka	Cryo LNA	18 - 32.5 GHz	8 K (avg) at 7 K	8 dB (avg)	32 dB (avg) at 7 K	WR36	7 wires
		18 - 32.5 GHz	12 K (avg) at 15 K	8 dB (avg)	32 dB (avg) at 15 K	2.92 mm	7 wires
C - Ka	Cryo LNA	4-20 GHz	4 K (avg) at 6 K 4.7 K (avg) at 12 K	> 15 dB (95 % band)	35 dB (avg)	2.92 mm	7 wires
X	Cryo LNA	8.4-8.5 GHz	<3 K	15 dB	40-41 dB	WR112	6 wires
		8-9 GHz	<4 K	10 dB	38-40 dB	SMA	6 wires
C - X	Cryo LNA	4-12 GHz	5.1 K (avg)	>10 dB	33.5 dB (avg)	SMA	2 wires
		4-12 GHz	5 K	3 dB	38-40 dB	SMA	7 wires
		2-18 GHz	4.1 K (avg) at 6 K 4.8 K (avg) at 12 K	>12 dB (65 % band)	32 dB (avg)	2.92 mm	7 wires
C	Cryo LNA	5.7-6.3 GHz	<2.5 K	6 dB	>40 dB	SMA	2 wires
		4-8 GHz	<3.5 K	6 dB	40-44 dB	SMA	2 wires
		4-8 GHz	<4 K	6 dB	38-40 dB	SMA	2 wires (low consumption)
S	Cryo LNA	2.3-4.8 GHz	≤3.5 K	10 dB	>28 dB	SMA	4 wires
		2-4.5 GHz	≤3 K	7 dB	>28 dB	SMA	2 wires
UHF - S	Cryo LNA	0.3 - 3.3 GHz	5 K (avg)	9 dB (avg)	34.5 dB	SMA	3 wires
		0.1 - 1.1 GHz	4.5 K (avg)	>15 dB	47 dB (avg)	SMA	3 wires



Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING

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Biasing, monitoring & control unit for cryo LNAs

MODEL	OPERATION	UNIT	CAPABILITY
Remote control unit	Up to 16 cryo-LNAs	Rack mounting (2RU height)	Remotely monitors, controls and biasing cryo-LNAs
Servo-controller power supply unit	Up to 16 cryo-LNAs	Rack mounting (2RU height)	Biasing cryo-LNAs
Servo-controlled power supply board	Up to 4 cryo-LNAs	Board	Biasing cryo-LNAs

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING

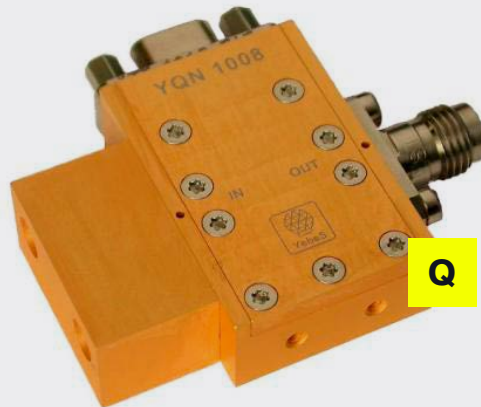


CRYO LNA

31 K (avg)

72 - 116 GHz

IRL 8 dB (avg)
 Gain 27 dB (avg)
 Input port WR10



CRYO LNA

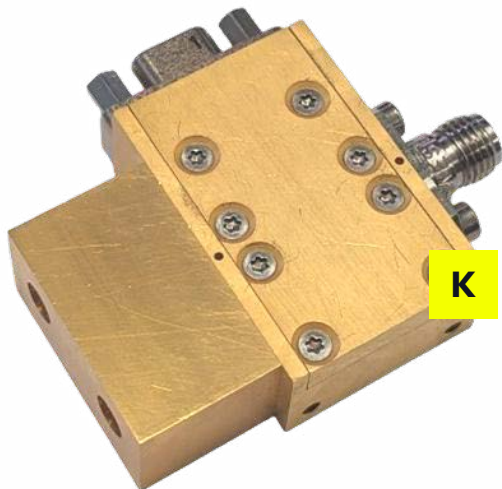
14 K (avg)

31 - 50 GHz

IRL 10 dB (avg)
 Gain 35 dB (avg)
 Input port WR10

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



K

Ka

CRYO LNA

8 K (avg) at 7 K

18 - 32.5 GHz

IRL 8 dB (avg)

Gain 32 dB (avg) at 7K

Input port WR36

CRYO LNA

12 K (avg) at 15 K

18 - 32.5 GHz

IRL 8 dB (avg)

Gain 32 dB (avg) at 15K

Input port 2.92 mm



C

Ka

CRYO LNA

4 K at 6K / 4.7 K at 12 K

4 - 20 GHz

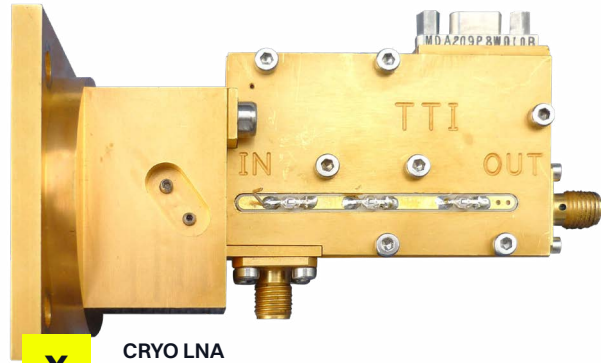
IRL >15 dB (95 % band)

Gain 35 dB (avg)

Input port 2.92 mm

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



X

CRYO LNA

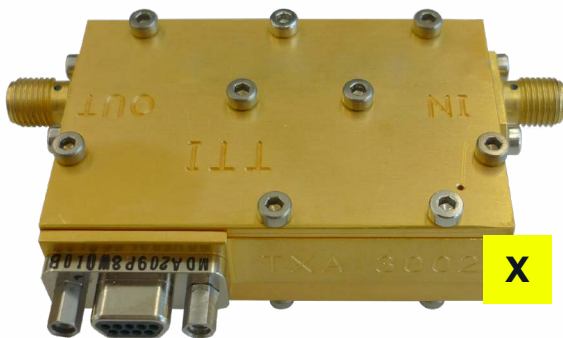
<3 K

8.4 - 8.5 GHz

IRL 15 dB

Gain 40-41 dB

Input port WR112



X

CRYO LNA

<4 K

8 - 9 GHz

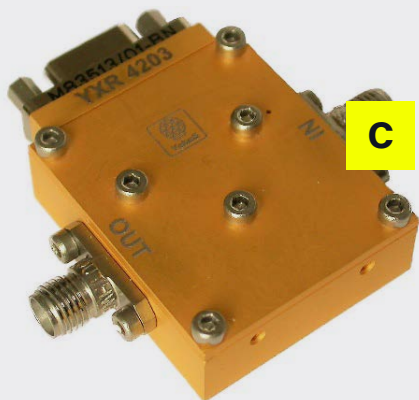
IRL 10 dB

Gain 38-40 dB

Input port SMA

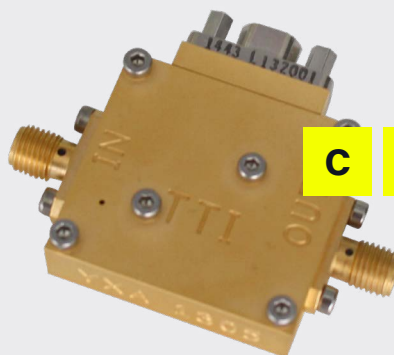
Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



CRYO LNA
5.1 K (avg)
4 - 12 GHz

IRL >10 dB
Gain 33.5 dB (avg)
Input port SMA



CRYO LNA
<5 K
4 - 12 GHz

IRL 3 dB
Gain 38-40 dB
Input port SMA

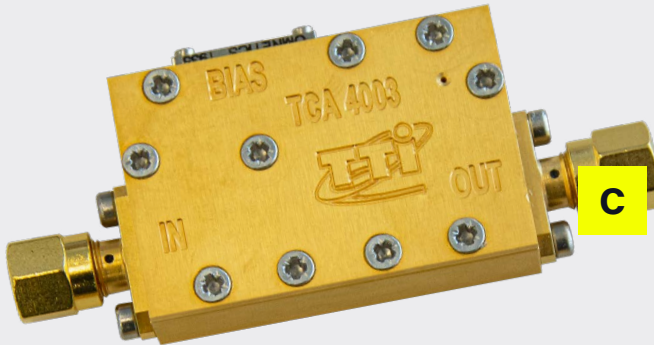


CRYO LNA
4.1 K at 6 K / 4.8 K at 12 K
2 - 18 GHz

IRL >12 dB (65 % band)
Gain 32 dB (avg)
Input port 2.92 mm

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



CRYO LNA

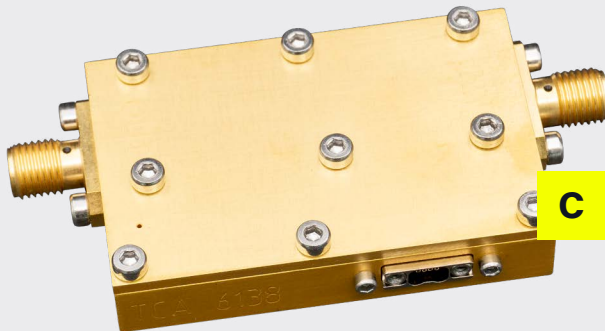
<2.5 K

5.7 - 6.3 GHz

RL in 6 dB

Gain >40 dB

Input port SMA



CRYO LNA

<4 K

4 - 8 GHz

RL in 6 dB

Gain 38- 40 dB

Input port SMA

CRYO LNA

<3.5 K

4 - 8 GHz

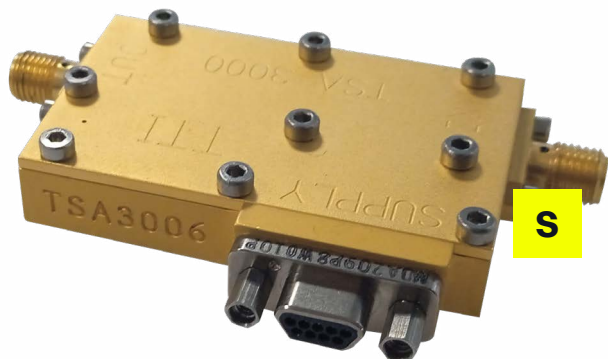
RL in 6 dB

Gain 40- 44 dB

Input port SMA

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



S

CRYO LNA

≤3.5 K

2.3 - 4.8 GHz

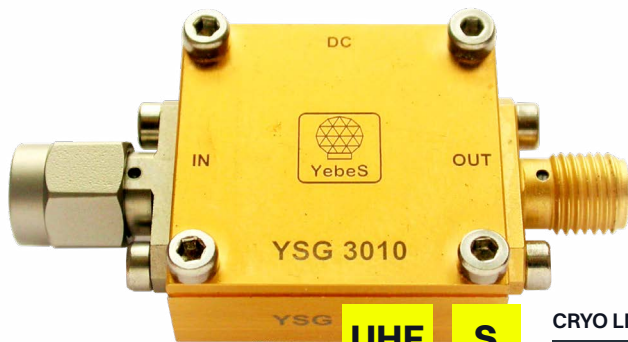
RL in 10 dB
Gain 28 dB
Input port SMA

CRYO LNA

≤3 K

2 - 4.5 GHz

RL in 7 dB
Gain 28 dB
Input port SMA



UHF

S

CRYO LNA

5 K (avg)

0.3 - 3.3 GHz

IRL 9 dB (avg)
Gain 34.5 dB
Input port SMA

CRYO LNA

4.5 K (avg)

0.1 - 1.1 GHz

IRL > 15 dB
Gain 47 dB (avg)
Input port SMA

Cryogenic LNA

RADIOASTRONOMY & QUANTUM COMPUTING



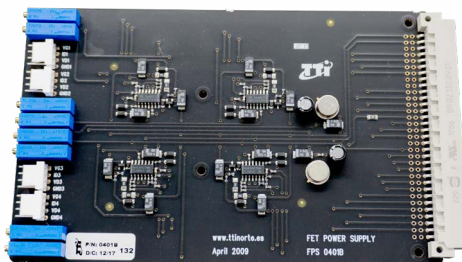
REMOTE CONTROL UNIT

Operation Up to 16 cryo LNAs
 Unit Rack mounting (2RU height)
 Capability Remotely monitors, controls and biasing cryo-LNAs



SERVO CONTROLLER POWER SUPPLY UNIT

Operation Up to 16 cryo LNAs
 Unit Rack mounting (2RU height)
 Capability Biasing cryo-LNAs



SERVO CONTROLLER POWER SUPPLY BOARD

Operation Up to 4 cryo LNAs
 Unit Board
 Capability Biasing cryo-LNAs

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multi-technology solutions**

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Compact LNA

RADIOASTRONOMY & DEEP SPACE

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Compact Low Noise Amplifiers

BAND	TYPE	FREQUENCY	NOISE TEMP.	IRL	GAIN	INPUT PORT
Ka	Compact cryo	25.5 - 27 GHz	≤40 K	10 dB	>50 dB	WR34

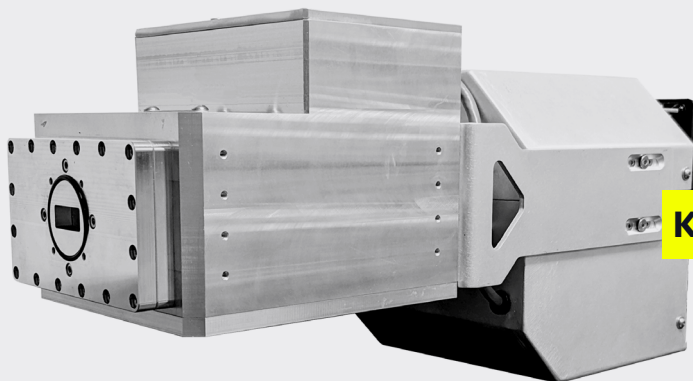
Remote Control Unit for compact cryo LNAs

MODEL	OPERATION	UNIT	CAPABILITY
RCU	Up to 3 compact cryo-LNA	Rack mounting (2RU height)	1:0; 1:1; 1:2 redundancy system

Compact LNA

RADIOASTRONOMY & DEEP SPACE

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Ka

COMPACT LNA

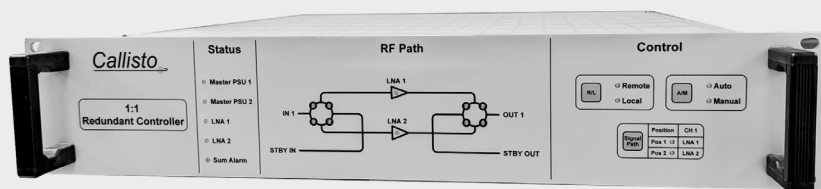
≤40 K

25.5 - 27 GHz

RL in 10 dB

Gain >50 dB

Input port WR34



REMOTE CONTROL UNIT

Operation Up to 3 compact cryo LNAs
Unit Rack mounting (2RU height)
Capability 1:0; 1:1; 1:2 redundancy system



Ambient Low Noise Amplifiers

BAND	TYPE	FREQUENCY	NOISE TEMP.	IRL	GAIN	INPUT PORT
Ka	Warm LNA	25.5 - 27 GHz	<155 K	13 dB	>43 dB	WR34
C - Ka	Warm LNA	4 - 20 GHz	<438.4 K	16 dB	27-28 dB	SMA
C - X	Warm LNA	4-12 GHz	<323 K	16 dB	29-30 dB	SMA
C	Warm LNA	4 - 8 GHz	<101.2 K	13 dB	>33 dB	SMA
		4.5 - 15.5 GHz	<288.6 K	17 dB	35 dB (typ)	SMA

Ambient LNA

RADIOASTRONOMY



Ka

WARM LNA

<155 K

25.5 - 27 GHz

RL in 13 dB
Gain >43 dB
Input port WR34



C

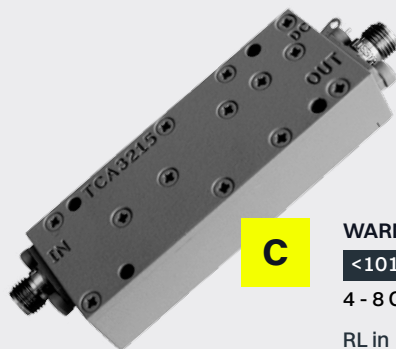
Ka

WARM LNA

<438.4 K

4 - 20 GHz

RL in 16 dB
Gain 27 - 28 dB
Input port SMA



C

WARM LNA

<101.2 K

4 - 8 GHz

RL in 13 dB
Gain >33 dB
Input port SMA

C

X

WARM LNA

<323 K

4 - 12 GHz

RL in 16 dB
Gain 29 - 30 dB
Input port SMA

C

WARM LNA

<288.6 K

4.5 - 15.5 GHz

RL in 17 dB
Gain 35 dB (typ)
Input port SMA

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here for you**

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delighted to assist you.**

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your specific needs, and let's make it a
reality.



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