



### Main Features:

- Frequency Range: 18 to 40 GHz.
- Typical values: Gain 0-23 dB, NF 6 dB
- RF connectors (I/O): 2.92 mm (F)
- DB9 connector for DC connection and control
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-LNA-1800-4000-23-12

The ERZ-LNA-1800-4000-23-12 is a Wideband Low Noise Amplifier with variable gain and a noise figure of 6 dB. The compact size and modularity makes it ideal for a wide range of applications.

### Typical applications:

- Industrial / Laboratory
- Satcom / Telecom
- Space / Aerospace / Military

### Performance

Parameter	Value			Units
	Min	Typ	Max	
Frequency	18	-	40	GHz
Output Power (P1dB) @min att	13	14	16	dBm
Small Signal Gain (@min att / @max att)	21 / -4	23 / 0	27 / 2	dB
Gain Flatness (@min att/ @max att)	-	±1.5 / ±2	-	dB
Noise Figure (@min att)	-	6	8	dB
VSWR input	-	1.8:1	2.0:1	-
VSWR output	-	1.5:1	2.0:1	-
DC Voltage	9	12	15	V
Power Consumption	-	2	-	W
Attenuation range	-	25 (Step 1)	-	dB
RF Connectors	2.92 mm Female IN/OUT			-

Specifications at a case temperature of 25°C at 12V.

### Small Signal Gain

Figure 1 and 2 show the small signal gain measurement at minimum attenuation and at 25 dB attenuation as a function of frequency at room temperature (25°C).

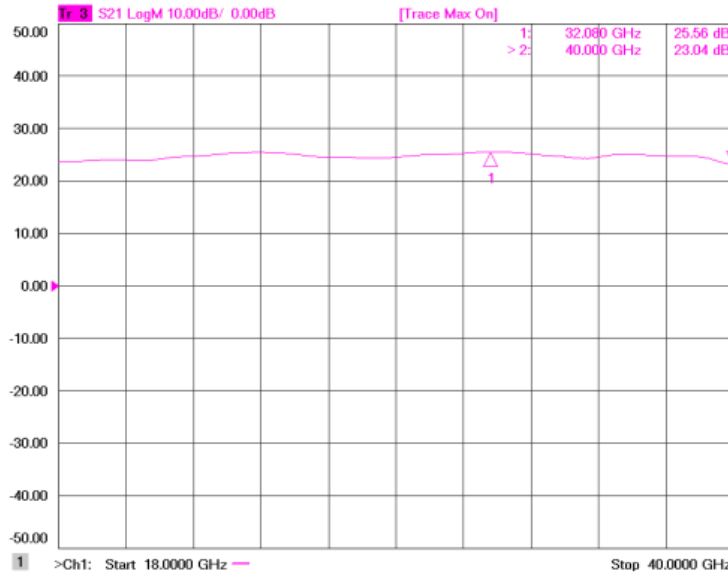


Figure 1: ERZ-LNA-1800-4000-23-12 Small Signal Gain at min att

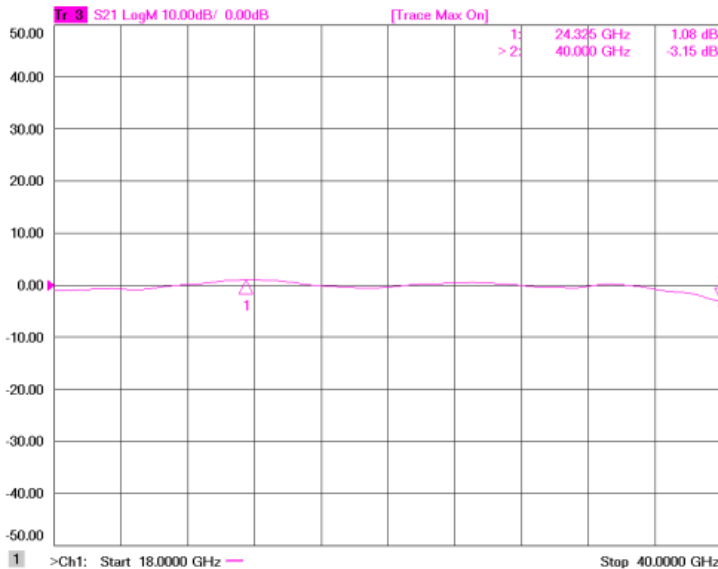


Figure 2: ERZ-LNA-1800-4000-23-12 Small Signal Gain at 25dB att

### Output Power

Figure 3 shows output power at 1 dB compression measurement as a function of frequency at room (25°C) and high temperature.

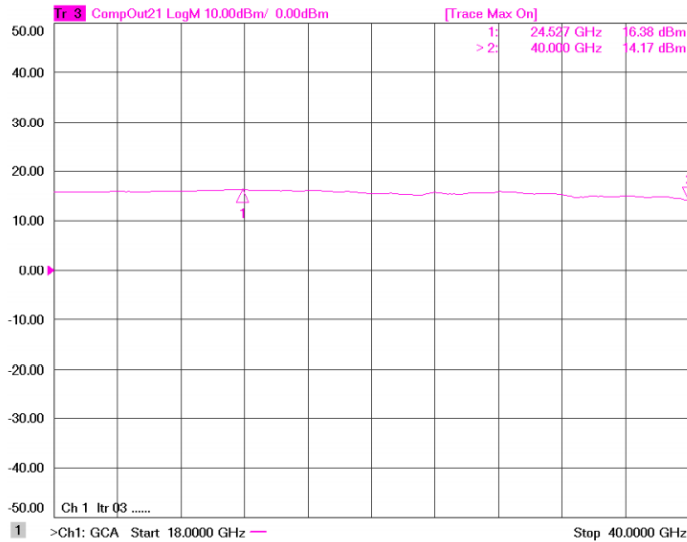


Figure 3: ERZ-LNA-1800-4000-23-12 P1dB

### Noise Figure

Figure 4 shows the noise figure measurement at minimum attenuation as a function of frequency at room temperature (25°C).

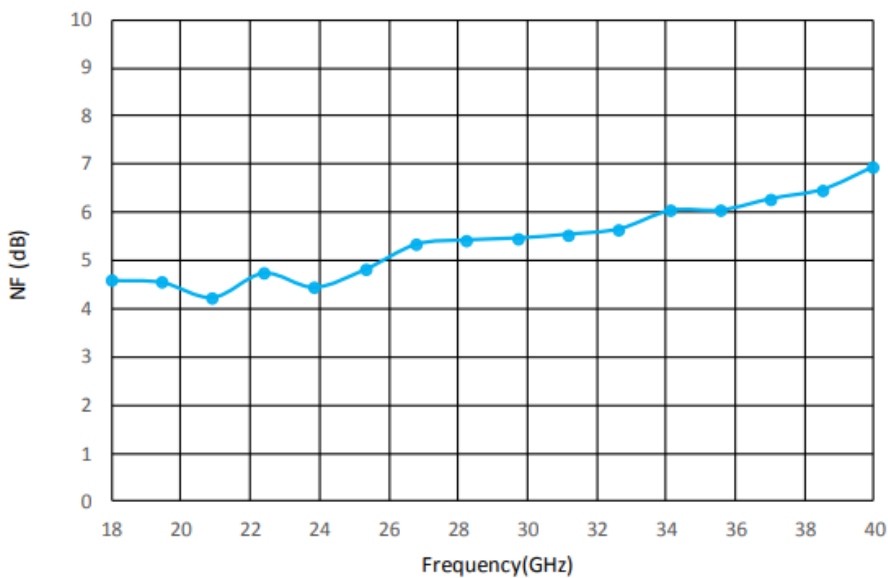


Figure 4: ERZ-LNA-1800-4000-23-12 Noise Figure at min att

### Input and Output Matching

Figure 5 and Figure 6 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

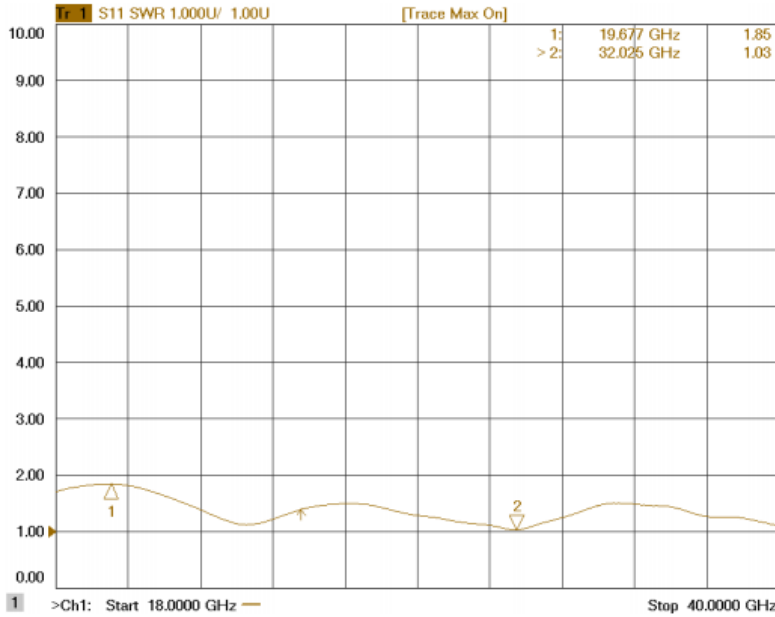


Figure 5: ERZ-LNA-1800-4000-23-12 Input Matching

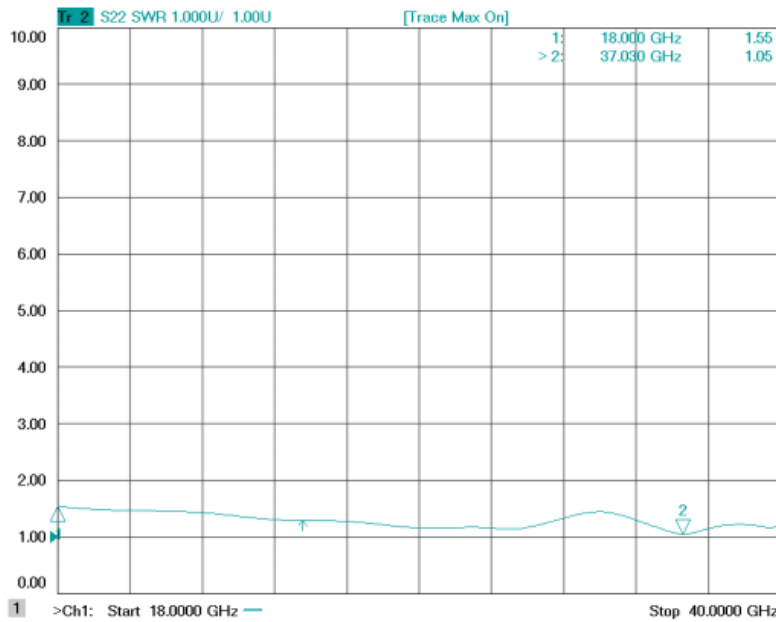
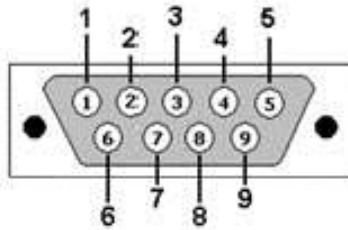


Figure 6: ERZ-LNA-1800-4000-23-12 Output Matching

### Electrical Interfaces

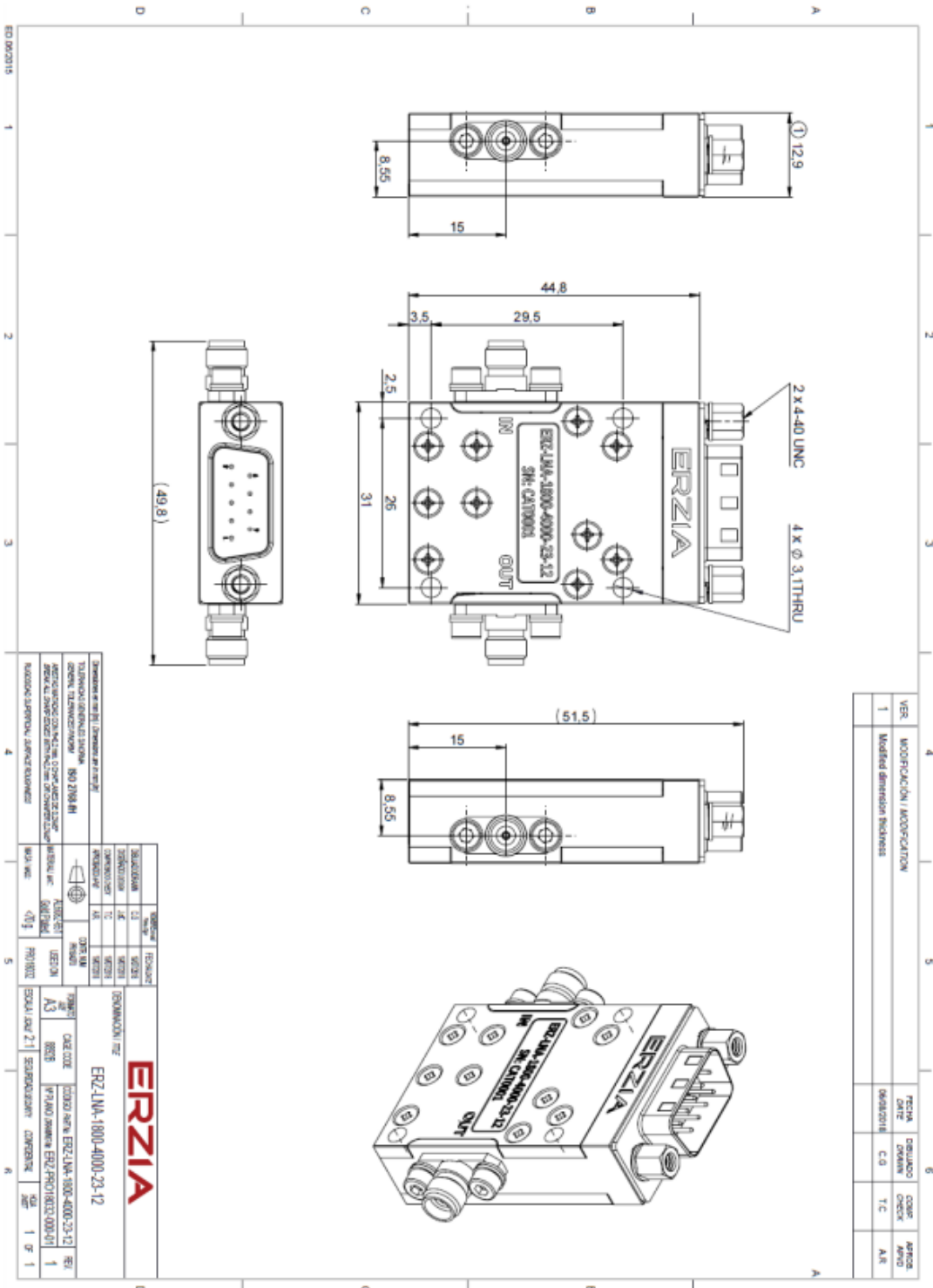
DB9 male connector



*DB9 Male Front View.*

Pin No.	Description	Signal
1	VCC	+12 VDC Power source
2	VCC	+12 VDC Power source
3	DGND	Digital Ground
4	MISO	Master Input Slave Output
5	MOSI	Master Output Slave Input
6	GND	Power Ground
7	GND	Power Ground
8	CS	Chip Select
9	SCLK	Signal Clock

### Mechanics and Housing



### Absolute Maximum Ratings

Condition	Value
DC Voltage	+15 VDC
Maximum Input Power (CW)	+15 dBm
Operation temperature (at case)	-45 to 85°C
Storage temperature	-55 to 125°C

- Stress above these ratings may cause permanent damage to the device.
- It is final user responsibility to maintain the amplifier within the specified ranges.

### Measurements Conditions

All measurements provided in this report were performed at the following conditions:

Condition	Value
Temperature (DUT ON)	25°C ± 1°C
Humidity	44% ± 10%
DUT Warm up time	30 min
DUT minimum operation time	24 hours
Test equipment warm up time	2 hours
Additional temperature cycles in climatic chamber (DUT OFF)	-40°C to 85°C

### Environmental Specifications (By Design)

Operating Temperature:	-45 to +85 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

### RoHS & REACH Compliance

This part is compliant with EU 2011/65/UE RoHS (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment) and REACH (Registration, Evaluation, Authorization and restriction of Chemical substances) directives.



## Documentation and Test Reports

All modules are at least delivered with: Electrical Test Report, Certificate of Conformance, Certificate of Acceptance and Origin. Optionally, units can be environmentally tested (temperature, vibration...).

## Option (HS): Heat Sink

A heat sink (HS) can be provided to allow the operation of Power Amplifiers. Please note that most power amplifiers need heat sink or appropriate heat dissipation strategy.

## Space / Military Usage

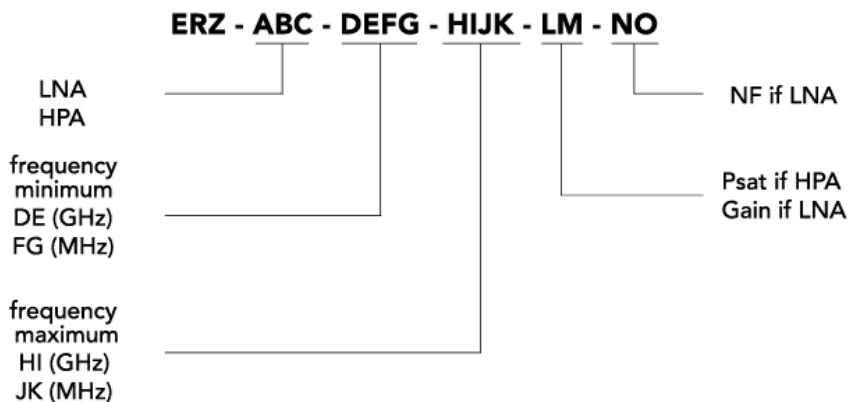
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

## Customization and Extended Performances

ERZIA can fully design or adapt one of the existing RF amplifiers designs according to your specifications. Please contact us for additional information.

## Model Number Codification

### MODEL NUMBER





# ERZIA

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