



### Main Features:

- Frequency Range: 18 to 42 GHz.
- Typical values: Gain 24 dB, NF 5 dB
- RF connectors (I/O): 2.92mm Female
- Solder filtered pins for DC connection
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-LNA-1800-4200-24-6

The ERZ-LNA-1800-4200-24-6 is a Low Noise Amplifier providing a gain of 24 dB with a noise figure of 5 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	-	42	GHz
Output Power (P1dB)	7	9	12	dBm
Small Signal Gain	22	24	26	dB
Gain Flatness	-	±1.5	-	dB
Noise Figure	3.5	5	6.5	dB
OIP3	15	18	21	dBm
VSWR input	1.0:1	1.5:1	2.5:1	-
VSWR output	1.0:1	1.5:1	2.5:1	-
DC Voltage	12	15	18	V
Power Consumption	-	1	-	W
RF Connectors	2.92mm Female IN/OUT			-

Specifications at a case temperature of 25°C

### Output Power at 1 dB Compression

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

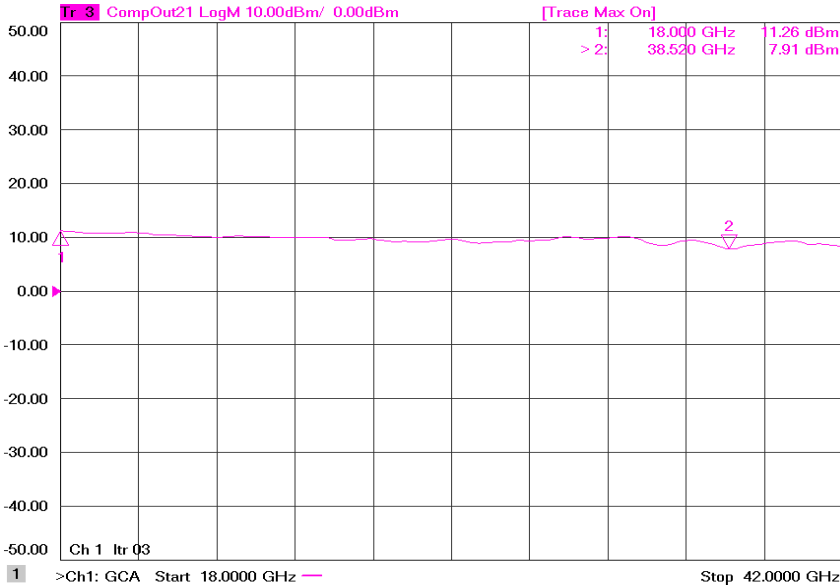


Figure 1: ERZ-LNA-1800-4200-24-6 P1dB

### Small Signal Gain

Figure 2 shows the small signal gain measurement as a function of frequency at room temperature (25°C).

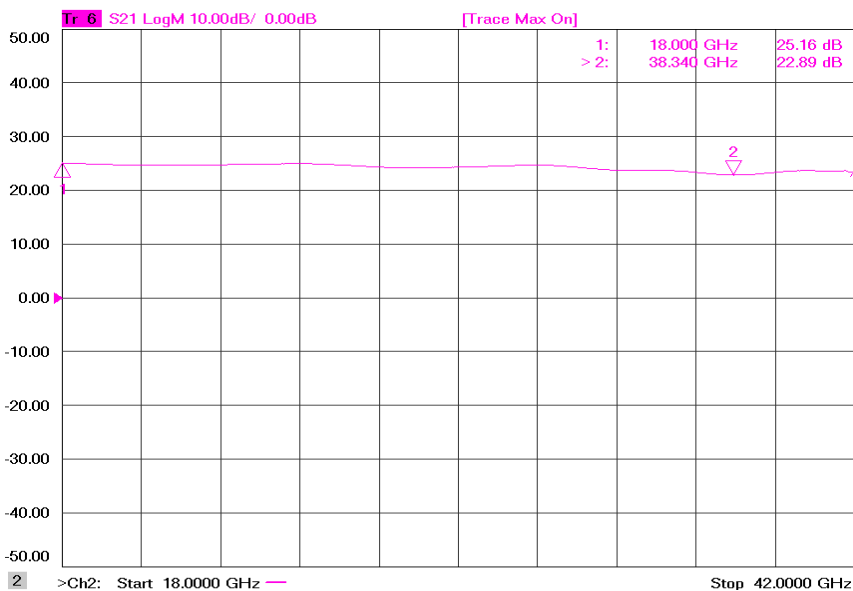


Figure 2: ERZ-LNA-1800-4200-24-6 Small Signal Gain

### Small Signal Gain Vs Temperature

Figure 3 shows small signal gain measurement as a function of frequency at low (-54°C), room (25°C) and high (85°C) temperatures.

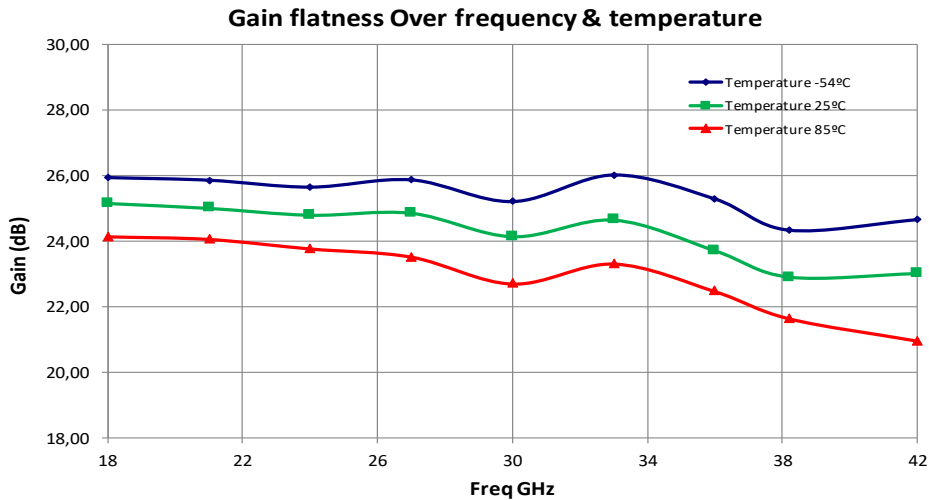


Figure 3: ERZ-LNA-1800-4200-24-6 Small Signal Gain Vs Temperature

### Noise Figure

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

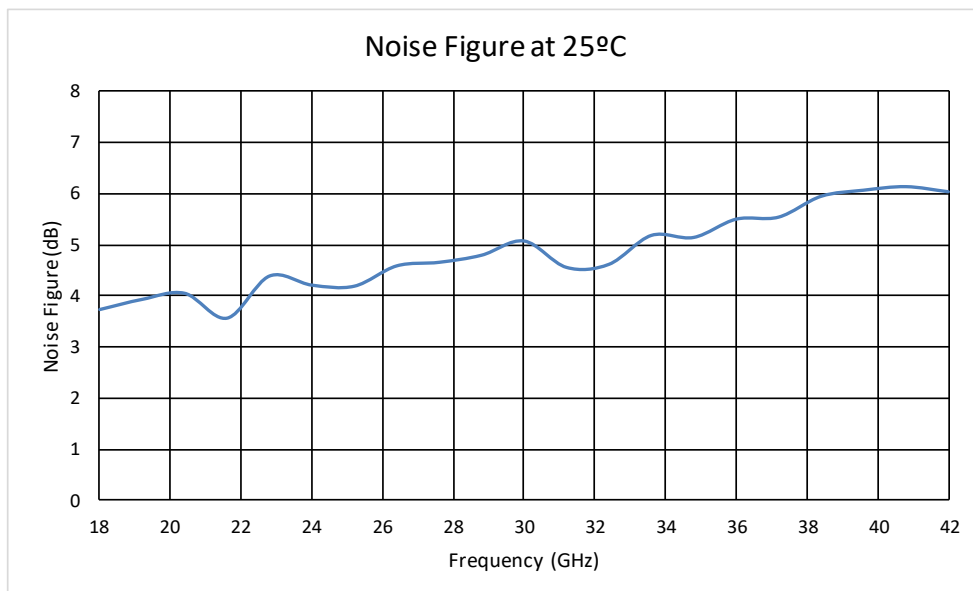


Figure 4: ERZ-LNA-1800-4200-24-6 Noise Figure

### OIP3

Figure 5 shows OIP3 measurement as a function of frequency at room temperature (25°C).

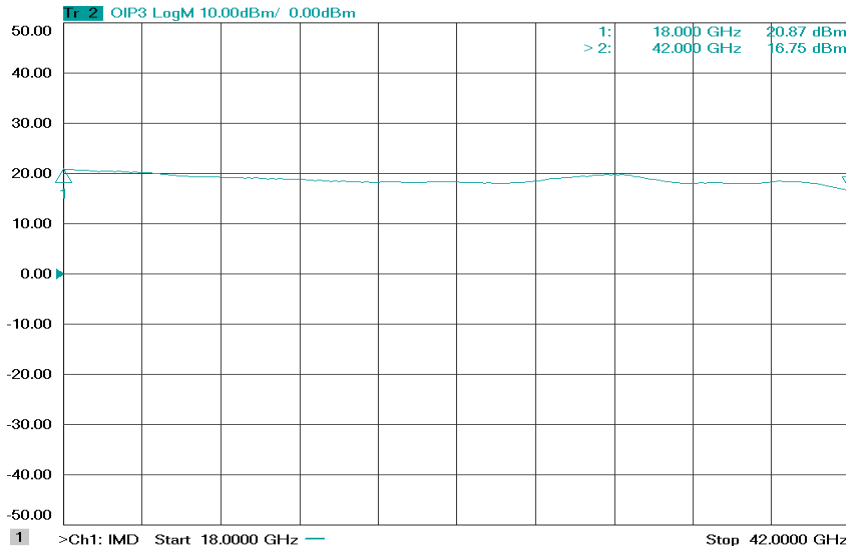


Figure 5: ERZ-LNA-1800-4200-24-6 OIP3

### Input and Output Matching

Figure 6 and Figure 7 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

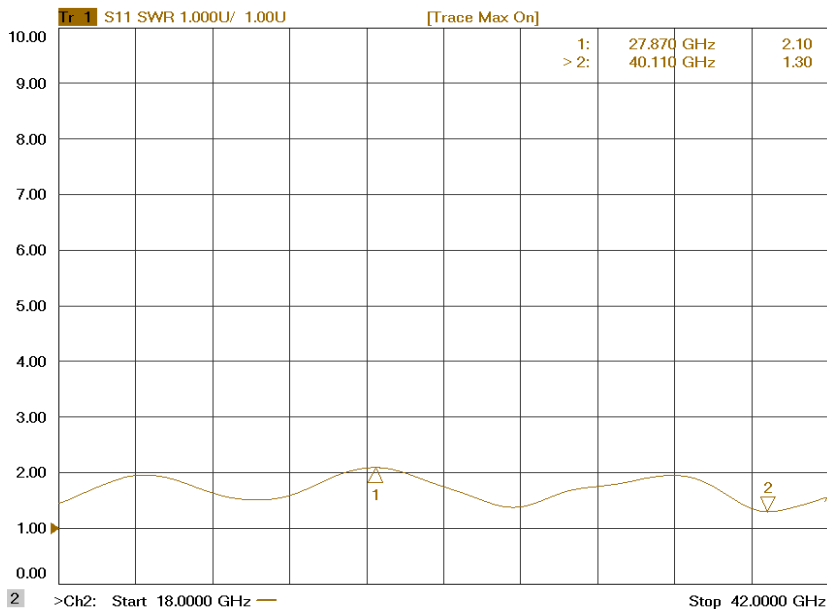


Figure 6: ERZ-LNA-1800-4200-24-6 Input Matching

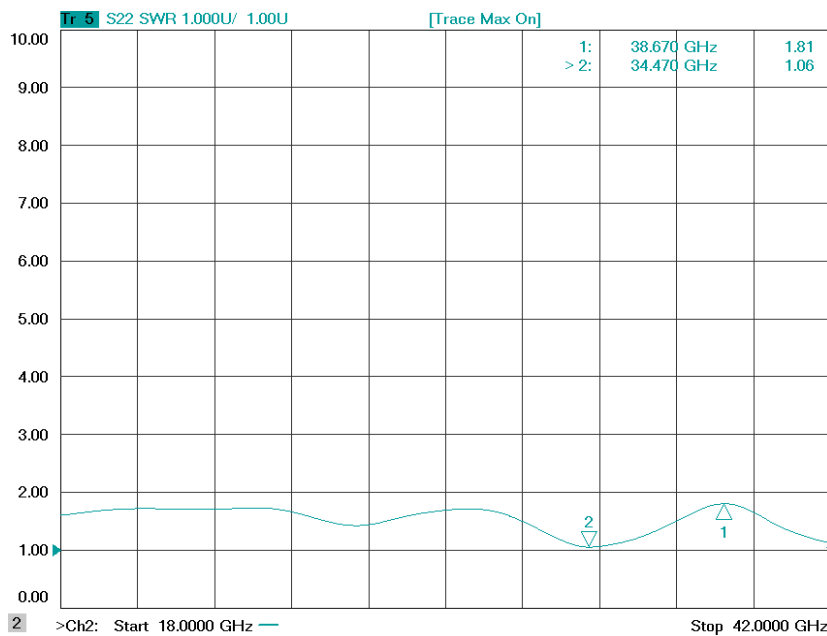


Figure 7: ERZ-LNA-1800-4200-24-6 Output Matching

### Absolute Maximum Ratings

Condition	Value
DC Voltage	+18 VDC
Maximum Input Power (CW)	23 dBm
Operation temperature (at case)	-54 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:	-54 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.



### Mechanics and Housing

Top view dimensions: 18.9, 16.3, 6.5, 3.33, 1.7, 15.57, 15.57, 9.45, 5, 7.4, (23.7)

Side view dimensions: 35.1, 5.6, 2.9

Perspective view shows: ERZIA, ERZ-LNA-1800-4200-24-6, IN, OUT, +VCC, -VCC, SMA connectors.

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REVISION	FECHA DATE	REVISION	FECHA DATE
1	08/02/2019	1	08/02/2019
2	08/02/2019	2	08/02/2019
3	08/02/2019	3	08/02/2019

PROYECTO PROJECT	FECHA DATE	PROYECTO PROJECT	FECHA DATE
88028	08/02/2019	88028	08/02/2019
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### 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

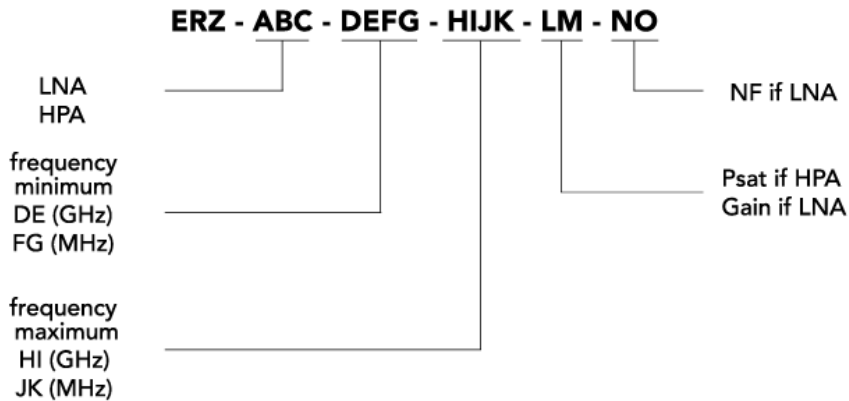
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### 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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