



### Main Features:

- Frequency Range: 2 to 18 GHz.
- Typical values: Gain 20 dB, NF 3 dB
- RF connectors (I/O): SMA 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-0200-1800-18-4

The ERZ-LNA-0200-1800-18-4 is a Low Noise Amplifier providing a gain of 20 dB with a noise figure of 3 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           | 2                 | -     | 18    | GHz   |
| Output Power (P1dB) | 19                | 22    | 26    | dBm   |
| Small Signal Gain   | 18                | 20    | 24    | dB    |
| Gain Flatness       | -                 | ±1.5  | -     | dB    |
| Noise Figure        | 1.5               | 3     | 4     | dB    |
| VSWR input          | 1.0:1             | 1.5:1 | 1.9:1 | -     |
| VSWR output         | 1.0:1             | 1.5:1 | 2.1:1 | -     |
| DC Voltage          | 10                | 12    | 14    | V     |
| Power Consumption   | -                 | 3     | -     | W     |
| RF Connectors       | SMA Female IN/OUT |       |       | -     |

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

### 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).

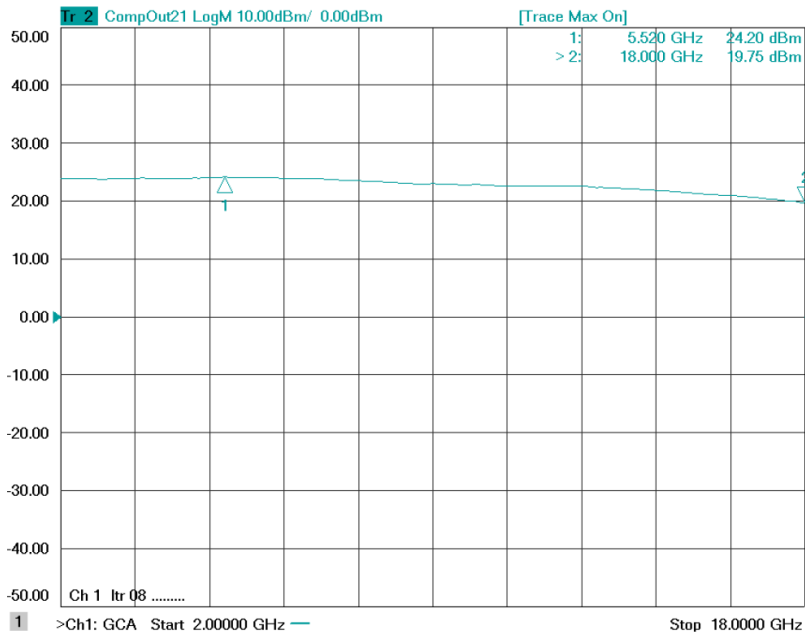


Figure 1: ERZ-LNA-0200-1800-18-4 P1dB

### Small Signal Gain

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

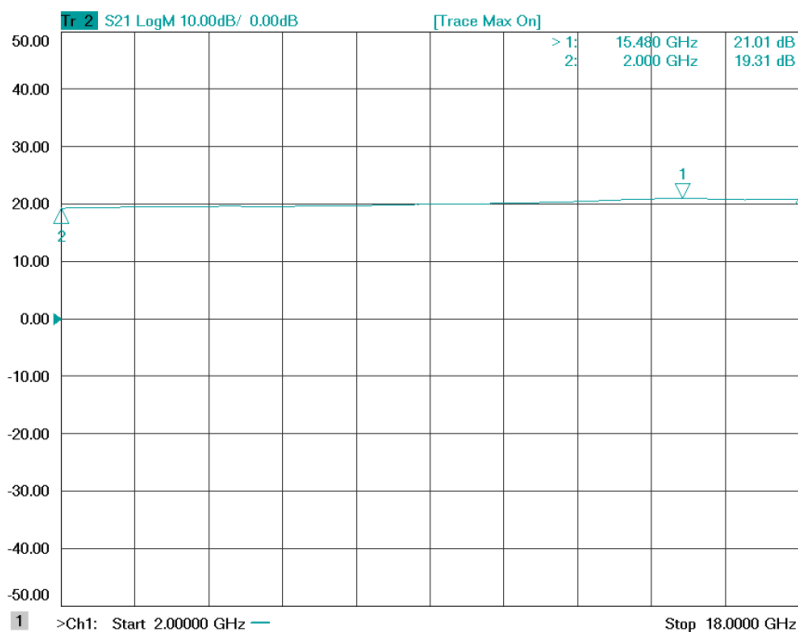


Figure 2: ERZ-LNA-0200-1800-18-4 Small Signal Gain

### Small Signal Gain Vs Temperature

Figure 3 shows small signal gain measurement as a function of frequency at low (-35°C), room (25°C) and high (70°C) temperatures.

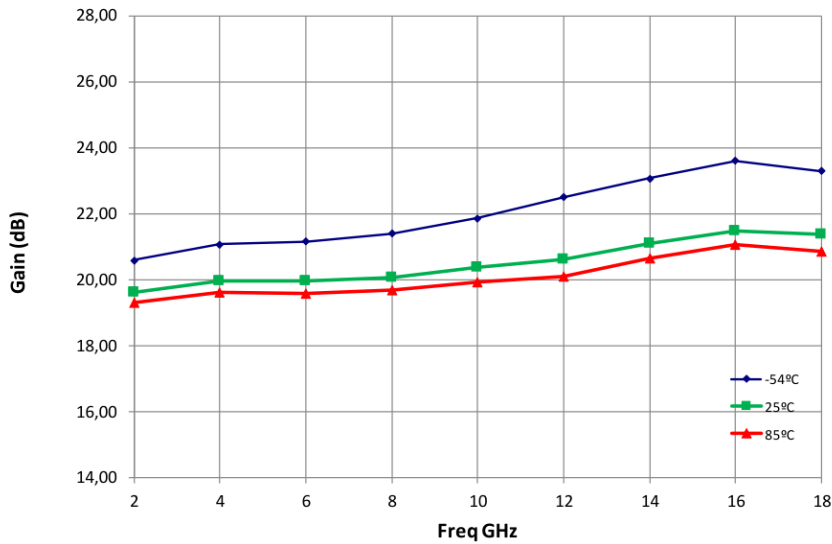


Figure 3: ERZ-LNA-0200-1800-18-4 Small Signal Gain Vs Temperature

### Noise Figure

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

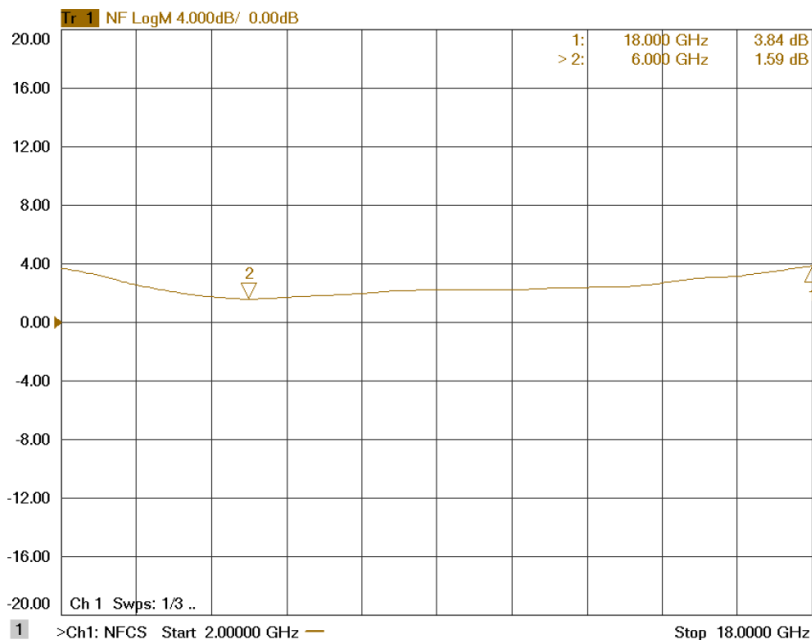


Figure 4: ERZ-LNA-0200-1800-18-4 Noise Figure

### Noise Figure Vs Temperature

Figure 5 shows noise figure measurement as a function of frequency at low (-45°C), room (25°C) and high (85°C) temperatures.

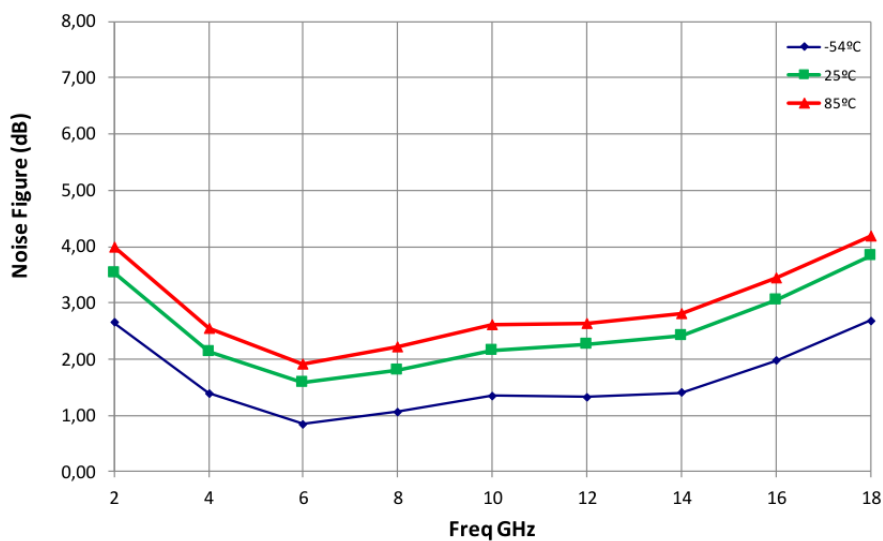


Figure 5: ERZ-LNA-0200-1800-18-4 Noise figure Vs Temperature

### 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).

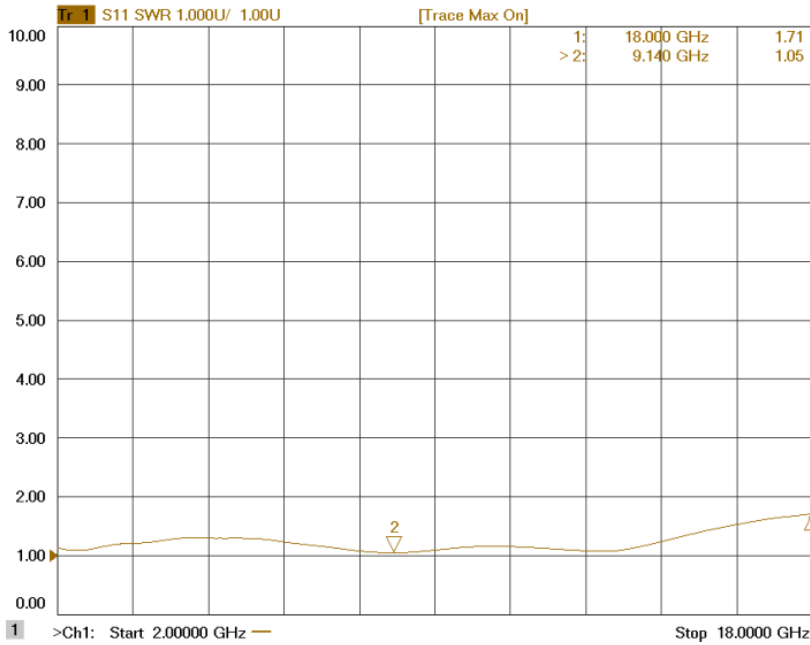


Figure 6: ERZ-LNA-0200-1800-18-4 Input Matching

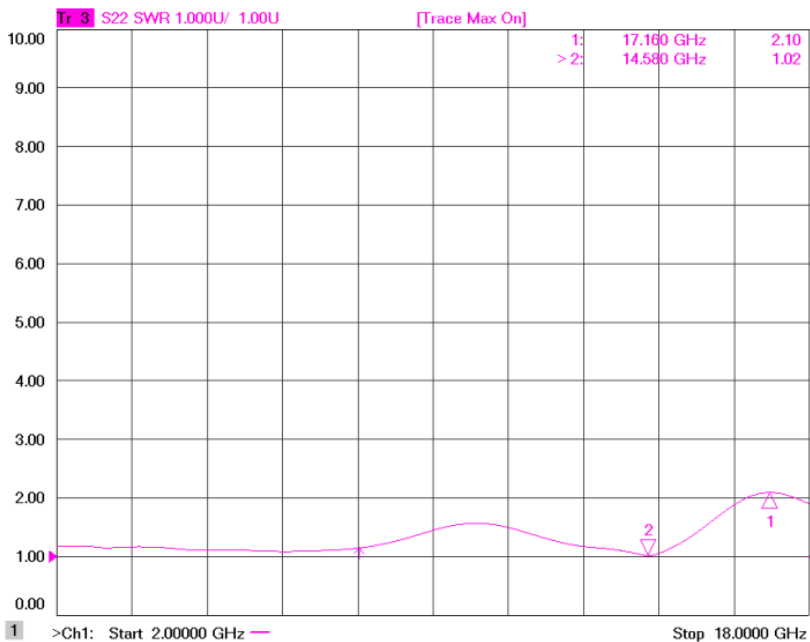


Figure 7: ERZ-LNA-0200-1800-18-4 Output Matching

### Absolute Maximum Ratings

| Condition                       | Value         |
|---------------------------------|---------------|
| DC Voltage                      | +14 VDC       |
| Maximum Input Power (CW)        | 20 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

|      |                             |            |                |                  |                   |
|------|-----------------------------|------------|----------------|------------------|-------------------|
| VER. | MODIFICACION / MODIFICATION | FECHA DATE | DISEÑADO DRAWN | COMPROBADO CHECK | APROBADO APPROVED |
| 1    |                             |            |                |                  |                   |

|          |        |        |            |              |      |
|----------|--------|--------|------------|--------------|------|
| MATERIAL | NICKEL | FINISH | POLISHED   | INDICACIONES |      |
| REVISION | 1.0    | DATE   | 2015-01-20 | DRAWN        | R.F. |
| CHECKED  | R.F.   | DATE   | 2015-01-20 | APPROVED     | R.F. |
| MATERIAL | NA     | FINISH | NA         | PROCESO      | NA   |
| MATERIAL | NA     | FINISH | NA         | PROCESO      | NA   |

|          |        |        |            |              |      |
|----------|--------|--------|------------|--------------|------|
| MATERIAL | NICKEL | FINISH | POLISHED   | INDICACIONES |      |
| REVISION | 1.0    | DATE   | 2015-01-20 | DRAWN        | R.F. |
| CHECKED  | R.F.   | DATE   | 2015-01-20 | APPROVED     | R.F. |
| MATERIAL | NA     | FINISH | NA         | PROCESO      | NA   |
| MATERIAL | NA     | FINISH | NA         | PROCESO      | NA   |

Dimensiones en mm (Dimensiones en pulgadas)  
 Tolerancias: ±0.1 mm (±0.004 pulgadas)  
 GENERAL TOLERANCIAS: ISO 2768-1-1809 m  
 MATERIALS DIMENSIONS: GENERAL TOLERANCES: ISO 2768-1-1809 m  
 MATERIAL DIMENSIONS: GENERAL TOLERANCES: ISO 2768-1-1809 m  
 RUGOSIDAD SUPERFICIAL SURFACE FINISH: RA 0.8

### 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

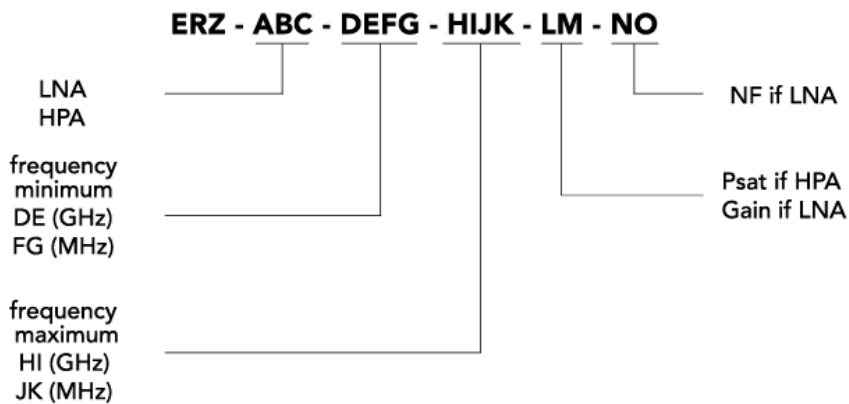
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### 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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