



### Main Features:

- Frequency Range: 17.7 to 22 GHz.
- Typical values: NF 1.2 dB , Gain 39 dB.
- RF connectors (I/O): WR42 / 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-1770-2200-40-1.2

The ERZ-LNA-1770-2200-40-1.2 is a Low Noise Amplifier providing a noise figure of 1.2 dB and gain of 39 dB. The compact size and modularity makes it ideal for a wide range of applications.

### Typical applications:

- Satcom

### Performance

Parameter	Value			Units
	Min	Typ	Max	
Frequency	17.7	-	22	GHz
Output Power @P1dB	9	10	11	dBm
Small Signal Gain	38	39	41	dB
Gain Flatness	-	±0.3	-	dB
Noise Figure	-	1.2	1.4	dB
VSWR input	1.3:1	1.5:1	2.0:1	-
VSWR output	1.6:1	1.8:1	2.0:1	-
DC Voltage	3.135	3.3	3.465	V
Power Consumption	-	1.1	-	W
RF Connectors (IN/OUT)	WR42 / SMA Female			-

Specifications at a case temperature of 25°C at 3.3 V

### Small Signal Gain

The following figure shows small signal gain as a function of frequency at room temperature (25°C).

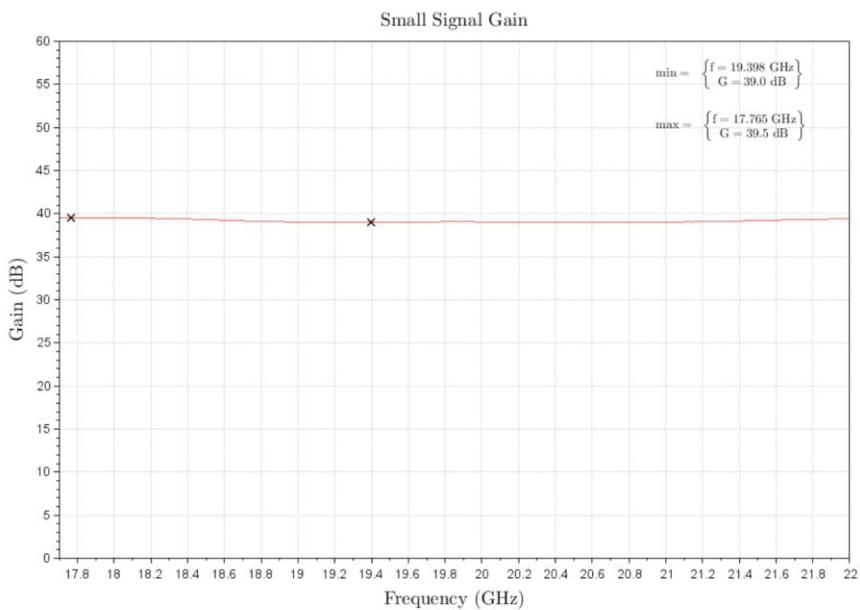


Figure 1: ERZ-LNA-1770-2200-40-1.2 Small Signal Gain

### Gain flatness over frequency and temperature

The next figure shows small signal gain flatness over frequency and temperature at -40°C, 25°C and 85°C.

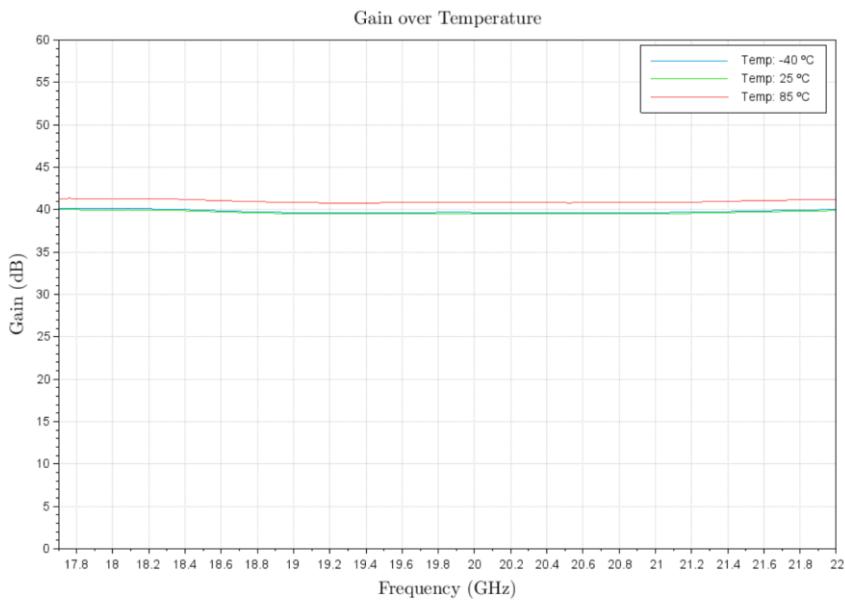


Figure 2: ERZ-LNA-1770-2200-40-1.2 Gain flatness over temperature.

## Noise Figure

The following figure shows noise figure as a function of frequency at room temperature (25°C).

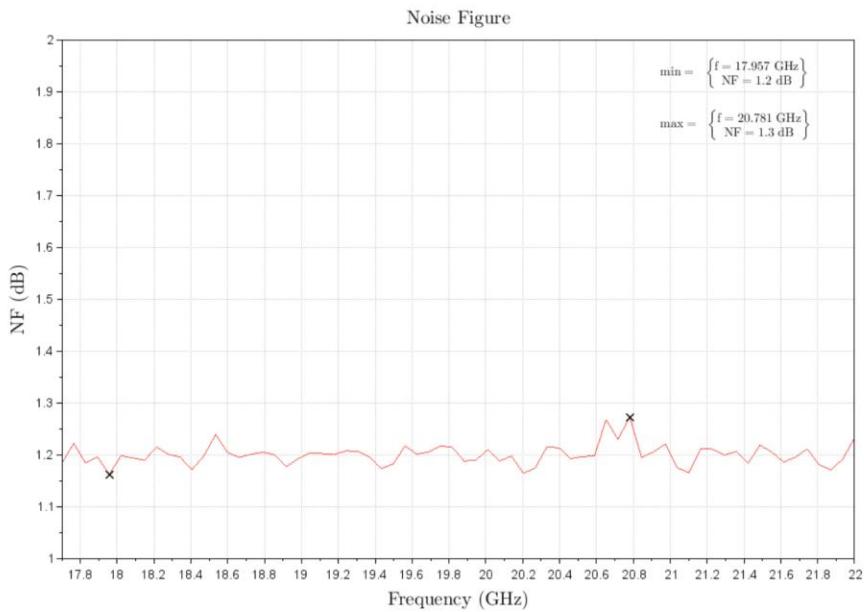


Figure 3: ERZ-LNA-1770-2200-40-1.2 Noise Figure.

## Output Power

The next figure shows output power at P1dB at room temperature (25°C)

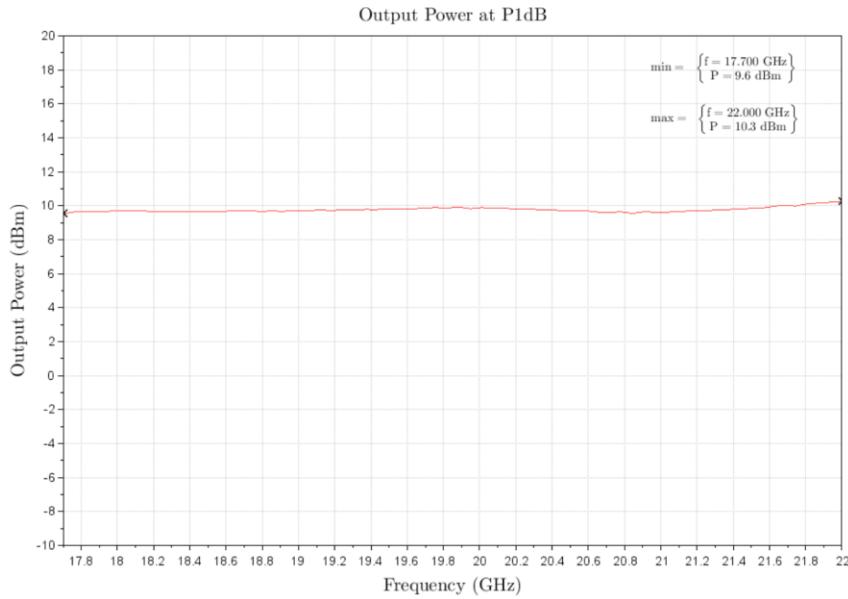


Figure 4: ERZ-LNA-1770-2200-40-1.2 P1dB

## Input/Output Matching

The following figure shows input VSWR (S11) and output VSWR (S22) as a function of frequency at room temperature (25°C).

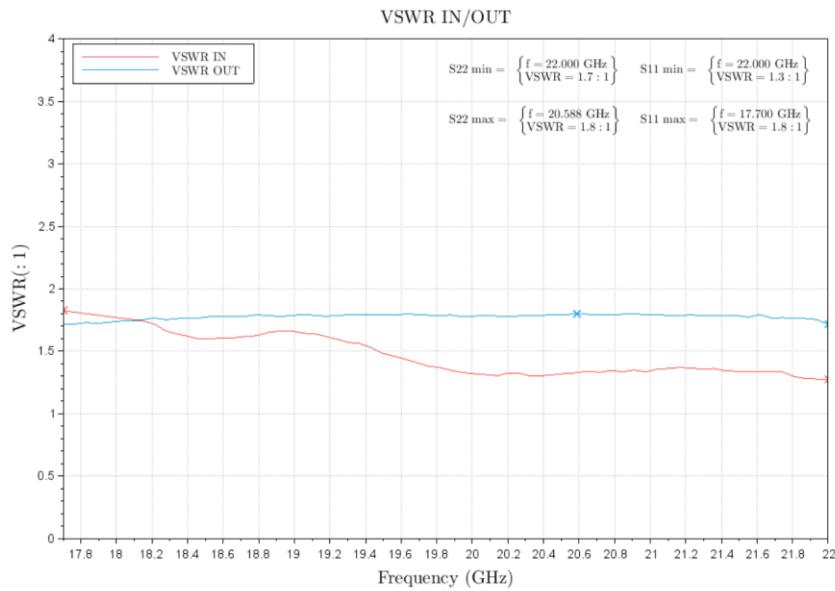


Figure 5: ERZ-LNA-1770-2200-40-1.2 Input/Output Matching

### Absolute Maximum Ratings

Condition	Value
DC Voltage	+15 VDC
Maximum Input Power (CW)	19 dBm
Operation temperature (at case)	-40 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)

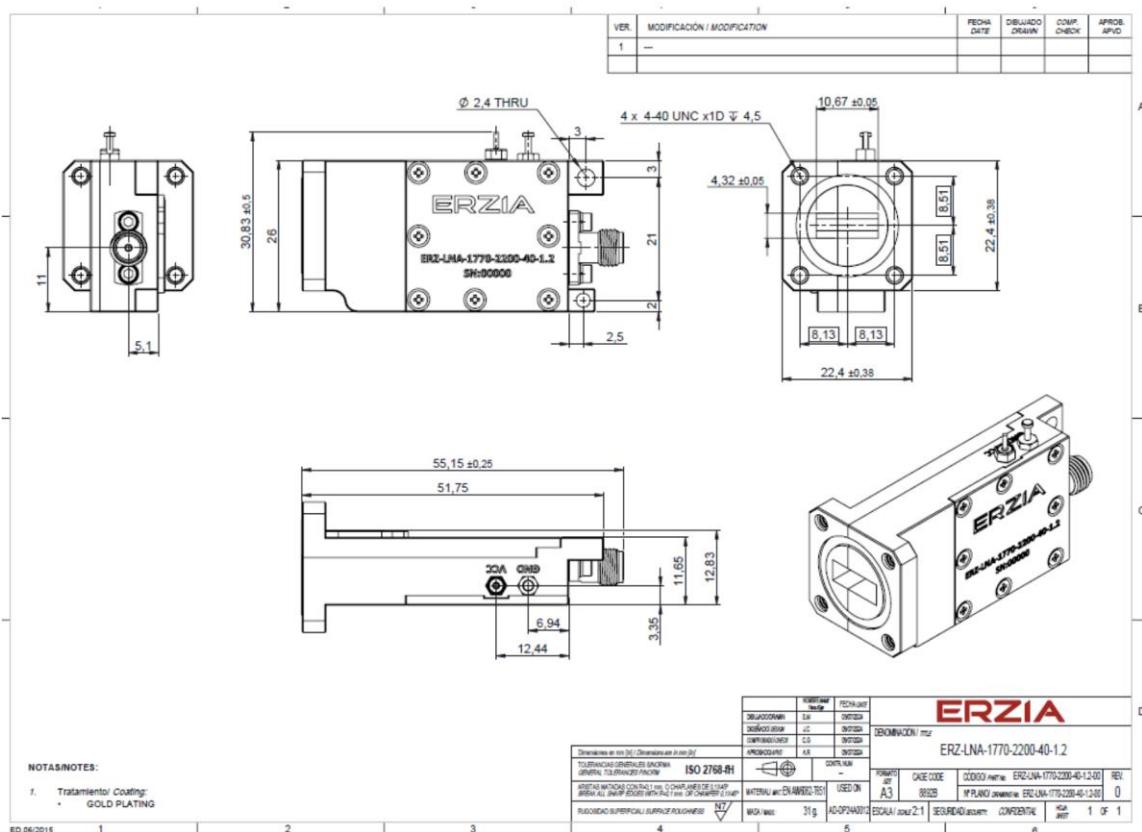
Operating Temperature:	-40 to +85 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g, 11ms, saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

### 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



Parameter	Value
Size	51.75x26x22.4 mm
Weight	31 grams +/-10%
RF Input Connector	WR42
RF Output Connector	SMA Female
DC Connector	Filter Pins

### 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

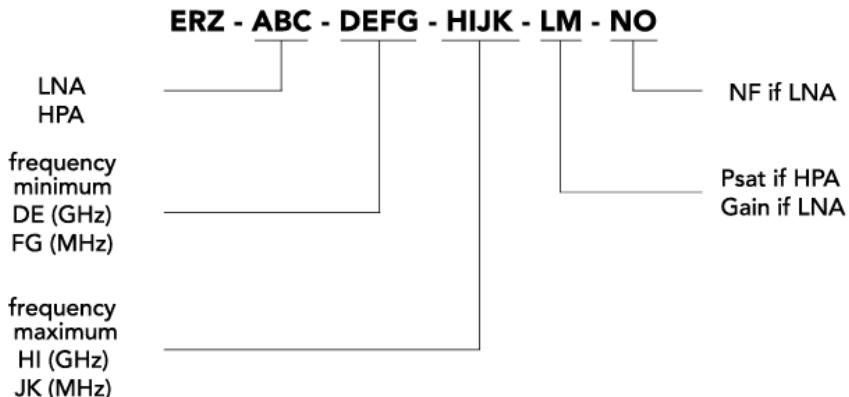
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to ECSS or specific hi-rel standard-screening for space, aeronautics or specific hi-reliability usage.

### 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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