ERZIA
DATASHEET

Low Noise Amplifier

ERZ-LNA-1770-2200-40-1.2

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 platted 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).

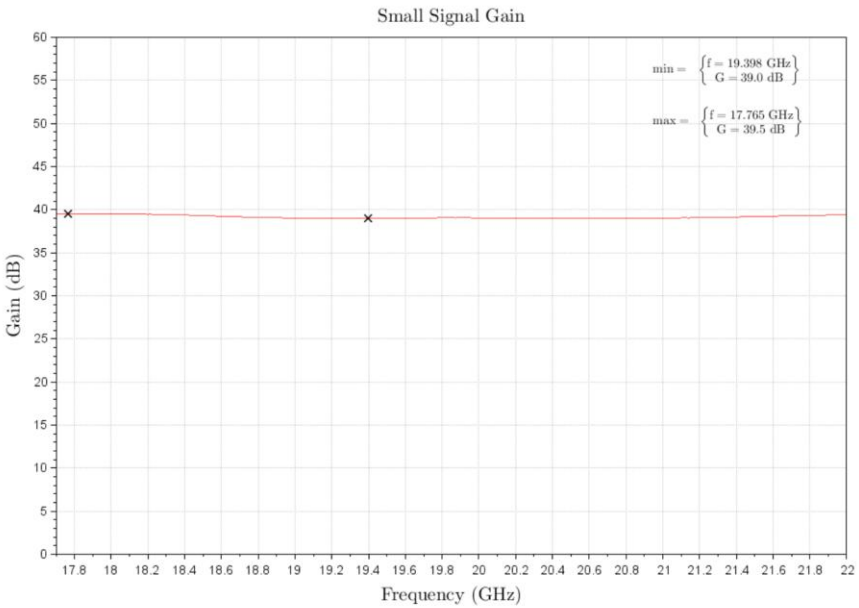


Figure 1: ERZ-LNA-1770-2200-40-1.2 Small Signal Gain

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.

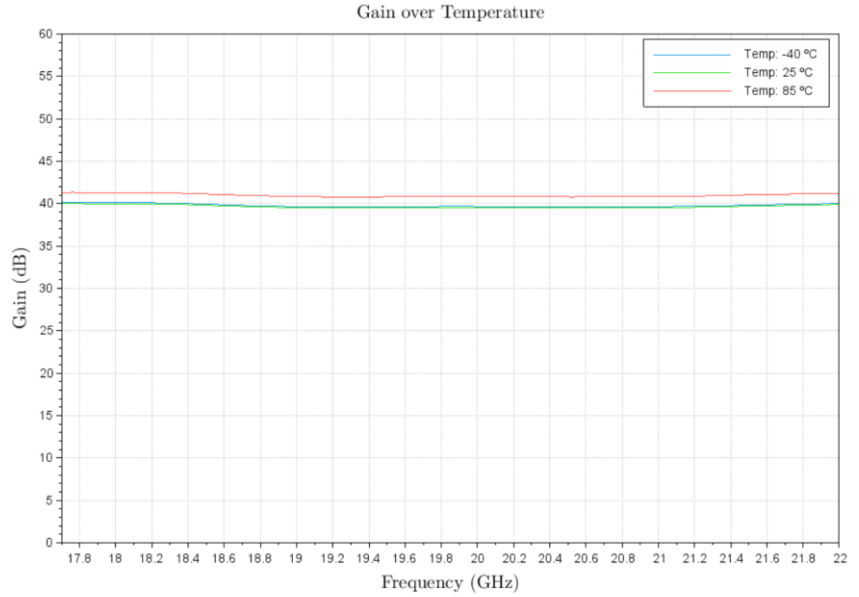


Figure 2: ERZ-LNA-1770-2200-40-1.2 Gain flatness over temperature.

Noise Figure

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

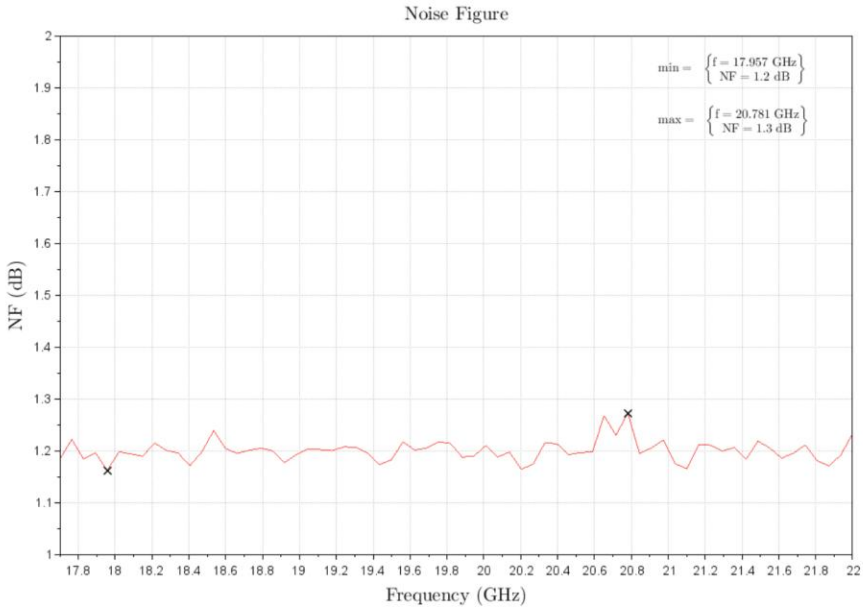


Figure 3: ERZ-LNA-1770-2200-40-1.2 Noise Figure.

Output Power

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

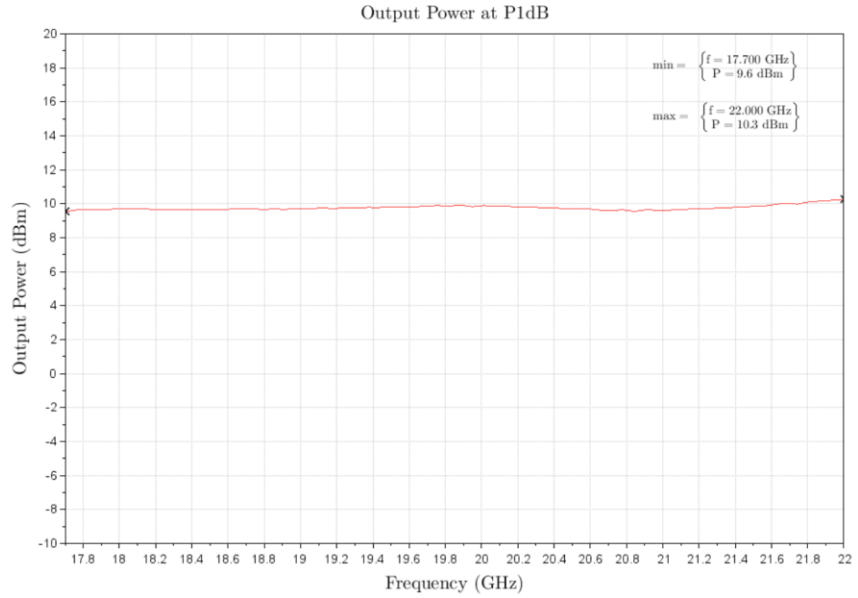


Figure 4: ERZ-LNA-1770-2200-40-1.2 P1dB

Input/Output Matching

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

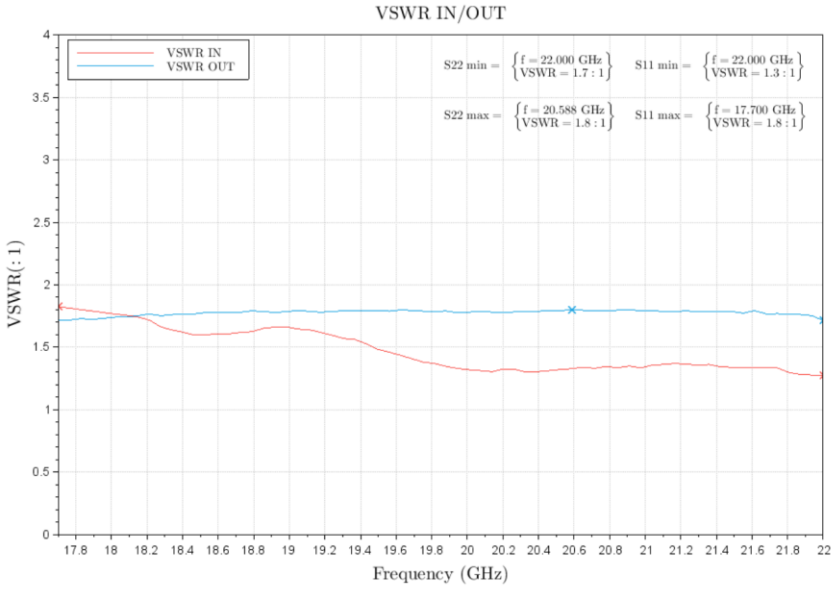


Figure 5: ERZ-LNA-1770-2200-40-1.2 Input/Output Matching

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)

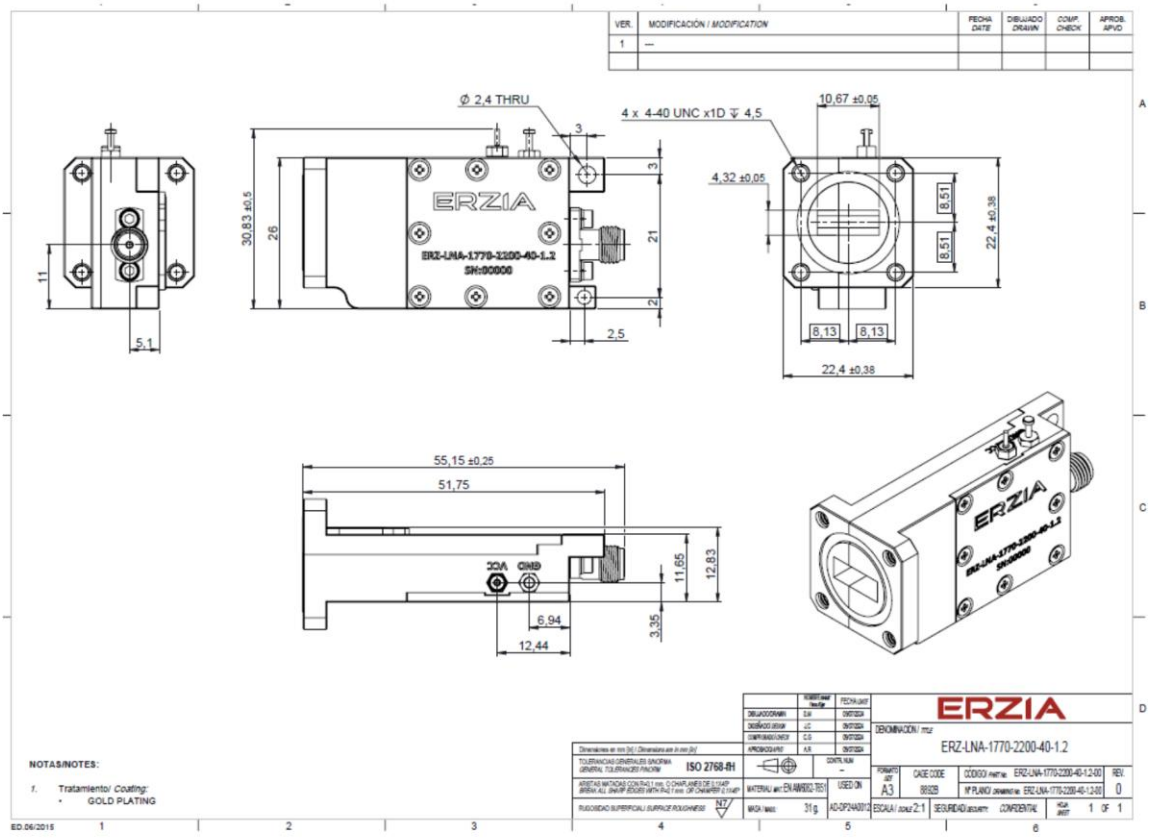
RoHS & REACH Compliance

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.

Low Noise Amplifier

ERZ-LNA-1770-2200-40-1.2

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

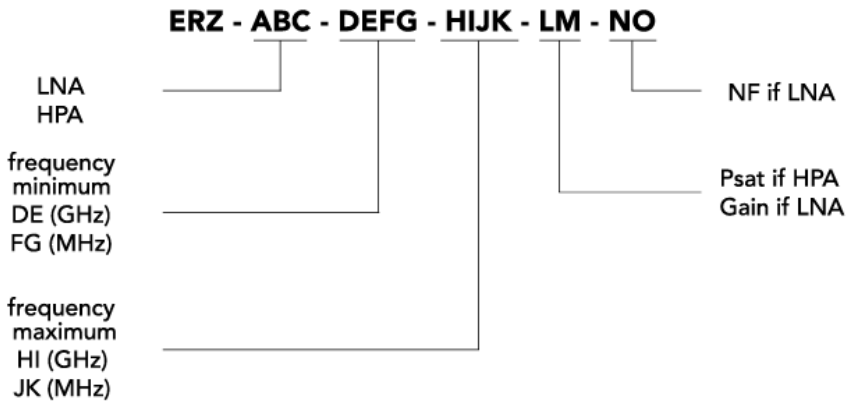
Most of ERZIA´s products are based on rad-hard technologies and can be manufactured and integrated according to ECSS or specific hi-rel standard-screening for space, aeronautics or specific hi-reliability usage.

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



20241220_rev1.0

Tel: +34 942 29 13 42 sales@erzia.com www.erzia.com