



Main Features:

- Frequency Range: 0.5 to 18 GHz.
- Typical values: Gain -8 to +25 dB, NF 4 dB
- RF connectors (I/O): SMA (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-0050-1800-23-8

The ERZ-LNA-0050-1800-23-8 is a Wideband Low Noise Amplifier with variable gain and a noise figure of 4 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	0.5	-	18	GHz
Output Power (P1dB) @min att	14	16	18	dBm
Small Signal Gain (@min att / @max att)	20 / -8	23 / -3	26 / -1	dB
Gain Flatness (@min att / @max att)	-	±1.5 / ±3	-	dB
Noise Figure (@min att)	-	4	8	dB
VSWR input	-	1.5:1	2.0:1	-
VSWR output	-	1.5:1	2.2:1	-
DC Voltage	9	12	15	V
Power Consumption	-	2	-	W
Attenuation range	-	25 (Step 0.5)	-	dB
RF Connectors	SMA 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).

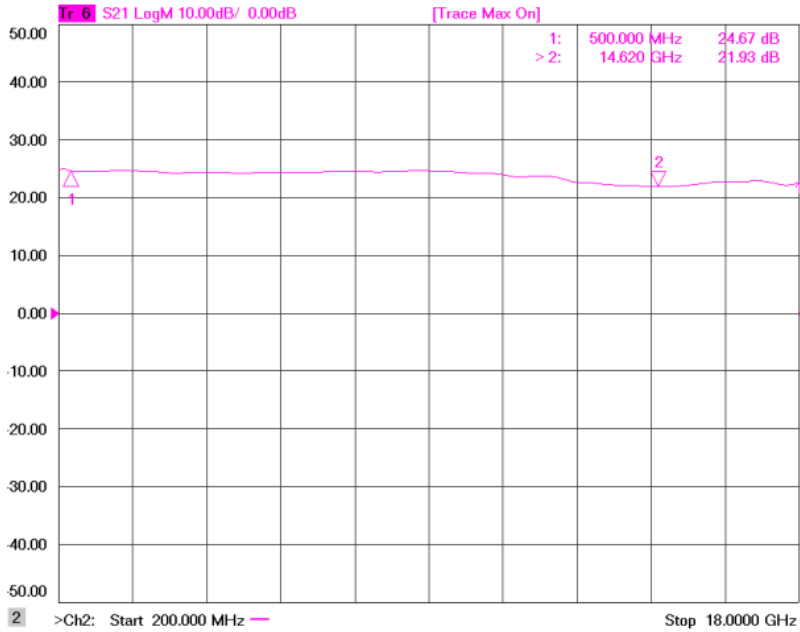


Figure 1: ERZ-LNA-0050-1800-23-8 Small Signal Gain at min att

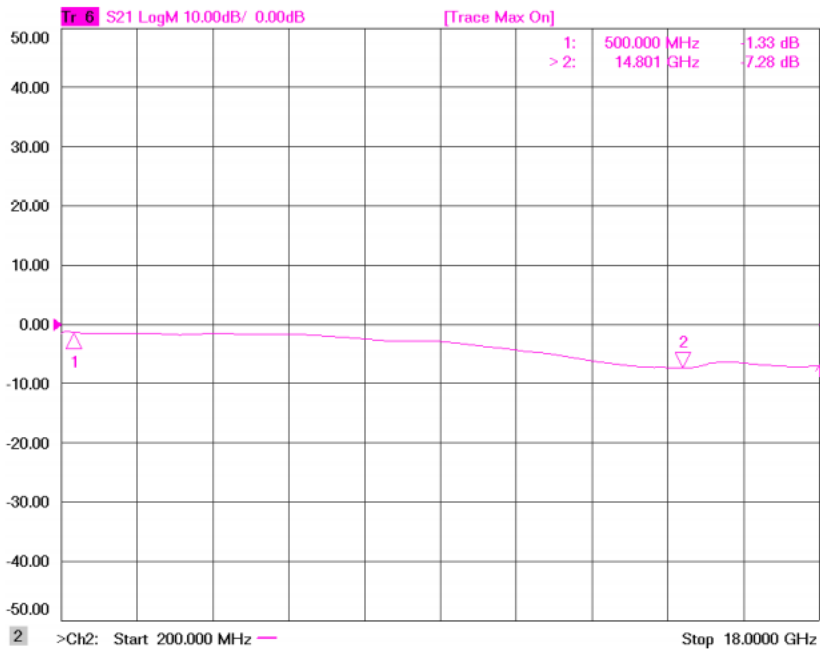


Figure 2: ERZ-LNA-0050-1800-23-8 Small Signal Gain at 25dB att

Output Power

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

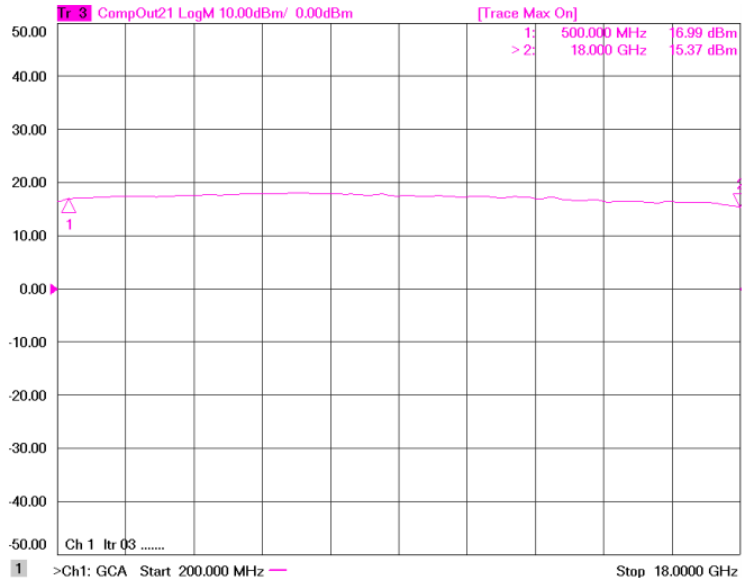


Figure 3: ERZ-LNA-0050-1800-23-8 P1dB

Noise Figure

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

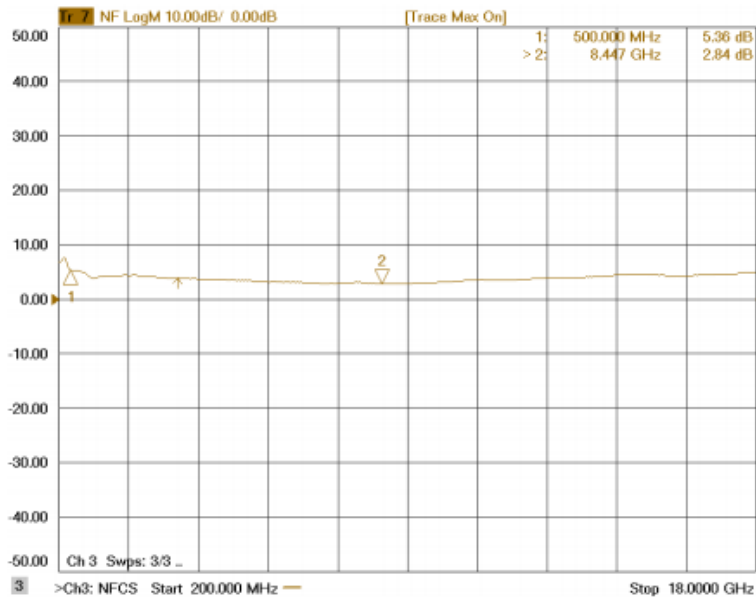


Figure 4: ERZ-LNA-0050-1800-23-8 Noise Figure at min att

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).

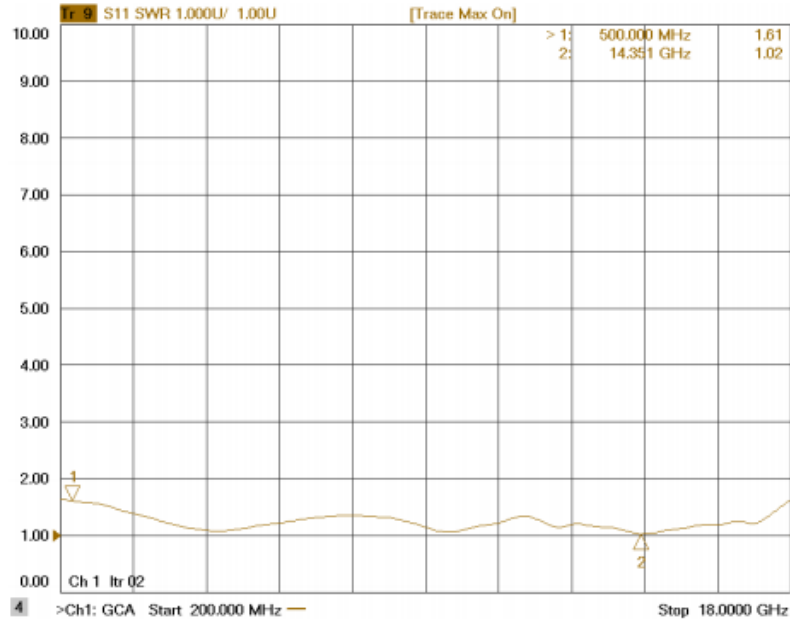


Figure 5: ERZ-LNA-0050-1800-23-8 Input Matching

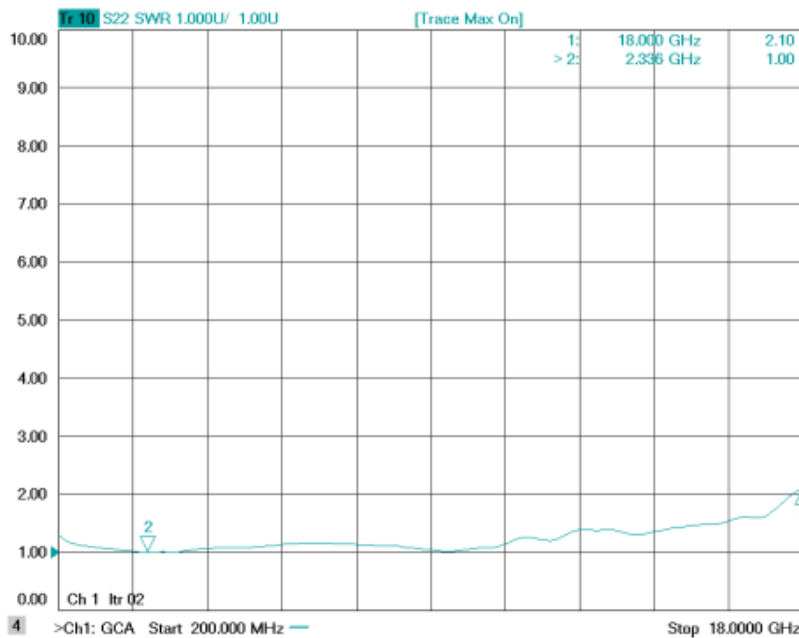
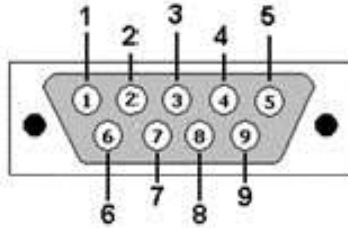


Figure 6: ERZ-LNA-0050-1800-23-8 Output Matching

Electrical Interfaces

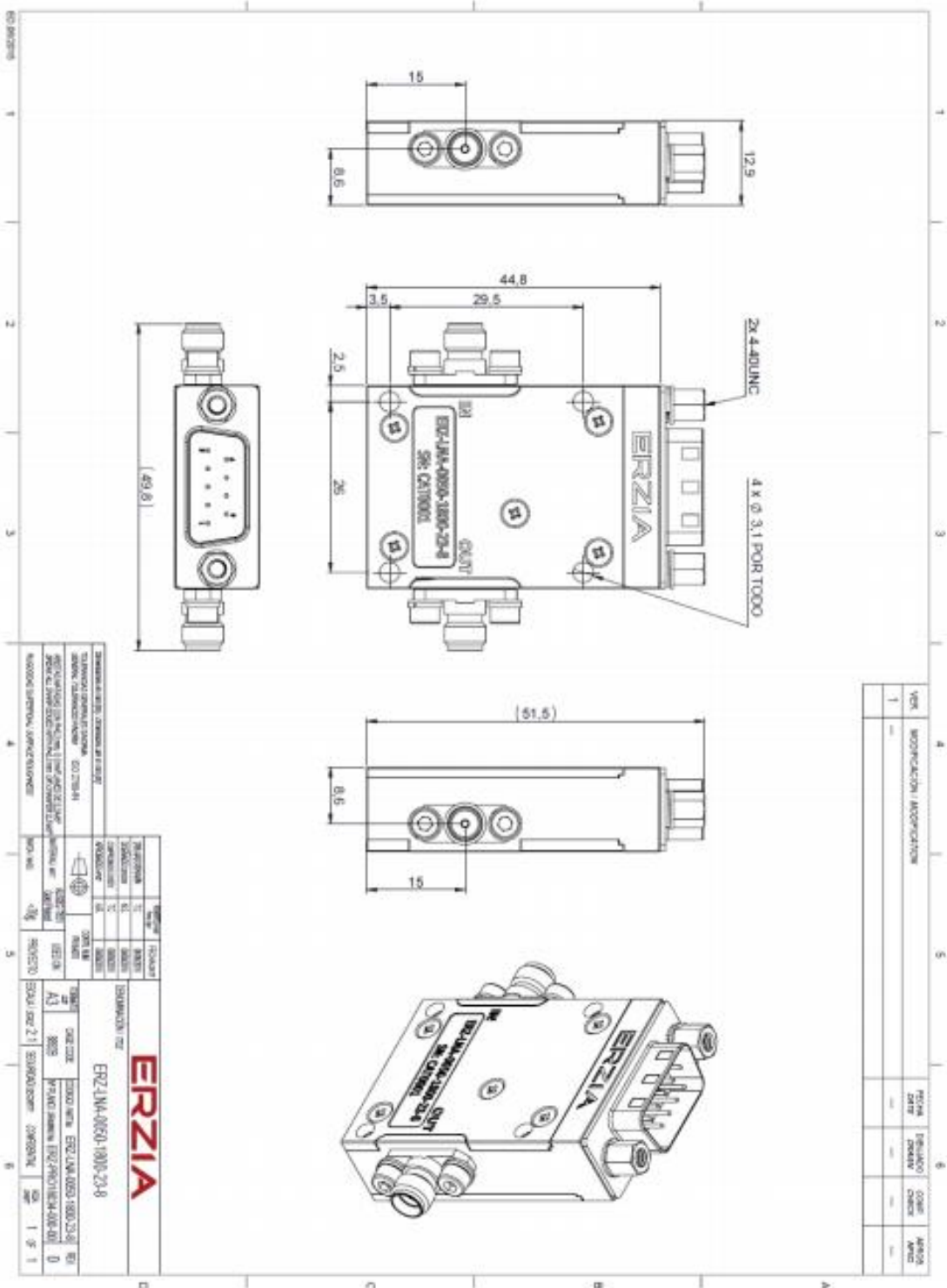
DB9 male connector



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

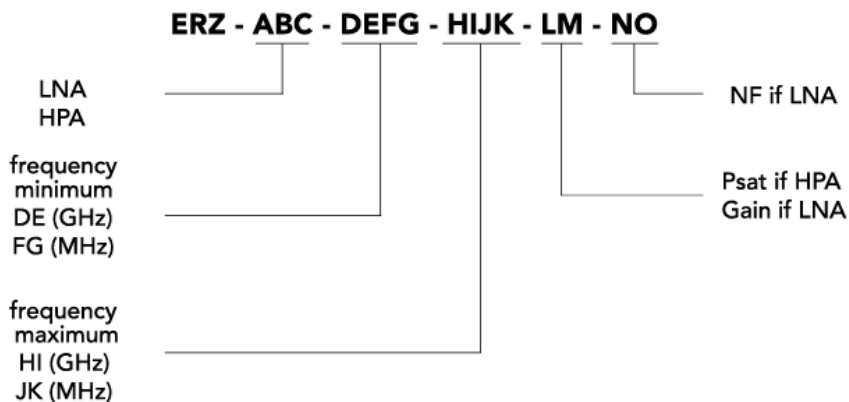
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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

20200611_rev1.0

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