



### Main Features:

- Frequency Range: 2 to 18 GHz.
- Typical values: P1dB 30 dBm, Gain 33 dB
- RF connectors (I/O): SMA (F)
- DB9 connector for DC connection, Enable and monitoring signals.
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-HPA-0200-1800-30-DB9

The ERZ-HPA-0200-1800-30-DB9 is a Wideband High Power Amplifier providing an output power higher than 30 dBm and a gain of 33 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)	29	31	35	dBm
Small Signal Gain	31	33	35	dB
Gain Flatness	-	±1	-	dB
Noise Figure	1	2.5	4	dB
VSWR input	1.0:1	1.3:1	2.0:1	-
VSWR output	1.0:1	1.5:1	2.1:1	-
DC Voltage	9	12	15	V
Power Consumption	-	13.5	-	W
RF Connectors	SMA Female IN/OUT			-

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

## 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).

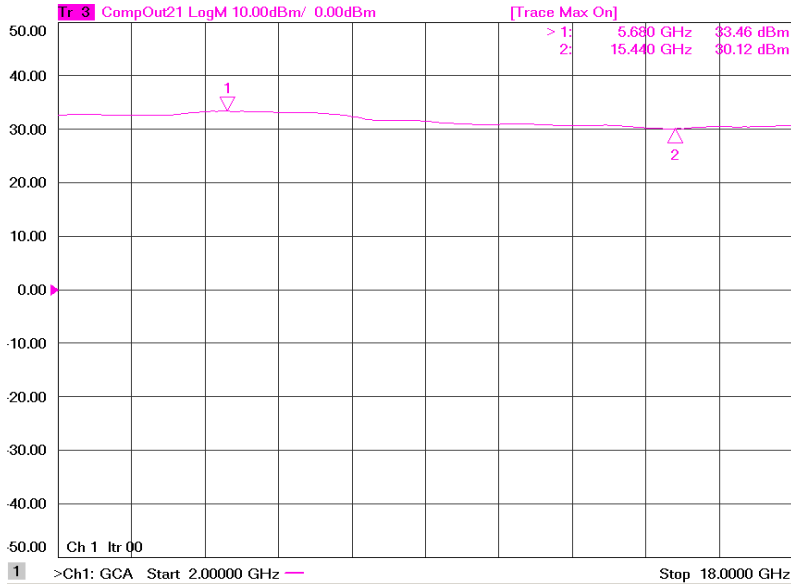


Figure 1: ERZ-HPA-0200-1800-30-DB9 P1dB

## Small Signal Gain

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

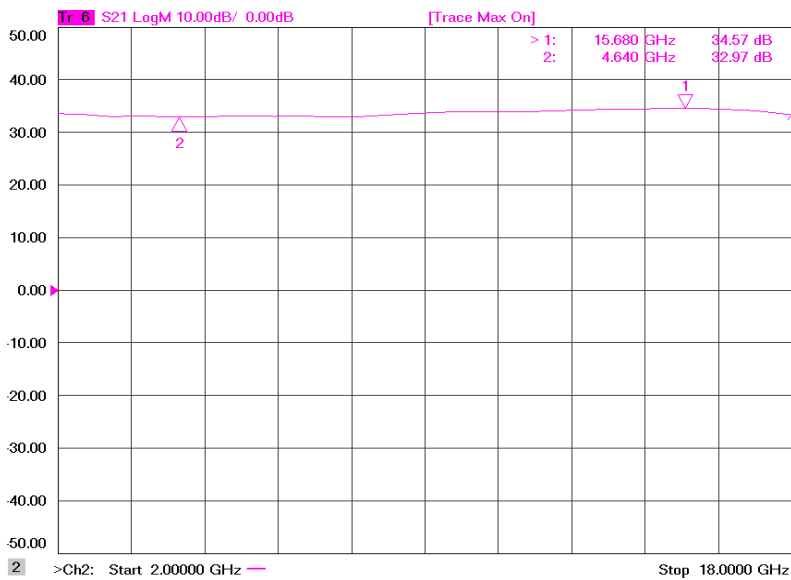


Figure 2: ERZ-HPA-0200-1800-30-DB9 Small Signal Gain

### 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.

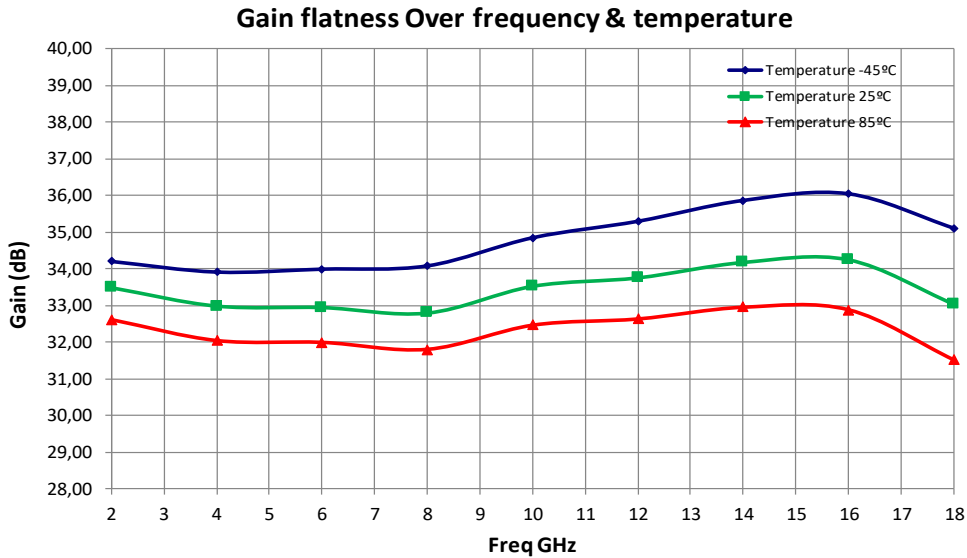


Figure 3: ERZ-HPA-0200-1800-30-DB9 Small Signal Gain Vs Temperature

### Noise Figure

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

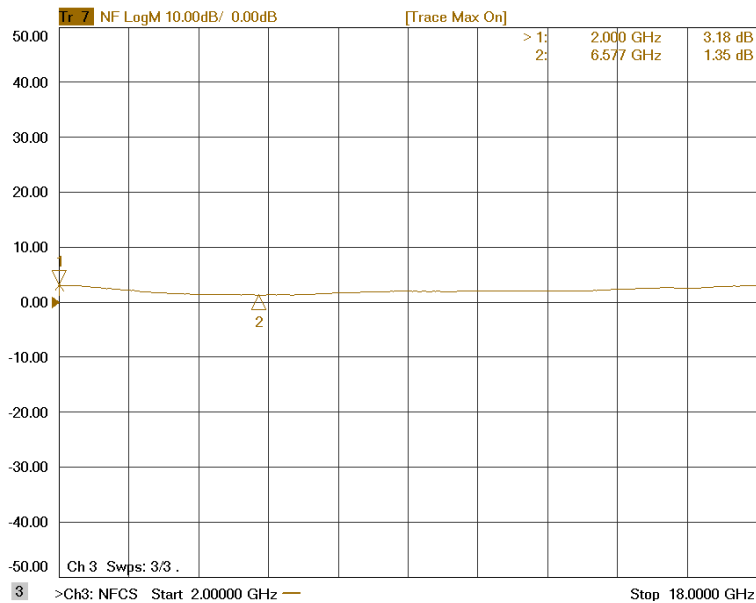


Figure 4: ERZ-HPA-0200-1800-30-DB9 Noise Figure

## 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).

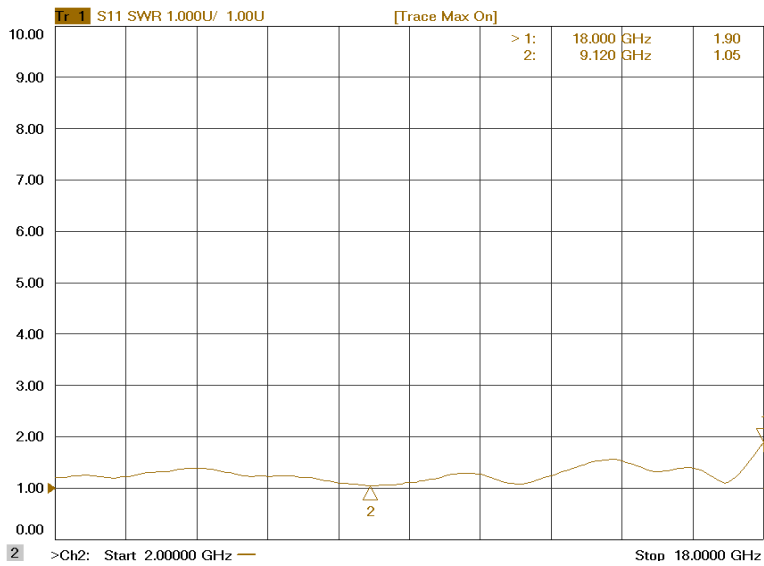


Figure 4: ERZ-HPA-0200-1800-30-DB9 Input Matching

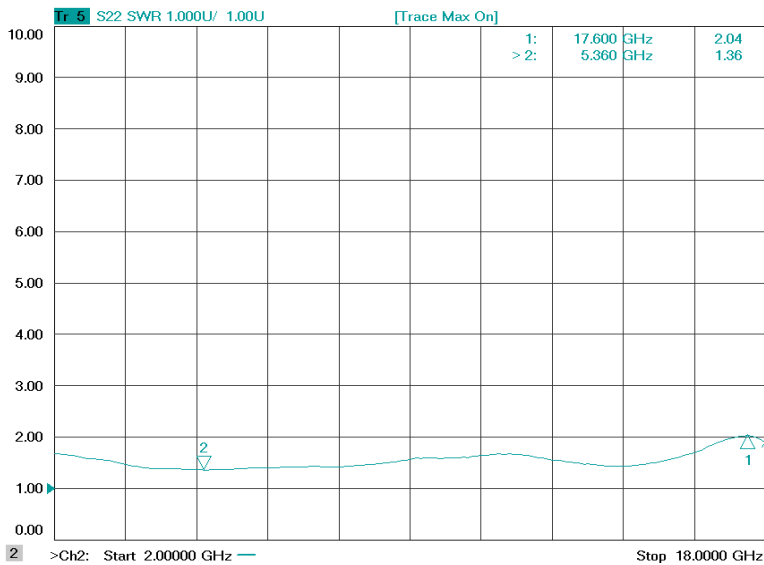
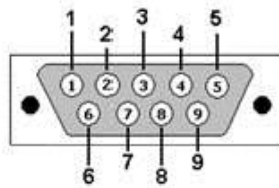


Figure 5: ERZ-HPA-0200-1800-30-DB9 Output Matching

### Electrical Interfaces

DB9 connector with the following functions:

- VCC: 12±3 VDC
- GND: Ground
- Temperature Sensor: 10 mV/°C
- Current Sensor: IDD 100mV/Ampere
- Enable: TTL levels 3.3V (High level) and GND (Low level). Switching speed below 1 us



*DB9 Male Front View.*

Pin No.	Description	Signal
1	VCC	+12 VDC Power source
2	VCC	+12 VDC Power source
3	GND	Ground
4	TA_SEN	Temperature sense
5	I_SEN	Current sense
6	GND	Ground
7	GND	Ground
8	EN	Active high enable
9	NC	Not Connected

### Absolute Maximum Ratings

Condition	Value
DC Voltage	+15 VDC
Maximum Input Power (CW)	+ 20 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)

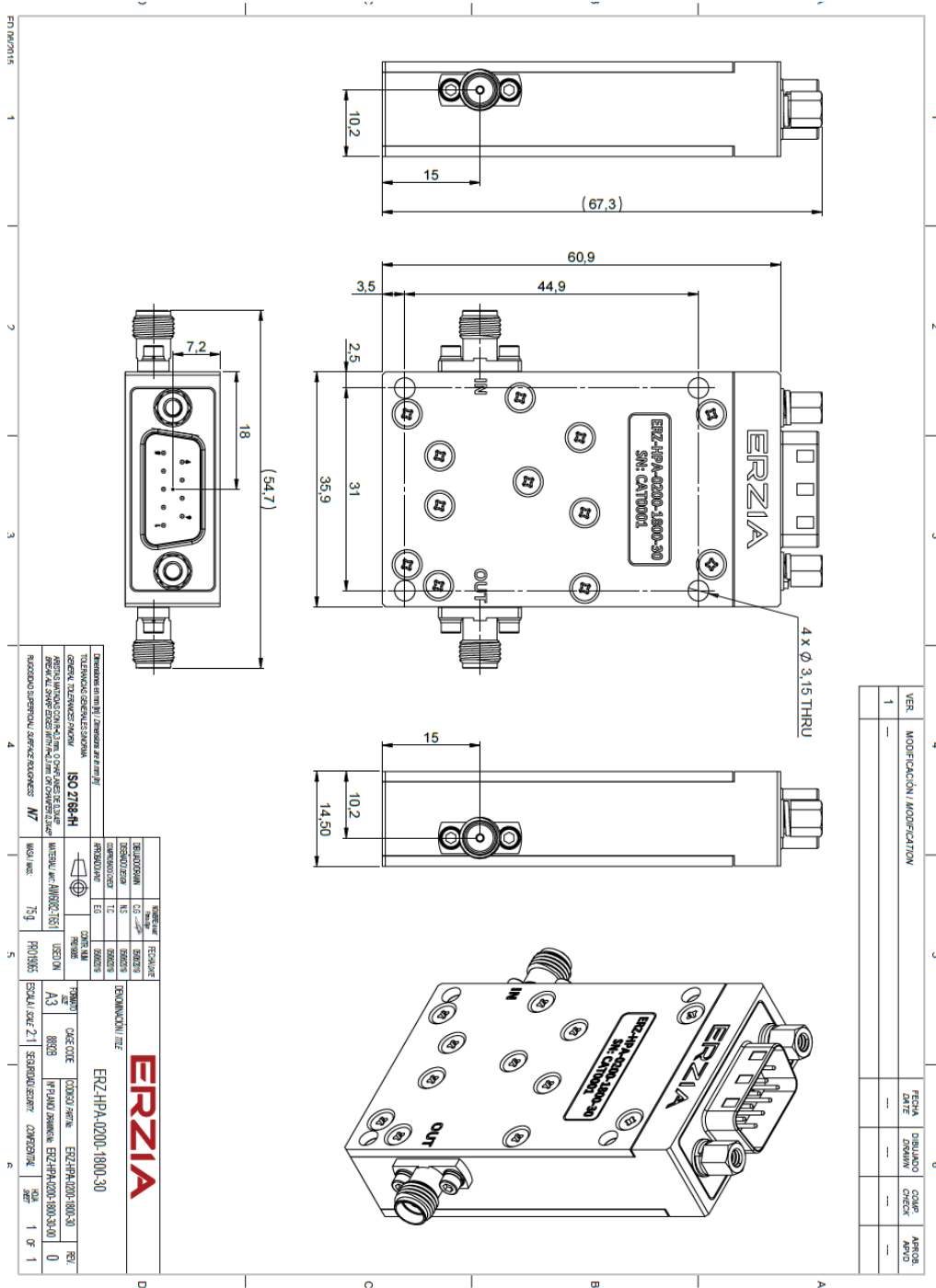
Operating Temperature:	-45 to +85 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

### 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.



### Mechanics and Housing



## 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

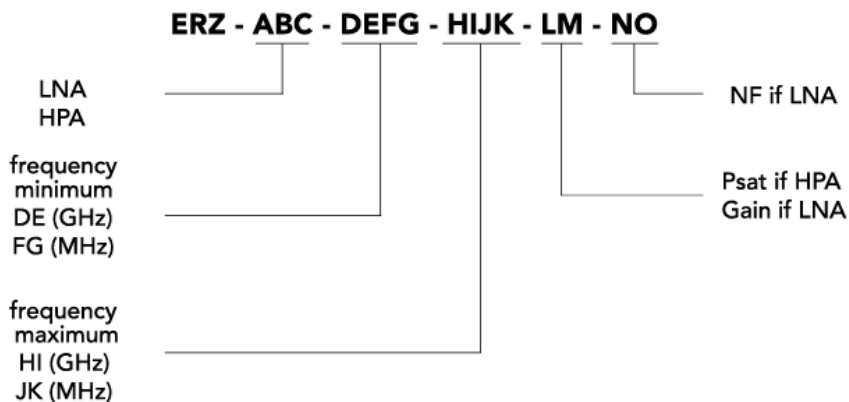
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

## 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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