



### Main Features:

- Frequency Range: 1 to 18 GHz.
- Typical values: Psat 36 dBm, Gain 36 dB
- RF connectors (I/O): SMA Female
- DB9 connector for DC & Control connection
- Several mounting options
- Compact aluminum housing
- Hi-reliability and dedicated screening/  
environmental tests available under request

### ERZ-HPA-0100-1800-37

The ERZ-HPA-0100-1800-37 is a wideband high power amplifier providing an output power of 36 dBm and a gain of 36 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	1	-	18	GHz
Output Power @Psat	34	36	38.5	dBm
Small Signal Gain	32	-	38	dB
Noise Figure (dB)	-	7.5	9.5	dB
Output VSWR	-	1.5:1	3.0:1	-
Input VSWR	-	1.5:1	2.0:1	-
Power Consumption (W)	-	-	40	W
DC Voltage (V)	18	24	30	V
RF Connectors	SMA Female IN/OUT			-

Specifications at a case temperature of 25°C

## Saturated output power

Figure 1 shows output power (Psat) measurement as a function of frequency.

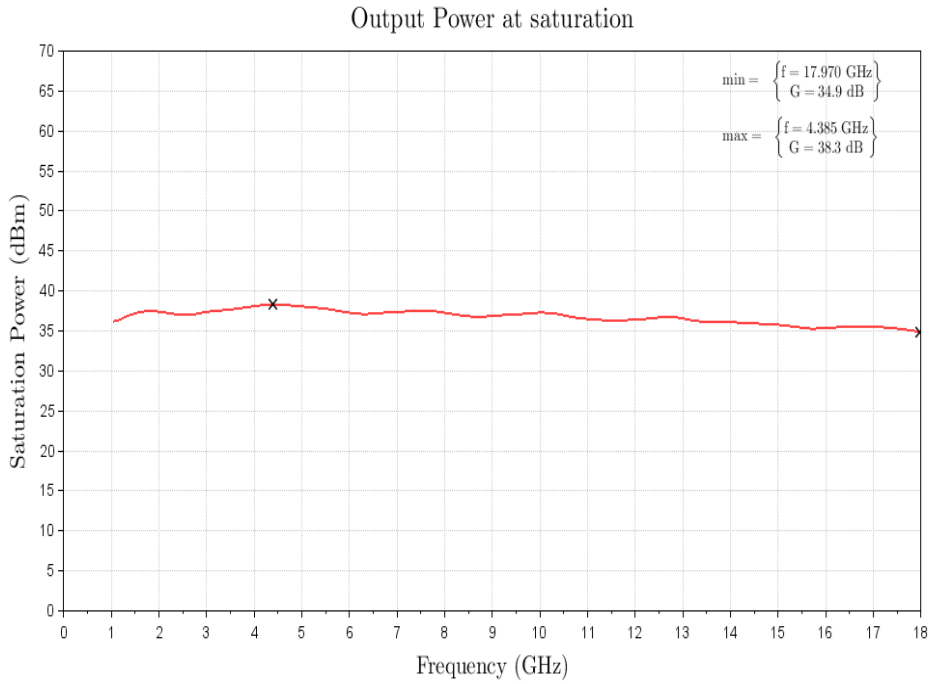


Figure 1: ERZ-HPA-0100-1800-37 Psat

## Small Signal Gain

Figure 2 shows the small signal gain measurement as a function of frequency.

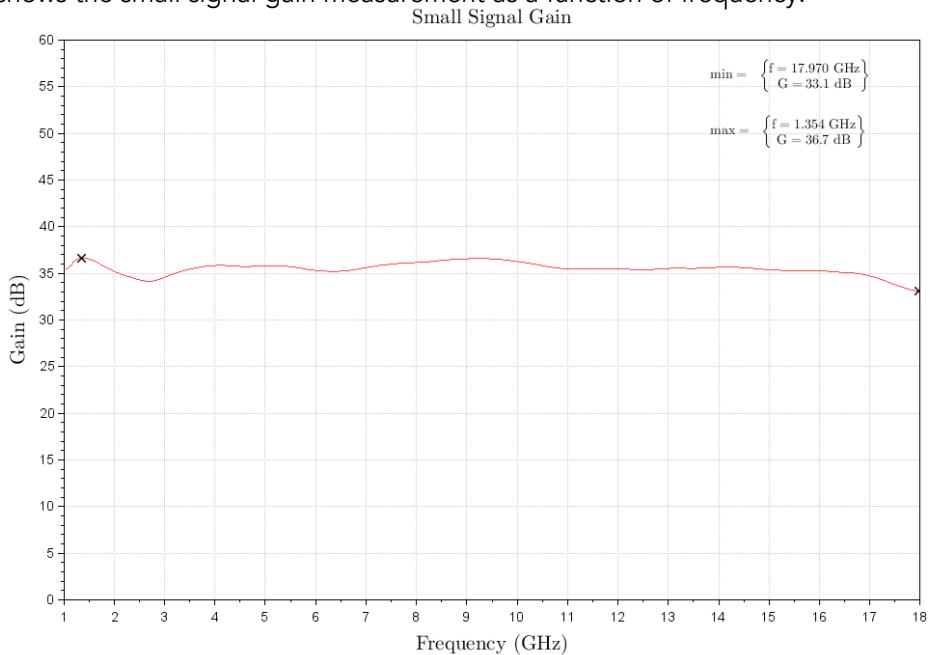
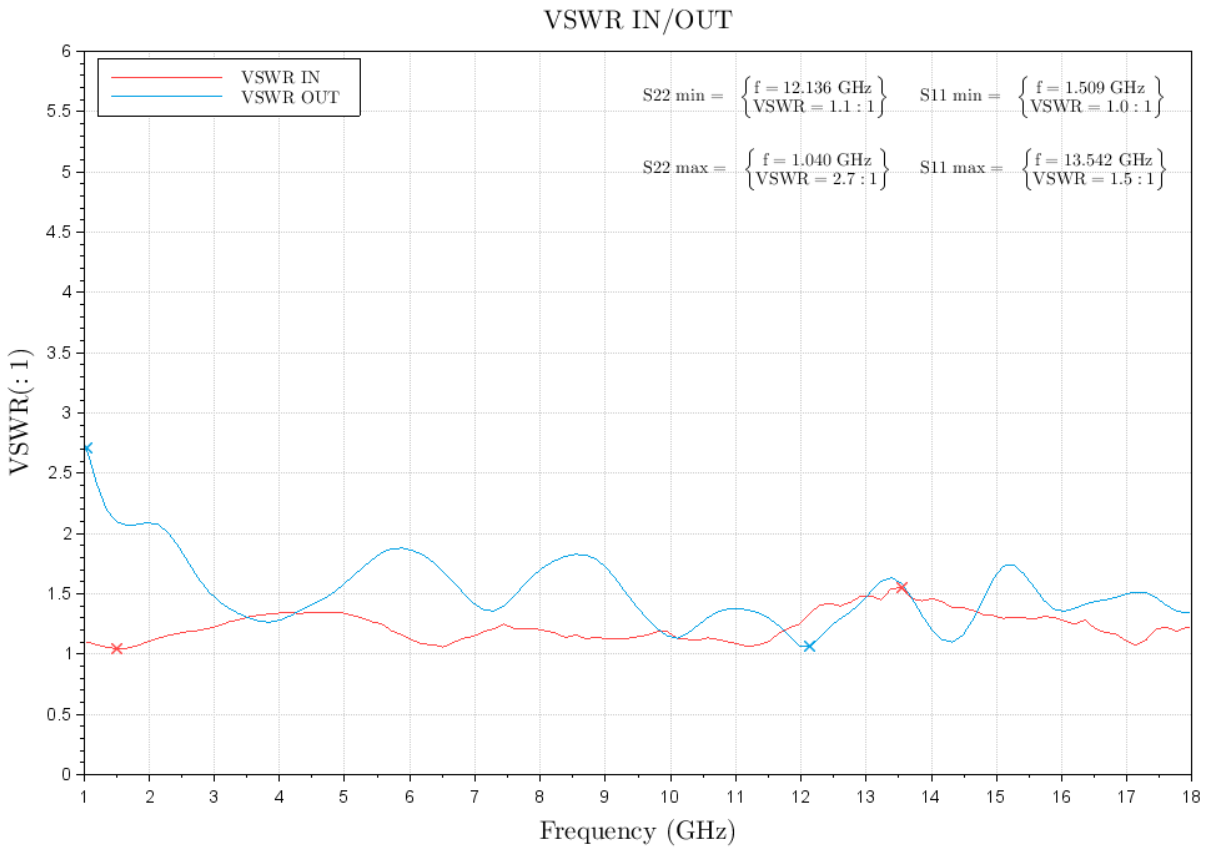


Figure 2: ERZ-HPA-0100-1800-37 Small Signal Gain

### Input and Output Matching

Figure 3 shows input and output reflection coefficient as a function of frequency at room temperature (25°C).



### Absolute Maximum Ratings

Condition	Value
DC Voltage	32 VDC
Maximum Input Power (CW)	+15 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)	-35°C, 25°C, 70°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)	-35°C to 70°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.



## DC & Control Interface

Power supply characteristics

- Input Voltage: 28 ±4 VDC
- Input Current : 1.6 A

Control characteristics

- TTL command (ON/OFF function).
- Temperature & Current monitoring.

Table below shows D-sub 9 connector (Male) pinout:

PIN	LABEL	SIGNAL	DESCRIPTION
1	VCC	+28V Power Source	Power Supply
2	VCC	+28V Power Source	Power Supply
3	GND	Ground	Ground
4	EN	LVTTTL Enable	OFF (0V to 0.8V); ON (2V to 5.5V);
5	TEMP	Temperature Monitor	$V_o = -11.69 \text{ mV}/^\circ\text{C} \times T + 1.8663 \text{ V}$
6	PGND	Power Ground	Power Ground
7	PGND	Power Ground	Power Ground
8	GND	Ground	Ground
9	I_SEN	Current Sense	$V_o = 0.1\text{V/A}$

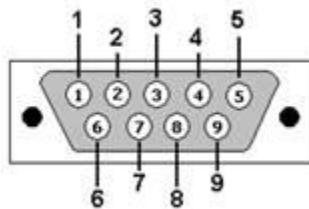
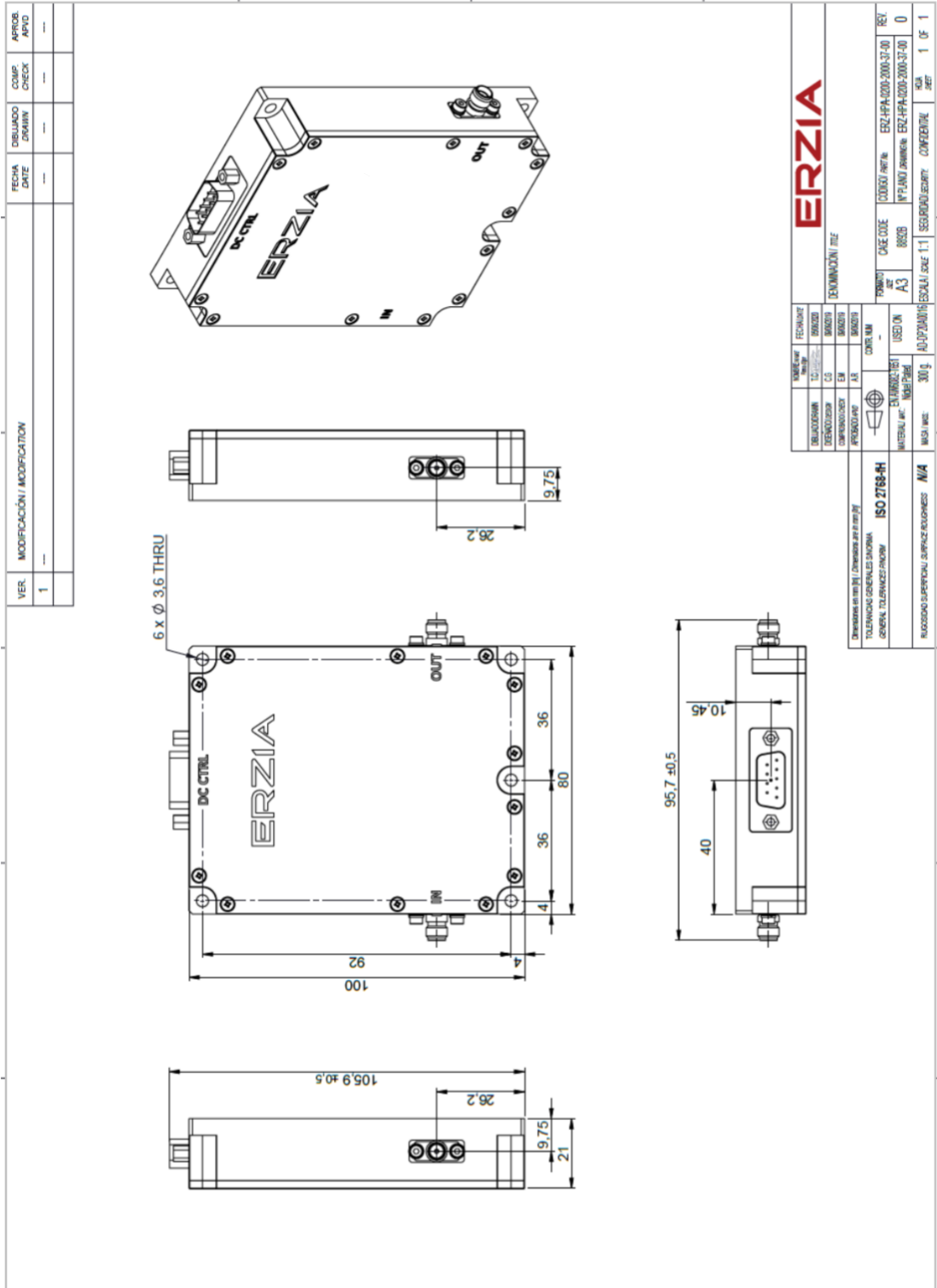


Figure 5: D-sub 9 Connector (Front view)

### Mechanics and Housing



ERZIA	
DENOMINACIÓN / ITEM	
FECHA / DATE	REV.
DIBUJADO / DRAWING	APROB. / APPROV.
REVISADO / REVISION	USADO EN / USED ON
COMPROMISADO / COMMITTED	CONTROL N.º / CONTROL N.º
APROBADO / APPROVED	ESTADO / STATUS
USADO EN / USED ON	ESCALA / SCALE
CONTROL N.º / CONTROL N.º	SEGURIDAD / SAFETY
ESTADO / STATUS	COMPONENTE / COMPONENT
USADO EN / USED ON	VER. / VER.
ESCALA / SCALE	1 OF 1
SEGURIDAD / SAFETY	
COMPONENTE / COMPONENT	
VER. / VER.	
1 OF 1	

Dimensiones en mm (in). Dimensiones sin fracción (mm)  
 TOLERANCIAS GENERALES ISO 2768-MS  
 GENERAL TOLERANCES ISO 2768-MS  
 MEDIDA: mm. MED: mm.  
 REDONDEO SUPERIOR / SURFACE ROUNDES: N/A

## 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

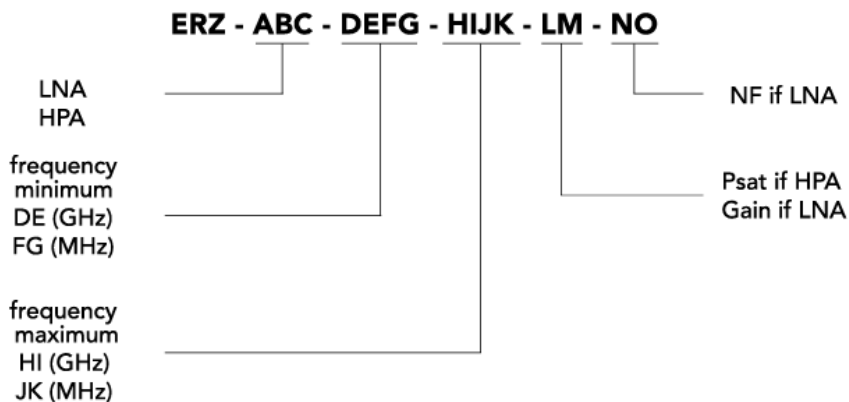
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

## 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

20200923\_rev1.1

Copyright © 2020 ERZIA Technologies. All rights reserved. This information is commercial and indicative, subject to change without notice

Tel: +34 942 29 13 42

[sales@erzia.com](mailto:sales@erzia.com)

[www.erzia.com](http://www.erzia.com)