



### Main Features:

- Frequency Range: 5.2 to 5.4 GHz.
- Typical values: P1dB 46 dBm, Gain 52 dB
- RF connectors (I/O): SMA Female
- Temperature monitoring
- DC power source control
- Several mounting options
- Nickel coating compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-HPA-0520-0540-44

The ERZ-HPA-0520-0540-44 is a High Power Amplifier providing an output power of 46 dBm and a gain of 52 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	5.2	-	5.4	GHz
Output Power (P1dB)	45	46	47	dBm
OIP3	54	56	58	dBm
Small Signal Gain	50	52	55	dB
Gain Flatness	-	-	±1.5	dB
Noise Figure	-	-	-	dB
VSWR input	-	1.8:1	2.2:1	-
VSWR output	-	1.1:1	1.5:1	-
DC Voltage	20	24	28	V
Power Consumption @ P1dB	-	-	165	W
RF Connectors	SMA Female			-

Specifications at a case temperature of 25°C at 24 V

### Output Power at 1 dB Compression

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

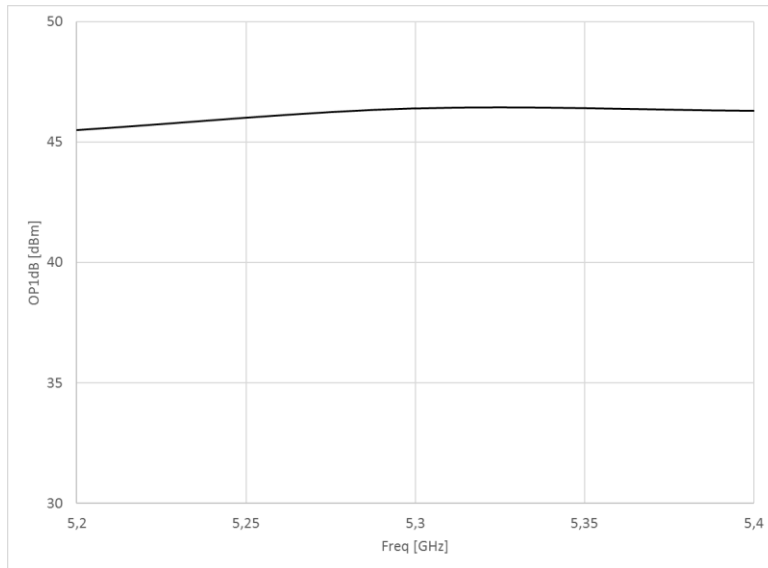


Figure 1: ERZ-HPA-0520-0540-44 P1dB

Figure 2, shows output power at 1 dB compression measurement as a function of input power at room temperature (25°C).

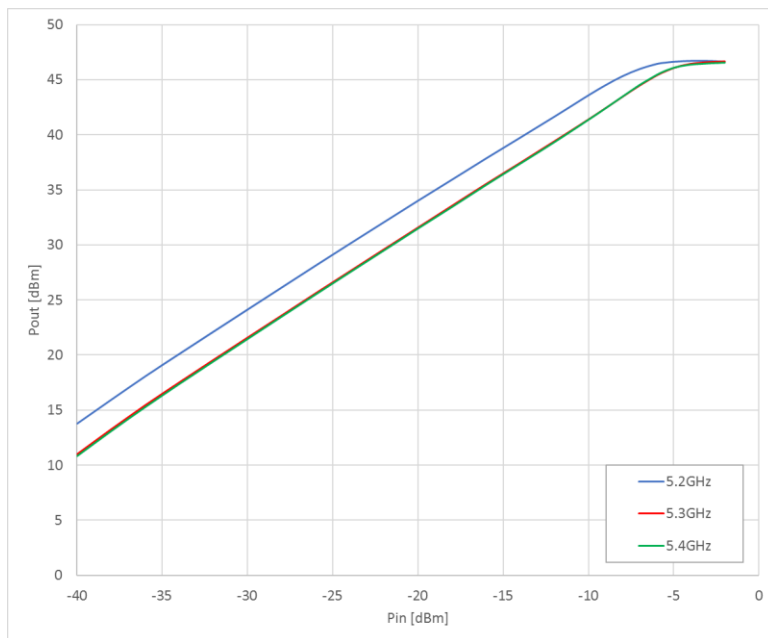


Figure 2: ERZ-HPA-0520-0540-44 Pout Vs Pin

### Small Signal Gain

Figure 3 shows small signal gain measurement as a function of frequency at room temperature (25°C).

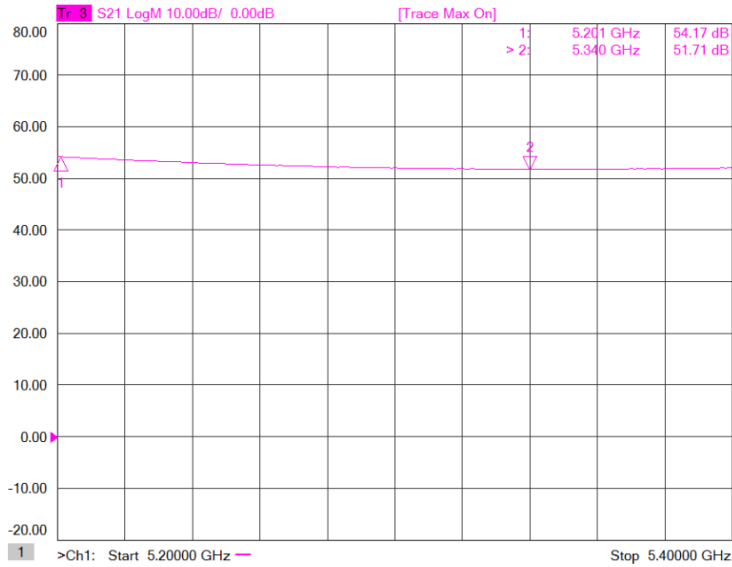


Figure 3: ERZ-HPA-0520-0540-44 Small Signal Gain

### Input and Output Matching

Figure 4 and Figure 5 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

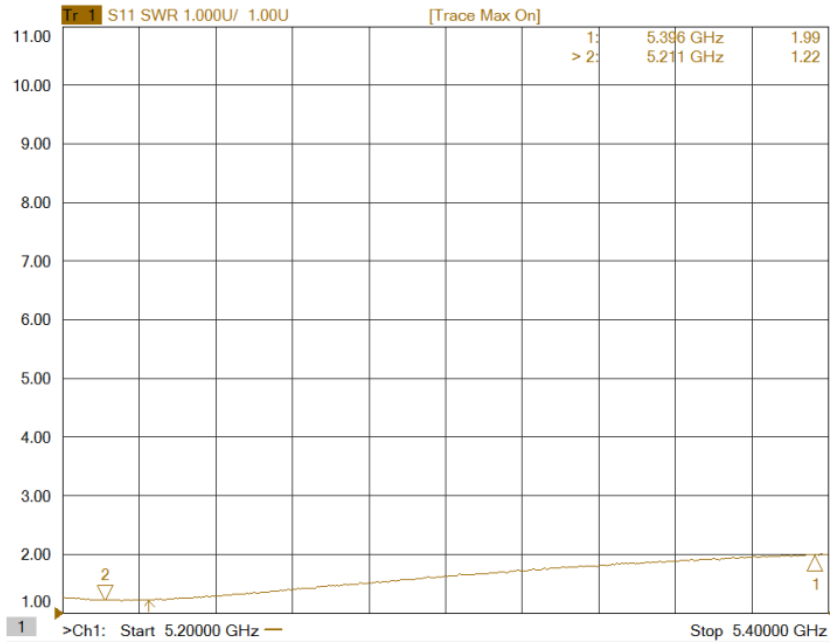


Figure 4: ERZ-HPA-0520-0540-44 Input Matching

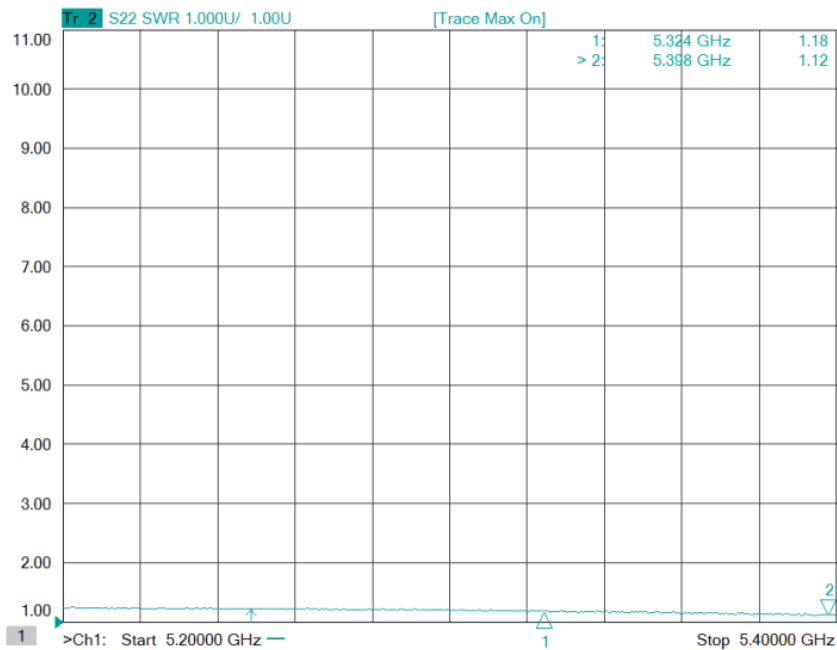
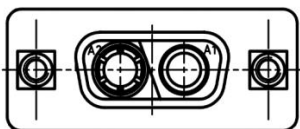


Figure 5: ERZ-HPA-0520-0540-44 Output Matching

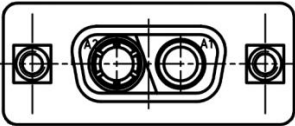


## External Electrical Interfaces

Tables 1 and 2 show power supply and control connectors pinout.

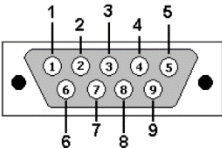
Power supply: D-sub 2W2C Female

Control: D-sub 9 Female



PIN	FUNCTION	IN/OUT	DESCRIPTION
A1	VIN	IN	+24 VDC
A2	GND	-	Ground

Table 1: ERZ-HPA-0520-0540-44 Power supply connector pinout



PIN	FUNCTION	IN/OUT	DESCRIPTION
1	EXT_AMP_EN	IN	Switch ON/OFF HPA
2	GND	-	Ground
3	TEMP_MON	OUT	Analog temperature monitoring
4	GND	-	Ground
5	TEMP_CNTRL_SD	IN	Enable/ Disable temperature protection auto switch off.
6	PWG_FB	OUT	Power good feedback
7	GND	-	Ground
8	TEMP_ALM	OUT	Temperature alarm
9	GND	-	Ground

Table 2: ERZ-HPA-0520-0540-44 control connector pinout

### Absolute Maximum Ratings

Condition	Value
DC Voltage	+28 VDC
Maximum Input Power (CW)	5 dBm
Operation temperature (at case)	-40 to 70 °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)

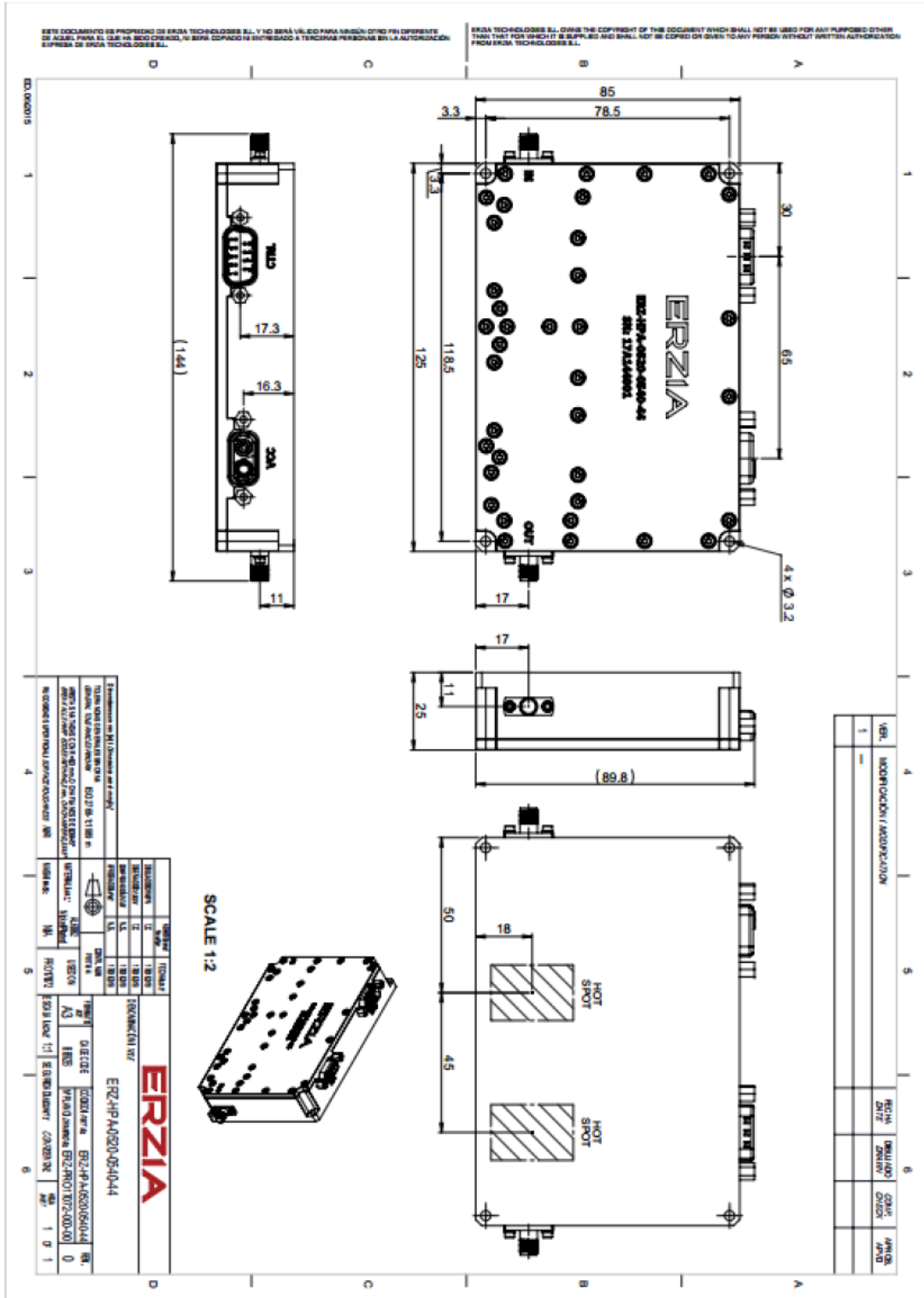
Operating Temperature:	-40 to +70 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

### 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

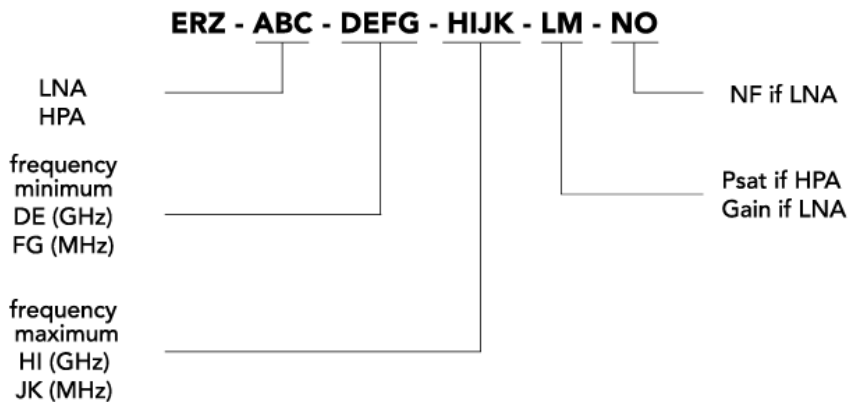
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### 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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