



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).

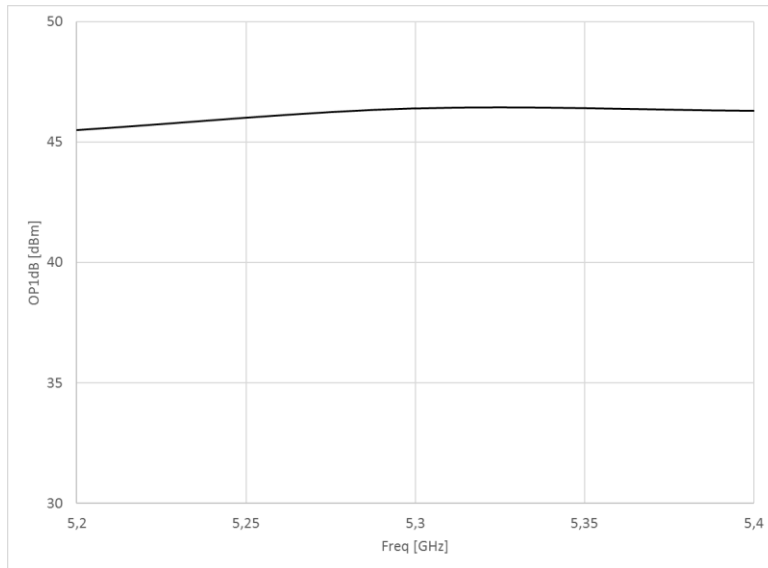


Figure 1: ERZ-HPA-0520-0540-44 P1dB

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

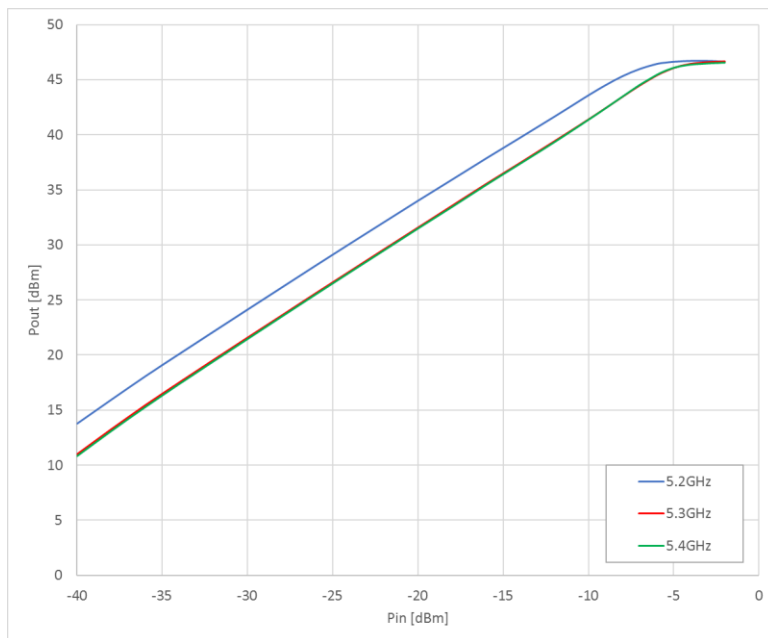


Figure 2: ERZ-HPA-0520-0540-44 Pout Vs Pin

Small Signal Gain

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

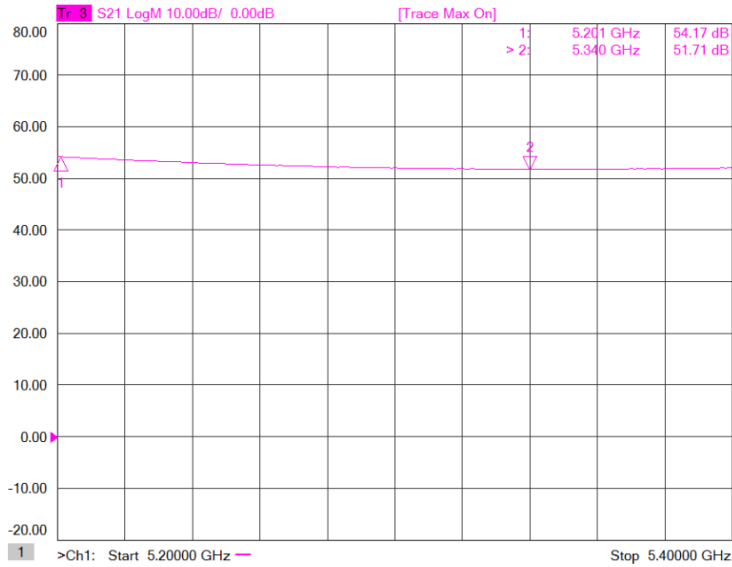


Figure 3: ERZ-HPA-0520-0540-44 Small Signal Gain

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).

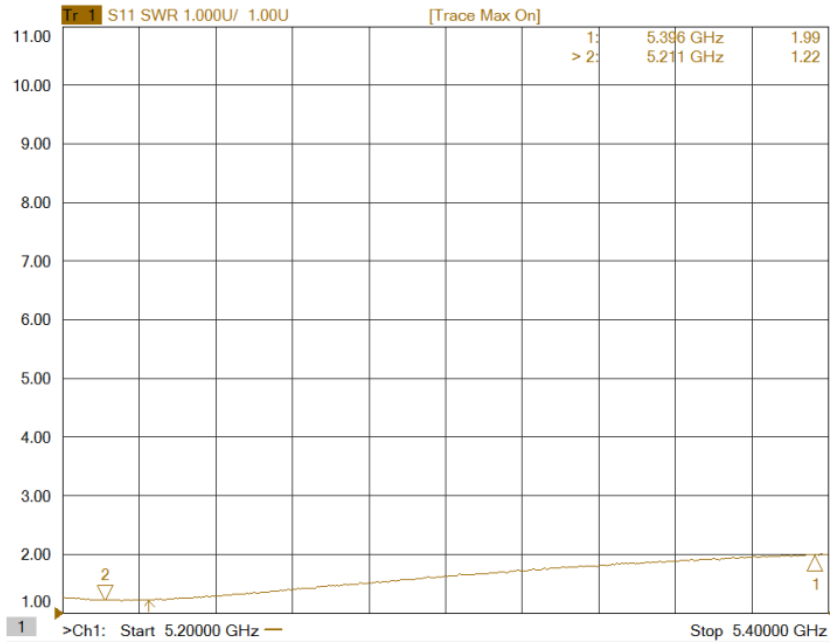


Figure 4: ERZ-HPA-0520-0540-44 Input Matching

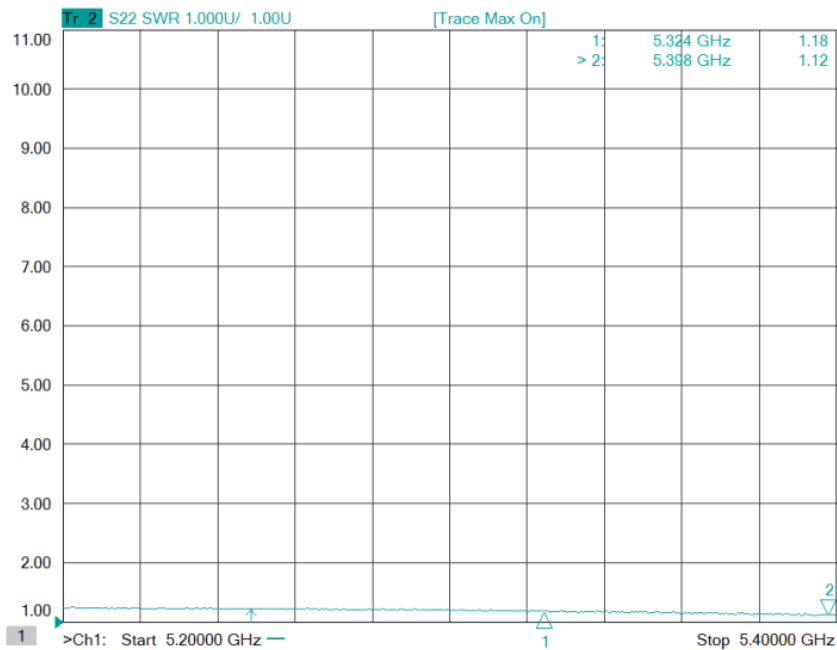


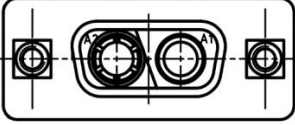
Figure 5: ERZ-HPA-0520-0540-44 Output Matching

External Electrical Interfaces

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

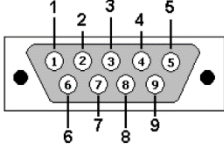
Power supply: D-sub 2W2C Female

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)

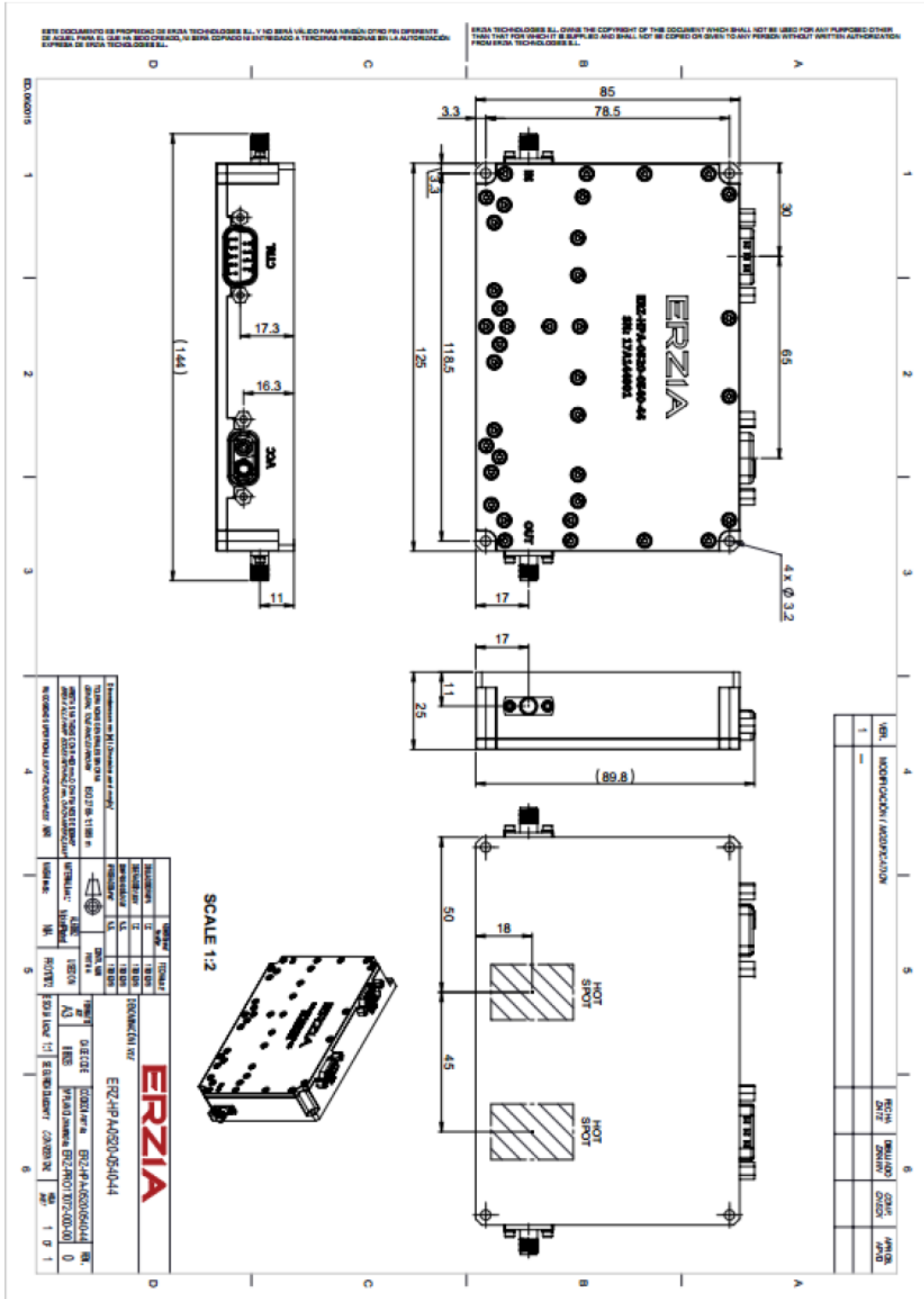
Operating Temperature:	-40 to +70 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

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

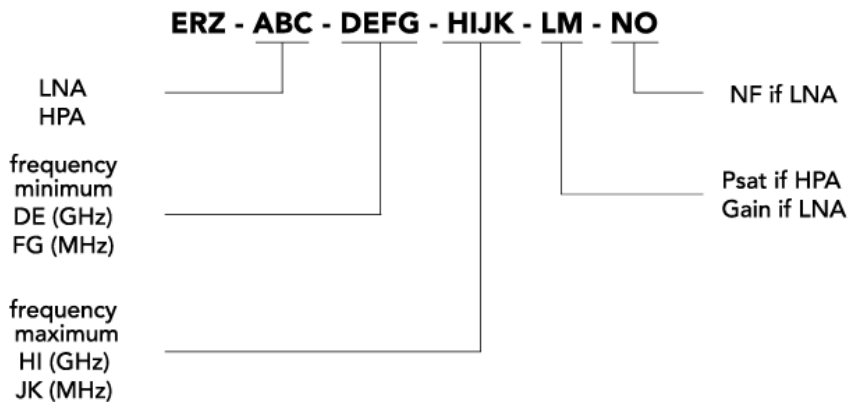
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

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

20180222_rev1.1

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