



### Main Features:

- Frequency Range: 4.4 to 5.0 GHz.
- Typical values: Psat 41 dBm, Gain 38 dB
- RF connectors (I/O): SMA Female
- Solder filtered pins for DC connection
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/ environmental tests available under request

### ERZ-HPA-0440-0500-40

The ERZ-HPA-0440-0500-40 is a High Power Amplifier providing an output power of 41 dBm and a gain of 37 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	4.4	-	5.0	GHz
Output Power (Psat)	40	41	43	dBm
Small Signal Gain	35	37	41	dB
Gain Flatness	-	±2	-	dB
Noise Figure	-	-	-	dB
VSWR input	1.1:1	1.2:1	1.5:1	-
VSWR output	1.1:1	1.2:1	1.5:1	-
DC Voltage	14	15	16	V
Power Consumption	-	90	-	W
Connectors	SMA Female IN/OUT			-

Specifications at 15VDC at case temperature of 25°C

### Output Saturated Power

Figure 1 shows the saturated output power measured as a function of frequency at room temperature (25°C).

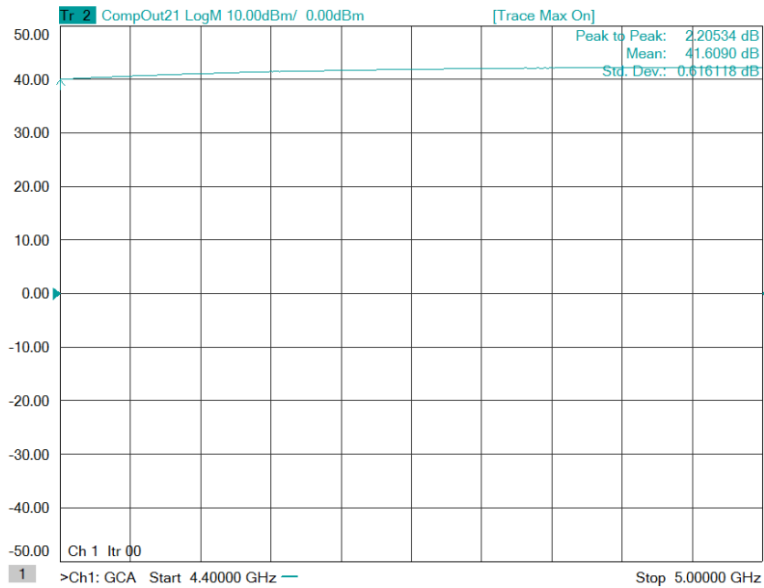


Figure 1: ERZ-HPA-0440-0500-40 Psat

### Small Signal Gain

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

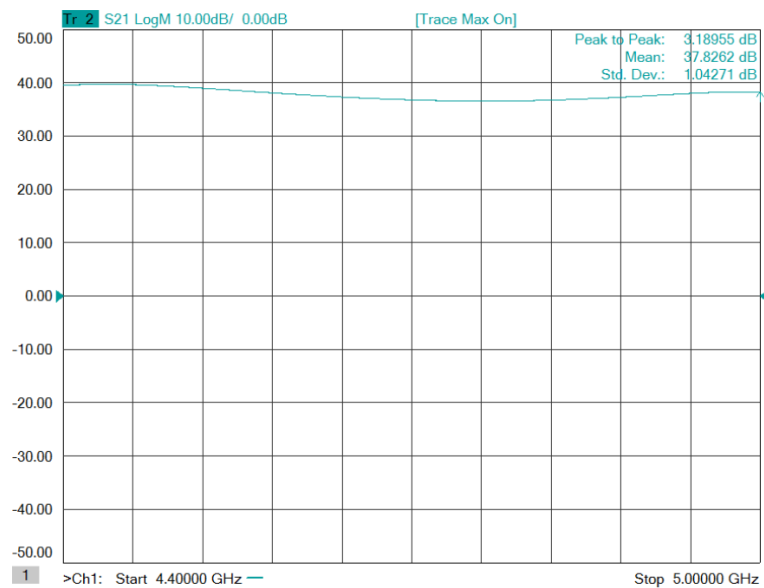


Figure 2: ERZ-HPA-0440-0500-40 Small Signal Gain

### Input and Output Matching

Figure 3 and Figure 4 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

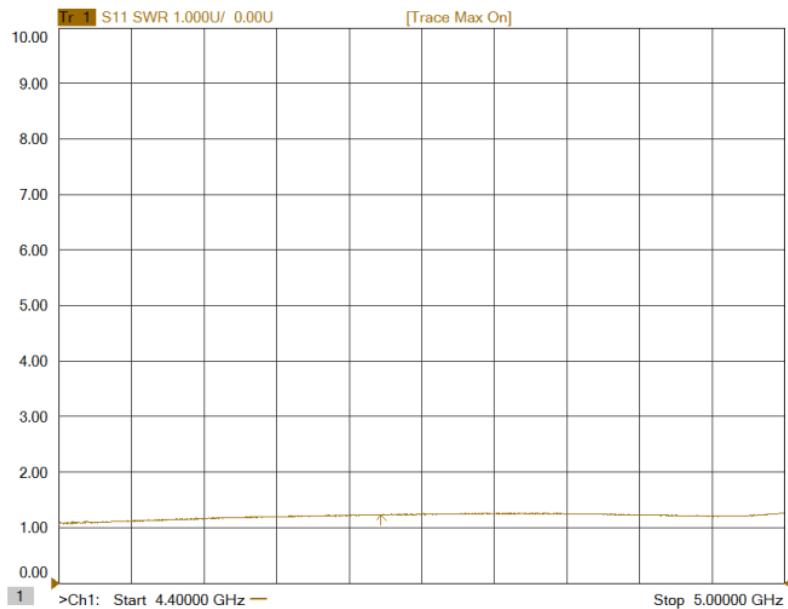


Figure 3: ERZ-HPA-0440-0500-40 Input Matching

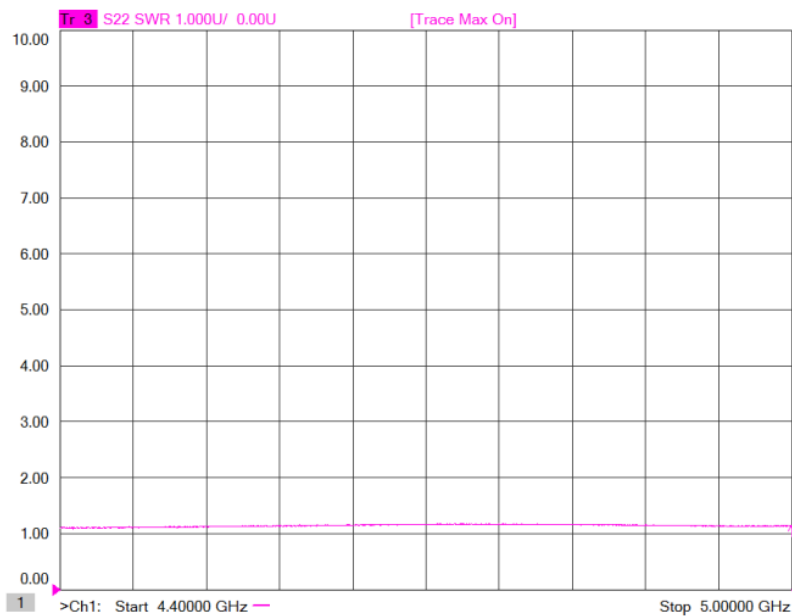


Figure 4: ERZ-HPA-0440-0500-40 Output Matching

### Absolute Maximum Ratings

Condition	Value
DC Voltage	+16 VDC
Maximum Input Power (CW)	10 dBm
Operation temperature (at case)	-35 to 70 °C
Storage temperature	-45 to 85 °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)	-35°C to 70°C

### Environmental Specifications (By Design)

Operating Temperature:	-35 to +70 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-45 to 85 °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

The drawing shows the mechanical specifications of the amplifier housing. Key dimensions include a length of 115 mm, a width of 70 mm, and a height of 17.5 mm. The front panel features an INPUT and OUTPUT connector. The top surface has a central VCC1 / GND terminal and a circular hole with a diameter of 2.900 mm. The bottom view shows a 3x3 grid of mounting holes. A detailed technical drawing of the front panel shows the VCC1 / GND terminal and the input/output connectors.

REV.	DATE	DESCRIPTION
01	2014-01-15	INITIAL DESIGN
02	2014-02-10	REVISION
03	2014-03-05	REVISION
04	2014-04-01	REVISION
05	2014-05-01	REVISION
06	2014-06-01	REVISION
07	2014-07-01	REVISION
08	2014-08-01	REVISION
09	2014-09-01	REVISION
10	2014-10-01	REVISION
11	2014-11-01	REVISION
12	2014-12-01	REVISION

ERZIA

REV. 1.1

A3

2:1

SCALE: 1:1

DATE: 2014-12-01

DESIGNER: [REDACTED]

CHECKER: [REDACTED]

APPROVED: [REDACTED]

PROJECT: [REDACTED]

DESCRIPTION: [REDACTED]

REVISIONS:

1. [REDACTED]

2. [REDACTED]

3. [REDACTED]

4. [REDACTED]

5. [REDACTED]

6. [REDACTED]

7. [REDACTED]

8. [REDACTED]

9. [REDACTED]

10. [REDACTED]

11. [REDACTED]

12. [REDACTED]

### 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

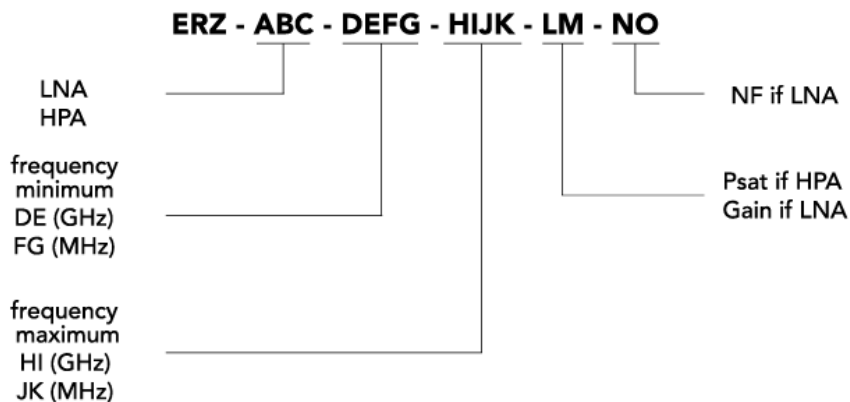
Most of ERZIA's products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, military or specific hi-reliability usage.

### 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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