



Main Features:

- Frequency Range: 26 to 40 GHz.
- Typical values: Psat 33 dBm, Gain 35 dB
- RF connectors (I/O): 2.92mm Female
- D-sub 9 connector for DC & Control
- Several mounting options
- Gold plated compact aluminum housing
- Hi-reliability and dedicated screening/
environmental tests available under request

ERZ-HPA-2600-4000-33-A

The ERZ-HPA-2600-4000-33-A is a Ka Band High Power Amplifier providing an output power of 33 dBm and gain of 35 dB. The compact size and modularity makes it ideal for a wide range of applications.

Typical applications:

- Industrial / Laboratory
- Satcom / Telecom
- Space / Aerospace

Performance

Parameter	Value			Units
	Min	Typ	Max	
Frequency	26	-	40	GHz
Output Power (Psat)	31	33	36	dBm
Output Power (P1dB)	27	32	35	dBm
OIP3	33	37	40	dBm
Small Signal Gain	29	35	41	dB
Gain Flatness (over frequency and temperature)	-	-	±5	dB
Noise Figure	6	7	8.5	dB
VSWR input	1.0:1	1.8:1	2.5:1	-
VSWR output	1.0:1	1.8:1	2.1:1	-
DC Voltage	9	12	15	V
Power Consumption @Psat	-	30	-	W
RF Connectors	2.92mm Female IN/OUT			-

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

Saturated Output power

Figure 1 shows output power (Psat) measurement as a function of frequency at room temperature (25°C).

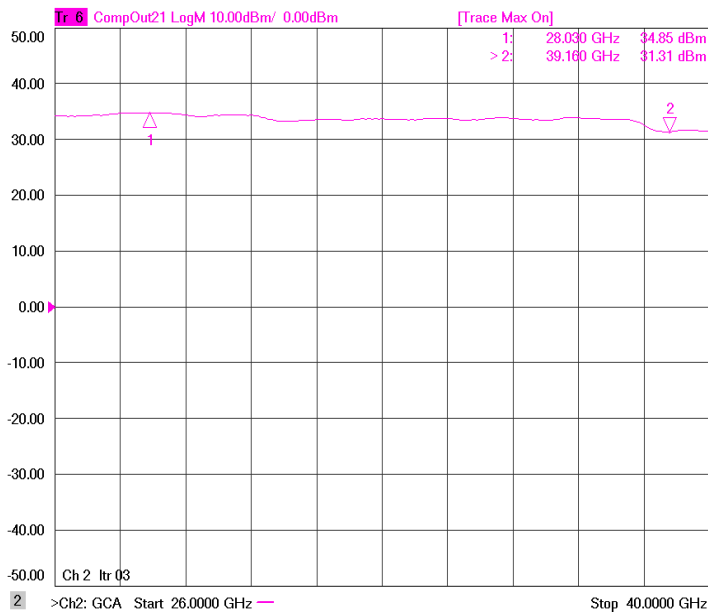


Figure 1: ERZ-HPA-2600-4000-33-A Psat

Output Power at 1 dB Compression (P1dB)

Figure 2 shows output power (P1dB) measurement as a function of frequency at room temperature (25°C).

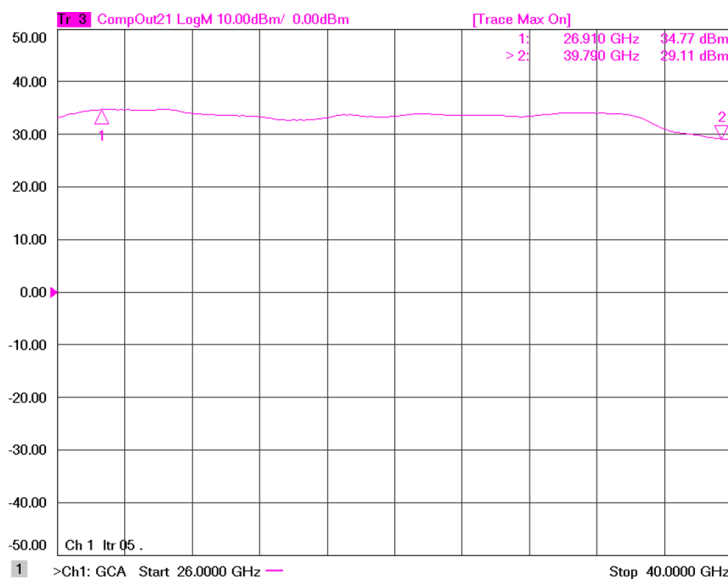


Figure 2: ERZ-HPA-2600-4000-33-A P1dB

Small Signal Gain

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

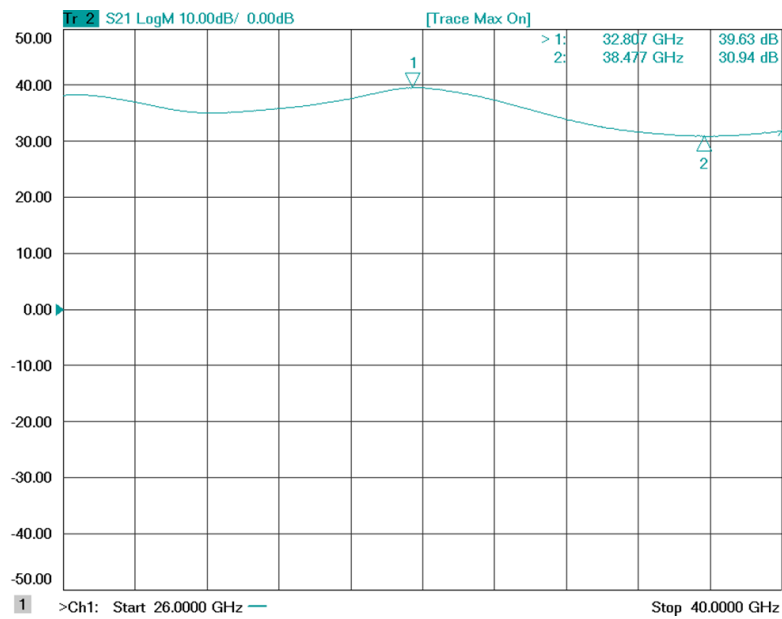


Figure 3: ERZ-HPA-2600-4000-33-A Small Signal Gain

OIP3

Figure 4 shows the output third-order intercept point measurement as a function of frequency at room temperature (25°C).

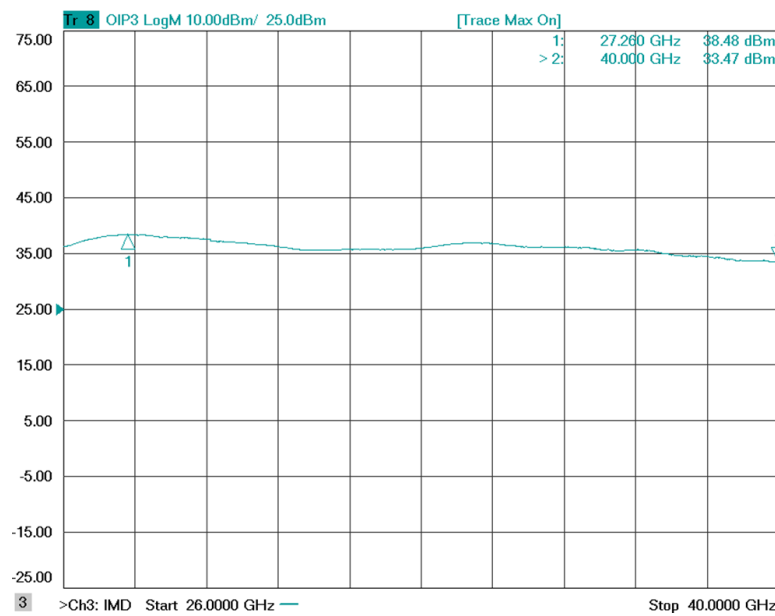


Figure 4: ERZ-HPA-2600-4000-33-A OIP3

Small Signal Gain flatness

Figure 5 shows small signal gain flatness over frequency and temperature at -45°C, 25°C and 85°C.

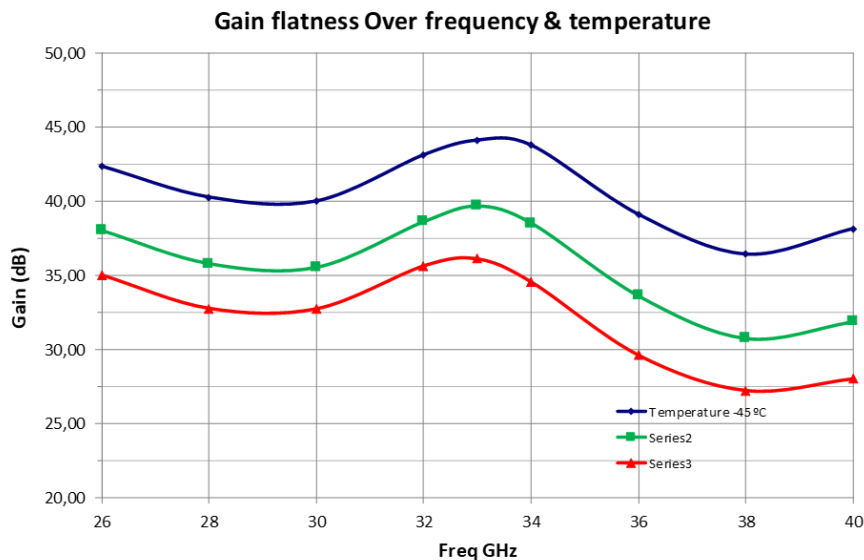


Figure 5: ERZ-HPA-2600-4000-33-A Gain flatness

Noise Figure

Figure 6 shows noise figure measurement as a function of frequency at room temperature (25°C).

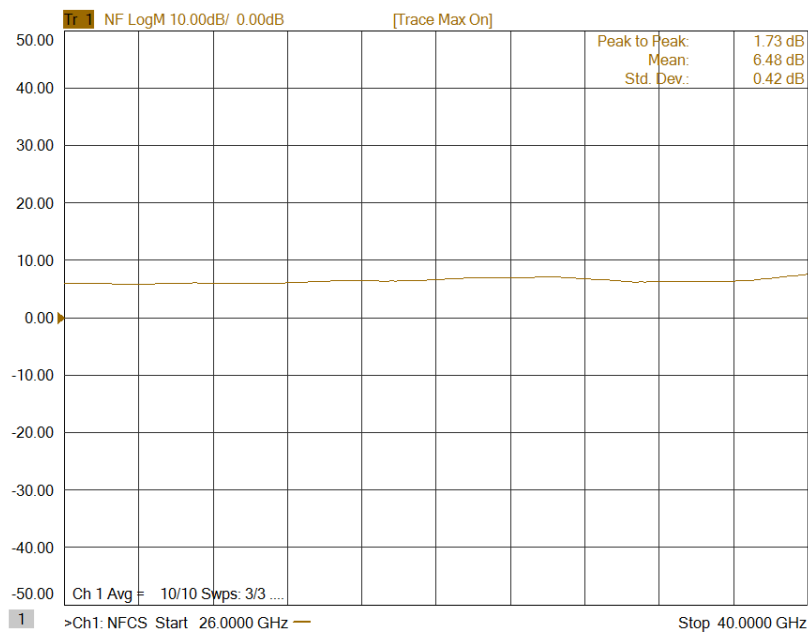


Figure 6: ERZ-HPA-2600-4000-33-A Noise Figure

Input and Output Matching

Figure 7 and Figure 8 show input (S11) and output (S22) VSWR as a function of frequency at room temperature (25°C).

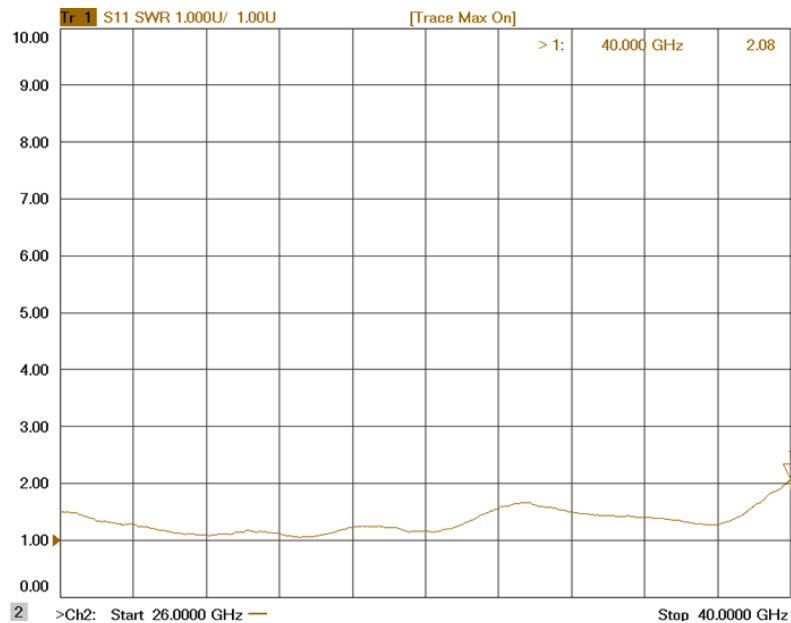


Figure 7: ERZ-HPA-2600-4000-33-A Input Matching

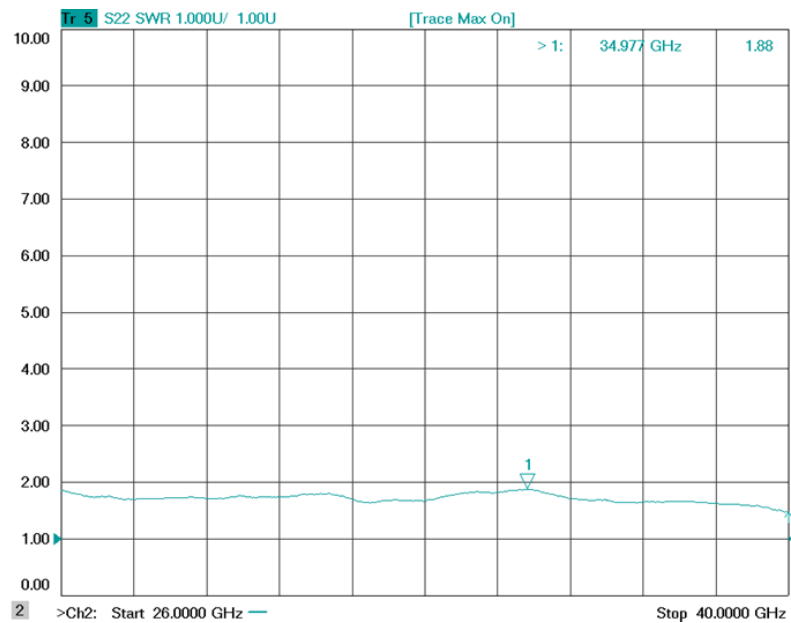


Figure 8: ERZ-HPA-2600-4000-33-A Output Matching

DC & Control Interface

Power supply characteristics

- Input Voltage: 12 ±3 VDC
- Input Current : 2.5 A

Control characteristics

- TTL command (ON/OFF function). Switching time 1us.
- Temperature & Current monitoring.

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

PIN	LABEL	SIGNAL	DESCRIPTION
1	VCC	+12V Power Source	Power Supply
2	VCC	+12V Power Source	Power Supply
3	GND	Ground	Power Ground
4	TA_SEN	Temperature monitor	$V_o = -11.69\text{ mV/}^{\circ}\text{C} \times T + 1.8663\text{ V}$
5	I_SEN	Current monitor	0.1V per Amp
6	GND	Power Ground	Power Ground
7	GND	Power Ground	Power Ground
8	EN	Active High Enable	OFF (GND); ON (3.3V to 5V)
9	NC	Not Connected	-

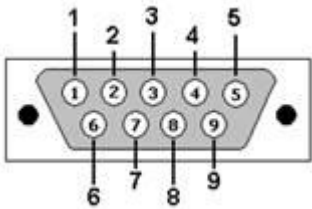


Figure 8: D-sub 9 Connector (Front view)

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

Absolute Maximum Ratings

Condition	Value
DC Voltage	15 VDC
Maximum Input Power (CW)	10 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.

Environmental Specifications (By Design)

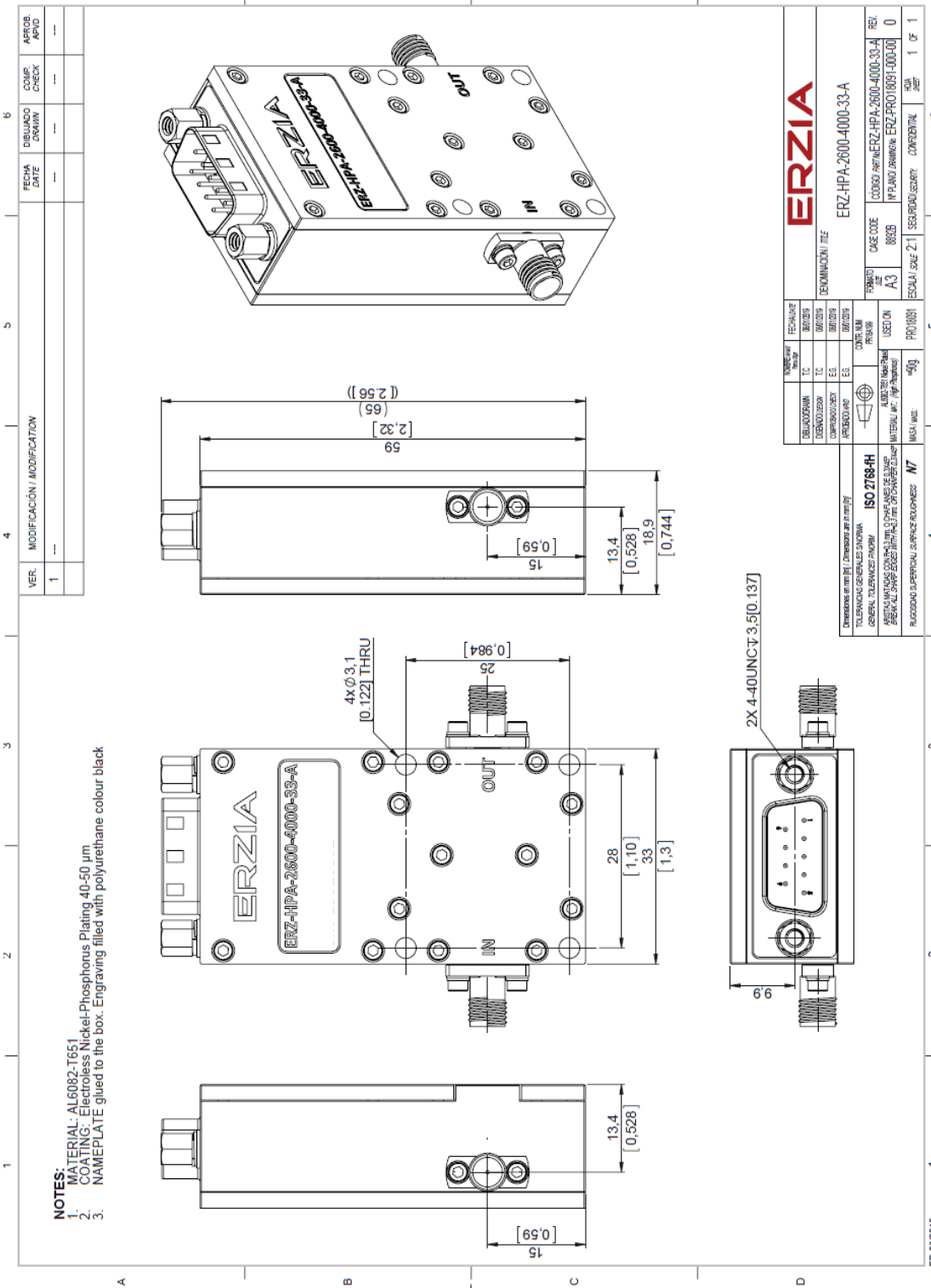
Operating Temperature:	-45 to +85 °C	(MIL-STD-810F, method 520.2)
Storage Temperature:	-55 to 125 °C	(MIL-STD-810F, method 520.2)
Vibration:	8g rms	(MIL-STD-810F, method 514.5)
Shock:	20g,11ms,saw-tooth	(MIL-STD-810F, method 516.5)
Acceleration:	15g	(MIL-STD-810F, method 513.5)

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 / Hi-Rel Usage

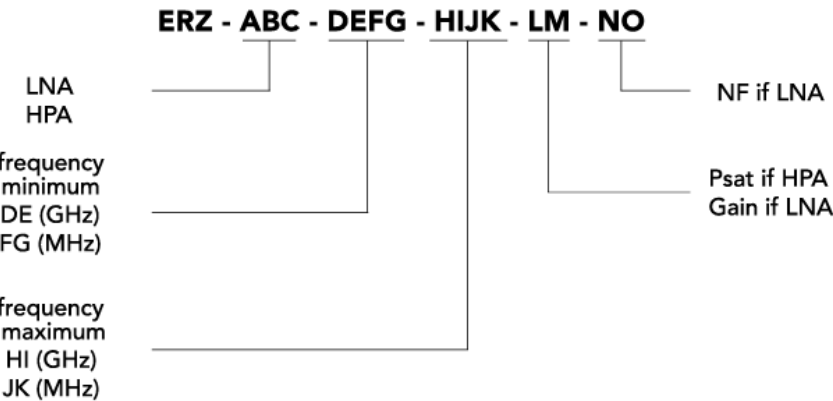
Most of ERZIA’s products are based on rad-hard technologies and can be manufactured and integrated according to MIL / ECSS or specific hi-rel standard-screening for space, aeronautics, or specific hi-reliability usage.

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

20260818_rev1.1

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