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Data Sheet

August 13, 2026

KEYSIGHT / AGILENT

Keysight (Agilent) 87405A Preamplifier, 10 MHz to 3 GHz

Agilent / Keysight 87405A Preamplifier 10 MHz to 3 GHz The Agilent 87405A is a compact 10 MHz to 3 GHz preamplifier providing 22 to 27 dB small-signal gain with low noise figure for spectrum analyzers and microwave measurement systems. It uses Type-N(f) input and Type-N(m) output connectors in an insertable inline package with probe-power DC bias (+15 V at 80 mA). Recommended front-end preamp for 8594E noise-figure measurement solutions and 8590E portable spectrum analyzers. Improving system noise figure and sensitivity on spectrum analyzers; noise-figure measurement setups; general RF/microwave front-end gain block from 10 MHz to 3 GHz; test-port preamplification where compact Type-N insertable gain is required. The Agilent 87405A is a compact 10 MHz to 3 GHz preamplifier providing 22 to 27 dB small-signal gain with low noise figure for spectrum analyzers and microwave measurement systems. It uses Type-N(f) input and Type-N(m) output connectors in an insertable inline package with probe-power DC bias (+15 V at 80 mA). Recommended front-end preamp for 8594E noise-figure measurement solutions and 8590E portable spectrum analyzers. Improving system noise figure and sensitivity on spectrum analyzers; noise-figure measurement setups; general RF/microwave front-end gain block from 10 MHz to 3 GHz; test-port preamplification where compact Type-N insertable gain is required.



MODEL

**Keysight / Agilent
87405A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

87405A

LISTING

<https://aumictechlabs.com/products/87405a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight (Agilent) 87405A is a wideband preamplifier designed to boost weak RF signals across the 10 MHz to 3 GHz frequency range. It delivers 22–27 dB of gain with ± 1.25 dB flatness (50–3000 MHz), enabling improved sensitivity in spectrum analysis, noise figure measurements, and signal detection applications. The unit operates at +15 Vdc, 80 mA and dissipates 1.2 W, making it suitable for portable and bench-top measurement systems.

Technical Specifications
Frequency Range: 10 MHz to 3 GHz Gain: 22–27 dB (min/max); 25 dB minimum (2–3 GHz); Flatness ± 1.25 dB (50–3000 MHz), ± 2.0 dB (10–3000 MHz) Noise Figure: 6.5 dB typical (0.01–2 GHz); 7.5 dB typical (2–3 GHz) Output Power: 4 dBm (2–3 GHz); 1 dBc compressed output at 4 dBm Third Order Intercept (TOI): 15 dBm typical Harmonics: 20 dBc typical at +4 dBm output Input VSWR: 1.5:1 (10–1000 MHz); 1.7:1 (1000–2000 MHz); 2.0:1 (2000–2900 MHz); 2.2:1 (2900–3000 MHz) Output VSWR: 2.0:1 Impedance: 50 Ω nominal Reverse Isolation: 60 dB typical Survival Input Power: +13 dBm typical Operating Temperature: 0°C to +55°C Storage Temperature: –40°C to +70°C

Key Features Dual Type N connectors (female input, male output) 50 Ω matched system impedance Power supply requirement: +15 Vdc at 80 mA via probe power connector Low power dissipation: 1.2 W nominal Mil-Std-883C environmental compliance (humidity, vibration, shock, altitude) Net weight: 270 g

Typical Applications Front-end amplification for spectrum analyzers, noise figure measurements, weak signal detection, and RF receiver sensitivity enhancement across VHF through low-microwave frequencies.

Compatibility & Integration Direct interface with Keysight 8590E series portable spectrum analyzers and 8594E Noise Figure Measurement Solution. Requires optional 11899A Probe Power Supply (100 V, 120 V, 220 V, or 240 V).

Features & description

From manufacturer datasheet

Features

- Frequency 10 MHz to 3 GHz
- Small-signal gain 22 to 27 dB
- Noise figure 6.5 dB typ (to 2 GHz); 7.5 dB typ (2-3 GHz)
- Output power at 1 dB compression about 4 dBm
- Type-N(f) in / Type-N(m) out; 50 ohm
- Probe-power bias +15 V at 80 mA
- Reverse isolation about 60 dB typical
- Compact insertable package with integral bias regulation

87405A Characteristics / Specifications

PARAMETER	VALUE
Model	87405A
Manufacturer	Agilent / Hewlett-Packard / Keysight
Instrument Type	RF/microwave preamplifier
Alias	87405A; Agilent 87405A; HP 87405A; Keysight 87405A
Frequency Range	10 MHz to 3 GHz
Small Signal Gain	22 to 27 dB (min to max)
Output Power 1 dB Compression	4 dBm
Noise Figure 10 MHz to 2 GHz Typical	6.5 dB
Noise Figure 2 to 3 GHz Typical	7.5 dB
Impedance	50 ohm nominal
Output VSWR	2.0:1
Reverse Isolation Typical	60 dB
Third Order Intercept Typical	15 dBm
Survival Input Power Typical	+13 dBm
DC Bias	+15 V at 80 mA
Power Dissipation	about 1.2 W
RF Connectors	Type-N(f) input; Type-N(m) output
DC Connector	Probe power connector (f)
Overall Length Class	about 125 mm Notes Specs from Agilent 87405A preamplifier datasheet/user literature. Confirm probe-power compatibility with the host analyzer or use an 11889A-class probe power supply; verify connector sex before inline insertion.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Specifications	
PARAMETER	VALUE
Model	87405A
Manufacturer	Agilent / Hewlett-Packard / Keysight
Instrument Type	RF/microwave preamplifier
Alias	87405A; Agilent 87405A; HP 87405A; Keysight 87405A
Frequency Range	10 MHz to 3 GHz
Small Signal Gain	22 to 27 dB (min to max)
Gain Flatness 50-3000 MHz: +/-1.25 dB Gain Flatness 10-3000 MHz: +/-2.0 dB Output Power 1 dB Compression: 4 dBm Noise Figure 10 MHz to 2 GHz Typical: 6.5 dB Noise Figure 2 to 3 GHz Typical: 7.5 dB Impedance: 50 ohm nominal Input VSWR 10-1000 MHz: 1.5:1 Input VSWR 1000-2000 MHz: 1.7:1 Input VSWR 2000-2900 MHz: 2.0:1 Input VSWR 2900-3000 MHz: 2.2:1	
Specifications	
PARAMETER	VALUE
Output VSWR	2.0:1
Reverse Isolation Typical	60 dB
Third Order Intercept Typical	15 dBm
Harmonics at +4 dBm Out Typical: -20 dBc	
Specifications	
PARAMETER	VALUE
Survival Input Power Typical	+13 dBm
DC Bias	+15 V at 80 mA
Power Dissipation	about 1.2 W
RF Connectors	Type-N(f) input; Type-N(m) output
DC Connector	Probe power connector (f)

PARAMETER	VALUE
Overall Length Class	about 125 mm

Notes
Specs from Agilent 87405A preamplifier datasheet/user literature. Confirm probe-power compatibility with the host analyzer or use an 11889A-class probe power supply; verify connector sex before inline insertion.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.