

KEYSIGHT TECHNOLOGIES (AGILENT HP)

5087A

The Keysight (Agilent HP) 5087A is a highly reliable RF and frequency distribution amplifier designed to distribute stable frequency reference signals without introducing phase noise or signal degradation. Capable of routing signals from 100 kHz up to 10 MHz, the modular mainframe accommodates up to three input channels and up to twelve output channels. It features excellent channel-to-channel isolation, extremely low additive phase noise, and an automatic AC-to-DC backup power switchover to ensure constant uptime for critical synchronization systems.

SPECIFICATIONS

General

Interfaces	Analog RF BNC connectors (no digital programming interface)
Display	Front-panel analog RF level meter with selector switch

Physical

Power Supply	115 / 230 V AC $\pm 10\%$ (48 to 440 Hz), 20 VA max; 22 to 30 V DC, 300 mA max
Operating Temperature	0 to 50 °C °C
Dimensions (W×H×D)	425 mm × 88.9 mm × 286 mm mm
Weight	5.4 kg kg

Input Specifications

Nominal Input Frequencies	100 kHz, 1 MHz, 5 MHz, 10 MHz
Number of Inputs	Up to 3 (module dependent)
Input Signal Level Range	0.25 Vrms to 3.0 Vrms
Input Impedance	50 ohms
Maximum Safe Input Level	5 V (DC + peak AC)
Input Connector Type	BNC female

Output Specifications

Number of Standard Channels	Up to 3 channels
Number of Outputs per Channel	4
Total Maximum Outputs	12
Output Connector Type	BNC female
Output Impedance	50 ohms
Output Signal Level	Up to 3 Vrms (into 50 ohms), 1 Vrms nominal
Output Level Adjustment Range	Continuously adjustable from <0.2 Vrms to >3 Vrms
Harmonic Distortion	<-40 dB
Non-Harmonic Spurious Outputs	<-80 dB

Isolation & Signal Integrity

Channel-to-Channel Isolation	Between outputs: >60 dB at 10 MHz, >75 dB at 5 MHz, >90 dB at 1 MHz and 100 kHz; Between channels: >100 dB
Reverse Isolation	>90 dB
Phase Noise Additive (1 Hz offset)	<-130 dBc/Hz (at 5 MHz)
Phase Noise Additive (10 Hz offset)	<-140 dBc/Hz (at 5 MHz)
Phase Noise Additive (100 Hz offset)	<-145 dBc/Hz (at 5 MHz)
Phase Noise Additive (1 kHz offset)	<-150 dBc/Hz (at 5 MHz)
Phase Noise Additive (10 kHz offset)	<-150 dBc/Hz (at 5 MHz)
Phase Stability vs Temperature	<0.1 ns/°C (0 to 50°C)
Short-term Stability Contribution (Allan Deviation)	<1 x 10 ⁻¹³ for 1 second averaging time

Modular Configuration & Options

Mainframe Configuration	3 input module slots, 3 output module slots
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Monitoring & Control Interfaces

Front Panel Status Indicators	Power indicator lamp
Front Panel RF Level Meter	Analog meter with 3-position channel selection switch

Power Specifications

AC Input Voltage Range	115 / 230 V AC ±10%
AC Line Frequency Range	48 Hz to 440 Hz
Power Consumption (Maximum)	20 VA
DC Input Backup Voltage Range	22 V to 30 V DC
DC Power Consumption	300 mA
Automatic AC-to-DC Switchover	Yes (seamless switchover to DC backup in the event of AC loss)

Physical and Mechanical

Form Factor	2U Benchtop / Rackmount
Width	425 mm
Height	88.9 mm
Depth	286 mm
Weight (Net)	5.4 kg
Weight (Shipping)	8.2 kg

Environmental & Compliance

Operating Temperature Range	0°C to 55°C
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Phase Stability & Noise

Phase Stability vs Line Voltage	< 0.05 ns for a 10% line voltage change
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RF Performance

Input SWR	< 1.15 at 1, 5, and 10 MHz
Output SWR	< 1.15 at 1, 5, and 10 MHz
Hum and Noise Sidebands	<-80 dBc

Environmental

Storage Temperature Range	-40 °C to +75 °C
Operating Altitude	Up to 4,600 m (15,000 ft)
Non-Operating Altitude	Up to 15,000 m (50,000 ft)

Performance

Output-to-Output Isolation	>60 dB at 5 MHz (between any two outputs in a single channel)
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TECHNOLOGY

Analog RF

APPLICATIONS

RF and Frequency Distribution

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.