KEYSIGHT TECHNOLOGIES (AGILENT HP)

8349B

The Keysight (Agilent/HP) 8349B is a high-performance solid-state microwave amplifier covering the 2.0 to 20.0 GHz frequency range. It delivers excellent gain and power output to overcome systematic RF losses, drive millimeter-wave source modules, and increase the dynamic range and low-level sweep speed of network analysis systems like the HP 8757.

SPECIFICATIONS

General

Interfaces	GPIB (HP-IB), HP 8757 System Interface
Display	3-digit LED display (RF output power in dBm with 0.1 dB resolution)
Amplifier Technology	GaAs FET

Physical

Power Supply	100 / 120 / 220 / 240 VAC (+5%, -10%), 48 to 66 Hz, 85 VA maximum
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	214 mm × 133 mm × 366 mm mm
Weight	7.3 kg kg

Frequency & Gain Specifications

Frequency Range	2.0 to 20.0 GHz
Minimum Small-Signal Gain (2.0 to 18.6 GHz)	15 dB
Minimum Small-Signal Gain (18.6 to 20.0 GHz)	13 dB
Typical Small-Signal Gain (2.0 to 18.6 GHz)	19 dB
Typical Small-Signal Gain (18.6 to 20.0 GHz)	17 dB
Typical Small-Signal Gain Flatness	±4.0 dB (2.0 to 20.0 GHz)

Power & Noise Performance

Minimum Leveled Output Power (2.0 to 18.6 GHz)	+19 dBm (80 mW) (at +5 dBm RF input)
Minimum Unleveled Output Power (2.0 to 18.6 GHz)	+20 dBm (100 mW) (at +5 dBm RF input)
Minimum Leveled Output Power (18.6 to 20.0 GHz)	+17 dBm (50 mW) (at +5 dBm RF input)
Minimum Unleveled Output Power (18.6 to 20.0 GHz)	+18 dBm (63 mW) (at +5 dBm RF input)
Internal Leveled Power Flatness (2.0 to 18.6 GHz)	±1.25 dB
Internal Leveled Power Flatness (18.6 to 20.0 GHz)	±1.5 dB
Maximum Continuous RF Input Power (CW)	+22 dBm
Maximum Noise Figure (2.0 to 18.6 GHz)	13 dB
Maximum Noise Figure (18.6 to 20.0 GHz)	13 dB
Typical Noise Figure	11 dB
Typical Third-Order Intercept Point (IP3)	+30 dBm
Harmonics at +20 dBm Output (2.0 to 18.6 GHz)	< -20 dBc
Harmonics at +18 dBm Output (18.6 to 20.0 GHz)	< -20 dBc
Non-Harmonic Spurious	< -55 dBc
Leveling Modes	Internal, External, Unleveled

Impedance & Port Characteristics

Input VSWR (2.0 to 18.6 GHz)	< 2.8:1
Input VSWR (18.6 to 20.0 GHz)	< 3.8:1
Output VSWR, Unleveled (2.0 to 18.6 GHz)	< 2.5:1
Output VSWR, Unleveled (18.6 to 20.0 GHz)	< 3.0:1
Output VSWR, Leveled (2.0 to 18.6 GHz)	< 1.5:1
Output VSWR, Leveled (18.6 to 20.0 GHz)	< 1.8:1
Nominal Impedance	50 Ω
Typical Reverse Isolation	> 50 dB

Connectors & Interfaces

RF Input Connector	Type-N female
RF Output Connector	Type-N female
RF Port Location	Front Panel (Option 001: Rear Panel)
External Leveling Input Connector	BNC female (rear panel)
System Interface Connector	24-pin GPIB style (for direct connection to HP 8757 network analyzer)
Power Display Resolution	0.1 dB

Physical & Mechanical Characteristics

Form Factor	Half-rack width, 3U height
Cooling Method	Internal fan (forced air)
Net Weight	7.3 kg (16 lb)
Shipping Weight	9.5 kg (21 lb)

Environmental Specifications

Storage Temperature Range	-40 to +75 °C

Performance

Output Power at 1 dB Compression (2.0 to 18.6 GHz)	>= +20 dBm
Output Power at 1 dB Compression (18.6 to 20.0 GHz)	>= +17 dBm

Inputs & Outputs

Recorder Output Voltage	0 to 1 V (10 mV/dB)

Options

Option 001	Rear panel RF Input and RF Output
Option 002	Rear panel RF Input and front panel RF Output

Interfaces

System Interface Compatibility	HP 8350B, HP 8340B, HP 8341B, HP 8757

Power Requirements

AC Input Voltage	100 / 120 / 220 / 240 V AC (+10%, -15%)
AC Input Frequency	48 to 66 Hz
Power Consumption	85 VA

Pulse Transmission

Pulse Transmission Rise/Fall Time	< 10 ns

Leveling & Control

Leveled Output Power Range (2.0 to 18.6 GHz)	+15 to +20 dBm
Leveled Output Power Range (18.6 to 20.0 GHz)	+12 to +17 dBm
Internal Leveled Power Accuracy (2.0 to 18.6 GHz)	±1.25 dB
Internal Leveled Power Accuracy (18.6 to 20.0 GHz)	±1.5 dB
Digital Power Display Range	+0.0 to +25.0 dBm

TECHNOLOGY

Solid State GaAs FET

APPLICATIONS

RF and microwave signal amplification, network analyzer dynamic range extension, millimeter-wave source drive