KEYSIGHT TECHNOLOGIES (AGILENT HP)

11848A

The HP 11848A is the dedicated phase noise interface for the HP 3048A phase noise measurement system. It houses phase detectors, amplifiers, filters, and signal-routing switches, supporting several measurement techniques for both phase noise and AM noise across a 5 MHz to 18 GHz frequency range.

SPECIFICATIONS

General

Interfaces	HP-IB (IEEE-488)

Physical

Power Supply	100 / 120 / 220 / 240 VAC (+5%/-10%), 48 to 66 Hz, 120 VA max
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425.5 mm × 132.6 mm × 514 mm mm
Weight	15.5 kg kg

Compatibility & System Integration

System Compatibility	HP 3048A Phase Noise Measurement System
Measurement Support	Phase noise and AM noise measurements

Signal & Performance Characteristics

Standard Input Frequency Range	5 MHz to 1.6 GHz
Extended Input Frequency Range	1.2 GHz to 18 GHz (requires Option 201)
Phase Noise Offset Range	0.01 Hz to 40 MHz
Left Port RF Input Amplitude (5 MHz - 1.6 GHz)	+15 dBm to +23 dBm
Right Port RF Input Amplitude (5 MHz - 1.6 GHz)	0 dBm to +23 dBm
Left Port Microwave Input Amplitude (1.2 GHz - 18 GHz, Option 201)	+7 dBm to +10 dBm
Right Port Microwave Input Amplitude (1.2 GHz - 18 GHz, Option 201)	0 dBm to +10 dBm
External Phase Detector Input	Provided for measurements outside the internal frequency range
Error Detection	Detectors that sense erroneous measurement conditions
Signal Routing	Numerous internal signal-routing switches
Loop Control Networks	Process phase detector output for voltage control of the input sources
Noise Processing Networks	Process phase noise for measurement by a spectrum analyzer

Internal Calibration Sources

Calibration Source 10 MHz A Amplitude	+15 dBm
Calibration Source 10 MHz A Tuning	±100 Hz
Calibration Source 10 MHz B Amplitude	+6 dBm
Calibration Source 10 MHz B Tuning	±1 kHz
Calibration Source 350-500 MHz Amplitude	+17 dBm
Calibration Source 350-500 MHz Tuning	±20 MHz
Calibration Source 400 MHz Amplitude	-5 dBm
Calibration Source 400 MHz Tuning	Fixed
Internal Calibration Verifications	Four built-in RF sources for functional checks of signal-handling circuits

System Options

Option 201	High frequency phase detector (1.2 GHz to 18 GHz)
Option 907	Front-handle kit
Option 908	Rack-flange kit
Option 909	Rack-flange and front-handle combination kit

Environmental

Storage Temperature	-55 to +75 °C

LNA Performance

LNA Frequency Range	0.1 Hz to 45 MHz
LNA Gain Settings	20 dB / 40 dB
LNA Input Noise Density (10 Hz)	< 10 nV/√Hz
LNA Input Noise Density (100 Hz)	< 4 nV/√Hz
LNA Input Noise Density (1 kHz)	< 2 nV/√Hz
LNA Input Noise Density (10 kHz - 45 MHz)	< 1.4 nV/√Hz

RF Inputs

Maximum Safe RF Input Level	+23 dBm

Tuning Output

Tuning Voltage Output Range	-10 V to +10 V

APPLICATIONS

Phase noise and AM noise measurement

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