

KEYSIGHT TECHNOLOGIES (AGILENT HP)

11729C

The HP 11729C (now Keysight Technologies) is a high-performance Carrier Noise Test Set operating from 10 MHz to 18 GHz. Designed for phase noise and amplitude noise measurements, it supports both the delay line/mixer frequency discriminator and phase detector methods. By down-converting microwave signals using an internal ultra-low-noise microwave reference derived from an external 640 MHz source, it provides convenient manual or automatic phase noise characterization in demanding R&D and metrology environments.

SPECIFICATIONS

General

Interfaces	HP-IB (IEEE-488)
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Physical

Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	425 mm × 177 mm × 524 mm mm
Weight	23 kg kg

Frequency and Reference

Carrier Frequency Range	10 MHz to 18 GHz
IF Output Bandwidth	5 MHz to 1280 MHz
External Reference Input Frequency	640 MHz
External Reference Input Level	+7 to +13 dBm
Internal Microwave Reference Frequencies	1.28 GHz to 17.92 GHz (in 640 MHz steps)
Reference Multiplier Step Size	640 MHz

Noise Measurement Performance

Typical System Sensitivity	Better than -140 dBc/Hz at 10 kHz offset from a 10 GHz source
Baseband Amplifier Gain	40 dB
Baseband Amplifier Bandwidth	10 Hz to 40 MHz

Port and Interface Specifications

RF Input Level (1.28 to 18 GHz)	0 to +15 dBm
RF Input Level (10 to 1280 MHz)	0 to +20 dBm
Maximum Safe RF Input Power	+23 dBm
Input Impedance	50 Ω (nominal)
RF Input VSWR (10 to 1280 MHz)	< 1.5:1
RF Input VSWR (1.28 to 18 GHz)	< 2.0:1
RF Input Connector	Type-N (female)
640 MHz Reference Input Connector	Type-N (female)
IF Output Connector	Type-N (female)
Demodulated Output Connector	BNC (female)
Auxiliary L.O. Output Connector	Type-N (female)

Environmental and Compliance

Storage Temperature Range	-55 to +75 °C
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Functionality

Demodulation Modes	Phase Noise, AM Noise
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RF Input

RF Input Attenuator Range	0 to 50 dB in 10 dB steps
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AM Noise Measurement

AM Detector Frequency Range	10 MHz to 18 GHz
AM Detector Video Bandwidth	DC to 10 MHz
AM Noise Floor	-160 dBc/Hz at >10 kHz offset (for +10 to +20 dBm input)

User Interface

Front Panel Displays	4-digit Carrier Frequency (GHz) LED, 2-digit RF Attenuation (dB) LED
Status Indicators	Remote, Listen, Talk, SRQ, Phase Lock, L.O. Unleveled, Reference Unleveled

Options

Option 001	Adds 640 MHz internal reference SAW oscillator
Option 002 Frequency Range	18 to 26.5 GHz
Option 002 RF Input Connector	APC-3.5 (female)

Environmental

Operating Altitude	Up to 4,570 m (15,000 ft)
Non-Operating Altitude	Up to 15,240 m (50,000 ft)

Baseband Amplifier

Baseband Amplifier Input Impedance	50 Ω nominal
Baseband Amplifier Output Impedance	50 Ω nominal

TECHNOLOGY

Phase Noise Characterization

APPLICATIONS

RF and Microwave Phase Noise Measurement

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