

KEYSIGHT TECHNOLOGIES (AGILENT HP)

3708A

The Keysight Agilent HP 3708A Noise and Interference Test Set is designed to simulate flat-fade conditions on digital or FM microwave radio receivers by injecting high-accuracy noise into the IF section. It features carrier tracking to maintain a constant carrier-to-noise (C/N) ratio automatically under fading conditions.

SPECIFICATIONS

General

Interfaces	HP-IB
Display	7-segment LED display with status indicators

Physical

Power Supply	100 / 120 / 220 / 240 V AC (+11% / -13%), 48 to 66 Hz, 150 VA max
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	425 mm × 177 mm × 625 mm mm
Weight	23 kg

Carrier/Interference (C/N and C/I)

C/N Ratio Measurement Range	0 to 40 dB
C/I Ratio Range	0 to 40 dB
Auxiliary I Input Function	Provides a fixed-loss path to the IF output, mixing an interferer with C/N to provide C/(N+I) ratios

Carrier Path Characteristics

Carrier Path Gain	0 ±0.4 dB (typically 0 ±0.1 dB)
Carrier Path Group Delay	0.2 ns

Power Measurement

Power Meter Resolution	0.01 dB
Power Meter Type	TRMS IF power meter

Measurement Functions

Insertion Loss Measurement Range	35 dB to -5 dB
Insertion Loss Measurement Accuracy	±0.2 dB at 70 or 140 MHz
Noise Bandwidth Measurement Range	Function of insertion loss and filter bandwidth
Measurement Modes / Unit Entry Options	C/N_0, Eb/N_0, or C/N (C/N in user-defined bandwidth)
Tracking Mode Function	Automatically maintains constant C/N ratio in the presence of receiver carrier level variations
Interference Facility	Broadband, with or without noise injection, to stress the radio deterministically

Carrier & Noise Path

Carrier Frequency Range	10 MHz to 140 MHz
Nominal Impedance	75 Ω (standard), 50 Ω (Option 001)
Return Loss	> 26 dB (10 to 140 MHz)

Environmental

Storage Temperature	-40 °C to +75 °C
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Power

Power Consumption	150 VA maximum
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Options

Option 001 RF Connector and Impedance	50 Ω impedance, BNC female connectors
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TECHNOLOGY

Analog/Digital IF Noise Injection

APPLICATIONS

Microwave radio link flat-fade simulation and C/N / C/I characterization

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