

## TW4501 Series Noise Figure Analyzer



Order Code

TW4501

**Maxwellon TW4501 series Noise Figure Analyzer** includes five models with the frequency from 10MHz to 50GHz. It can measure the noise figure and gain of amplifiers, up converters and down converters, as well as to support automatic measurement of noise figure of multi-stage converters. Guide interfaces are intuitive for setting measurement modes. TW4501 series can be widely used in R&D, manufacturing, testing and technical assurance tests of electronic equipment for radar, communication, navigation etc.

### Features:

- Wide frequency coverage from 10 MHz to 50 GHz, and can be extended to 110GHz
- High-sensitivity reception and high-precision measurement performance
- Amplifier, up converter and down converter measurement mode
- Single sideband and double sideband measurement function
- Comprehensive loss compensation function
- Passed/ failed test notification limit line function
- Optional wide range of standard and smart noise sources
- 10.1 inch big screen dual channel HD display, various external interfaces like GPIB, LAN, USB and VGA

### Specifications

Parameters	Specifications
Frequency Range	TW4501 A: 10 MHz to 4 GHz, TW4501 D: 10 MHz to 18 GHz, TW4501 E: 10 MHz to 26.5 GHz, TW4501 F: 10 MHz to 40 GHz, TW4501 H: 10 MHz to 50 GHz
Frequency Reference Accuracy	< $\pm 0.2\text{ppm}$ ( $23^{\circ}\text{C}\pm 3^{\circ}\text{C}$ )
Frequency Tuning Accuracy	<ul style="list-style-type: none"> <li>• 10MHz – 4GHz: &lt; <math>\pm</math>(Reference frequency error +100kHz)</li> <li>• 4GHz – 18/26.5/40/50GHz: &lt; <math>\pm</math>(Reference frequency error +400kHz)</li> </ul>
Noise Figure Measurement Range	0 – 30dB (ENR: 12dB – 17dB)
Noise Figure Measurement	< $\pm 0.1\text{dB}$

Uncertainty	
Gain Measurement Range	-20dB to +40dB
Gain Measurement Uncertainty	< ±0.17dB
Input VSWR	<ul style="list-style-type: none"> <li>• 10MHz ≤ f ≤ 4GHz: &lt; 1.90:1</li> <li>• 4GHz &lt; f ≤ 18GHz: &lt; 2.10:1</li> <li>• 18GHz &lt; f ≤ 50GHz: &lt; 2.40:1</li> </ul>
Main Unit's Self Noise Figure	<ul style="list-style-type: none"> <li>• 10MHz ≤ f ≤ 4GHz: &lt; 8.0dB</li> <li>• 4GHz &lt; f ≤ 18GHz: &lt; 7.5dB</li> <li>• 18GHz &lt; f ≤ 26.5GHz: &lt; 8.0dB</li> <li>• 26.5GHz &lt; f ≤ 40GHz: &lt; 10.0dB</li> <li>• 40GHz &lt; f ≤ 50GHz: &lt; 12.0dB</li> </ul>
Jitter (Uneven)	< 0.17dB (Y Factor typical value 5dB)
Noise Source Drive Voltage	<ul style="list-style-type: none"> <li>• Noise source off: &lt; 1.0 V</li> <li>• Noise source on: +28.0 ± 0.10 V</li> </ul>
Altitude Range	4, 600 meters
RF Input Connector	<ul style="list-style-type: none"> <li>• TW4501 A/D/E: 3.5mm (male), 50Ω impedance</li> <li>• TW4501 F/H: 2.4mm (male), 50Ω impedance</li> </ul>
Noise Source Drive Output	<ul style="list-style-type: none"> <li>• Standard noise source: BNC (female)</li> <li>• Smart noise source: multi-core connector</li> </ul>
Power Supply	AC 100V – 240V, 50/60Hz
Power Consumption	<ul style="list-style-type: none"> <li>• Max. power consumption: 250W</li> <li>• Max. standby: 20W</li> </ul>
Monitor	10.1 inch 1280×800 HD screen, XGA
Data Storage	160 G solid state disk, support USB 2.0 standard storage units
Dimension	<ul style="list-style-type: none"> <li>• 426 (W) × 177 (H) × 460 (D) mm (excluding handle, bottom, pad and side strap)</li> <li>• 510 (W) × 190 (H) × 534 (D) mm (including handle, bottom, pad and side strap)</li> </ul>
Weight	< 25kg

### Ordering Information

Part No.	Name	Description
TW4501 A	Noise Figure Analyzer	10 MHz to 4 GHz
TW4501 D	Noise Figure Analyzer	10 MHz to 18 GHz
TW4501 E	Noise Figure Analyzer	10 MHz to 26.5 GHz
TW4501 F	Noise Figure Analyzer	10 MHz to 40 GHz
TW4501 H	Noise Figure Analyzer	10 MHz to 50 GHz

### Options

Part No.	Name	Description
TW4501 -H01	TW16603/16604 series Noise Source	As standard noise power for noise figure measurement.

TW4501 -H02	Coaxial Adapter	For connection between noise source and adapter interface of noise figure analyzer.
TW4501 -H03	Multi-core Cable	For connection between TW16604 smart noise source drive interface of noise figure analyzer and noise source.
TW4501 -H04	BNC(m)-BNC(m) Cable	For connection between TW16603 standard noise source drive interface of noise figure analyzer and noise source.
TW4501 -H05	Alloy Carrying Case	High strength, lightweight alloy shipping case with handle and wheels for easier handling.

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