MICROTEST®

OMNIScanner®

[advanced certification for premium cabling]

OMNIScanner – The cable certification tool to meet your needs today… and tomorrow

The world's first cable tester to provide Category 7 measurements.

The leading manufacturer of accurate, hand-held cable certification tools presents OMNIScanner, the most advanced, versatile cable tester available today. OMNIScanner leaps ahead of other cable certifiers with the capability to certify enhanced Category 5 cabling. And, it includes the technology needed to test Categories 6 and 7 up to 300 MHz.

One Cable Tester Does It All

OMNIScanner has the functionality to test cables complying with current and upcoming TIA/ISO/IEC cabling standards. With its extremely wide dynamic range of 100 dB and the ability to support up to 300 MHz bandwidth, OMNIScanner is the only product that can test all the way up to 300 MHz on Category 7/Class F links.

Gigabit Ethernet Support

OMNIScanner verifies installed links against all common cabling and network standards including Gigabit Ethernet.

If you're planning a move to Gigabit Ethernet/1000 BaseT on Category 5 or 6 cables, only OMNIScanner provides the accurate Return Loss measurements and the ELFEXT (Equal Level Far-End Cross Talk) measurements you need.

State-Of-The-Art Features

OMNIScanner gives you the performance of a laboratory network analyzer, yet it is easier to use and provides rapid test results. OMNIScanner's design includes a full vector engine, providing both Magnitude and Phase measurements essential for advanced certification requirements. And like a lab network analyzer, it uses a Frequency Domain DSP design, allowing operation at higher speeds and greater dynamic range.

Microtest designed a completely new project-based user interface, enabling custom test, cable and project configurations. The result is a simple, fast and intuitive product that greatly increases productivity.

OMNIScanner includes the fastest Autotest results available, complete TIA/ISO/IEC standards compliance testing, automatic increment of circuit ID, replaceable, rechargeable battery, Flash ROM for field updates, and storage of 1,000 Autotests. For the first time, you can create or modify the extensive cable library or customize Autotests on your PC – and easily download the new setups into your field testers.

OMNIScanner is your solution for measuring superior performance now and well into the future. OMNIScanner is the certification tool that does it all!

Features

- Supports an extended frequency range of 300 MHz.
- Certifies Category 5 and enhanced Category 5 cabling.
- Performs Category 6 and Category 7 measurements.
- Features a dynamic range of 100 dB.
- Meets proposed 200 MHz Level III accuracy requirements.
- Provides greater productivity with Fast Autotest.
- Offers intuitive data management.

www.microtest.com

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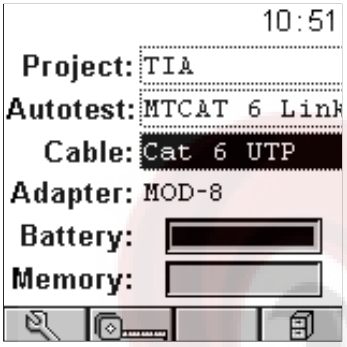
Above: OMNIScanner displays a NEXT graph for each pair combination. Limit and NEXT are shown for the frequency indicated by the cursor position.



Above: OMNIScanner's project screen allows you to perform all typical workflow operations. Project, Autotest specifications and cable types can be selected in the project screen.

Physical Characteristics

- OMNIScanner:
  Dimensions: 8.75" x 4.5" x 2.12" (22.25 cm x 11.4 cm x 5.4 cm)
  Weight: 2.20 lbs (1 kg)
- OMNIRemote:
  Dimensions: 8.75" x 4.5" x 2.12" (22.25 cm x 11.4 cm x 5.4 cm)
  Weight: 1.96 lbs (0.89 kg)

Power Source

- Removable, rechargeable 9.6 Volts @ 1200 mA-Hr NI-CAD batteries
- Built-in fast charger using AC adapter
- Charging Time: 3 hours
- Battery life: 8+ hours operation
- AC: 15 VDC - 1 amp AC adapter for continuous operation or charging

Environmental

- Operating Temperature: 0°C to 50°C (32°F to 122°F)
- Storage Temperature: -10°C to 55°C (14°F to 131°F)
- Operating Humidity: 5-90% non-condensing
- Storage Humidity: 5-95%
- Regulatory Compliance: CE Class A

Measurement Port (Test Interface)

- Ultra low Crosstalk test interface supports testing of all 4 pairs
- 160 pin test interface connector exceeds 10,000 mating cycles
- Test cables and adapter modules support testing of 110 block, and shielded modular jack and plug interfaces

Serial Port

- Connector: Cable: DB-9
- Baud Rate: 300 to 38,400 baud
- Parity: None
- Length: 8 bits
- Handshaking: None, RTS/CTS and XON/XOFF

Memory

- Control: Flash Memory allows electronic upgrading of OMNIScanner/ OMNIRemote programs
- Test Storage: Up to 1000 Autotest results can be stored in flash memory; not subject to loss due to power or battery failures

Autotest Functions

- Full suite of tests to determine if cable meets generic cabling or network type requirements:
  - TIA (Cat 3-5 extended and enhanced requirements for both links and Channels)
  - Extended performance range cabling (Cat 6 and Cat 7)
  - ISO 11801 (Class D, Class C), Australian/New Zealand Standard (Class D Link & Channel, Class C Link & Channel), Class E, Class F, 10BaseT, 100Base-X, 1000Base-T, ATM155

Transmission Performance Measurement Method and Parameters

- Cabling transmission performance measurements (NEXT, RL, Attenuation, and ELFEXT) are implemented using swept frequency domain, vector, digital signal processing measurement methods to ensure accurate, repeatable results
- Accuracy of RF transmission performance measurements calculated in accordance with TIA error models. Designed to meet proposed 200 MHz Level III accuracy requirements. Measurement accuracy model instrument parameters:

Instrument Parameter	@ 100 MHz	@ 200 MHz	@ 300 MHz
Residual NEXT	> 105 dB	>105 dB	>100 dB
Noise Floor	> 100 dB	100 dB	> 95 dB
Detector Accuracy	0.5 dB	0.5 dB	0.5 dB
Output Signal Balance	45 dB	39 dB	35 dB
Common Mode Rejection	45 dB	39 dB	35 dB
Port Match Error	0.1 dB	0.2 dB	0.5 dB

Test Functions

- Wire Map: Finds miswires, opens, shorts, crossed/split pairs; presents results in a schematic format; includes shield test if connected; uses OMNIRemote for complete mapping of wiring at both ends of the cable
- NEXT (Near End Crosstalk): Tests all 6 pair combinations from both directions using OMNIRemote; Frequency Range: 1 to 300 MHz; Dynamic Range: >100 dB; Measurement Accuracy: calculated per TIA error model; Measurement Resolution: 0.1 dB
- Return Loss: Measures Return Loss on all 4 pairs from both directions using OMNIRemote; Frequency Range: 1.0 to 300 MHz; Dynamic Range: 0-25 dB; factory calibrated to ensure measurement port match to reference 100 ohm impedance; Measurement Accuracy: Designed to meet proposed 200 MHz Level III accuracy requirements; Measurement Resolution: 0.1 dB
- Attenuation: Tests all 4 pairs using OMNIRemote as far end active signal injector; Frequency Range: 1.0 to 300 MHz; Dynamic Range: >80 dB; Measurement Accuracy: Calculated per TIAerror model, Accuracy: 100 MHz – 0.6 dB, 200 MHz – 0.7 dB, 300 MHz – 1.0 dB; Measurement Resolution: 0.1 dB
- ELFEXT (Equal Level FEXT): Tests from both directions using OMNIRemote and reports all 24 pair combinations; Frequency Range: 1 to 300 MHz; Dynamic Range: >100 dB; Measurement Accuracy: Designed to meet proposed 200 MHz Level III accuracy requirements; Measurement Resolution: 0.1 dB
- ACR (Attenuation to Crosstalk Ratio): Computed for 4 pairs from both ends at all frequency points from respective pair to pair NEXT and Attenuation measurements
- Length: Range: 0 to maximum distance, where max. distance = 457 m (1500 ft) for twisted pair cable; Accuracy: ± K ± Length resolution ± NVP uncertainly, where K = ± 4% of length or 0.6 m (2 ft), whichever is greater. Length resolution: 0.3 m (1 ft)
- Resistance: Range: 0-500 Ω; Accuracy: ± 0.5 Ω @ 0 to 15 Ω, ± 2% @ 15 to 500 Ω; Resolution: 0.1Ω
- Power Sum NEXT, ACR, ELFEXT: Computed for both ends from respective pair to pair NEXT, Attenuation and ELFEXT measurements

**Specifications subject to change without notice.*

NEXT Accuracy Table (computed per TSB-67 error model)	
Cat 5 Link Limit @ 100 MHz	0.8 dB
Cat 6 Draft Link Limit @ 200 MHz	1.0 dB
Cat 7 Link Limit @ 300 MHz	1.6 dB

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