



# TrendMultipro GbE

The Leading Next Generation Network Tester

## Interfaces

### Test Interfaces

- 100/1000BASE-X dual SFP GBIC
- 10/100/1000BASE-T dual RJ-45 connector

### Operation Modes

- Terminal, Monitor, Pass-through, Loop-back reflector

### Other Interfaces

- USB 2.0 type A (master) x 2
- USB 2.0 type B (slave) x 1
- Compact Flash™ card reader, Type I & II
- 10/100BASE-T auto full-duplex with MAC and VLAN settings
- 3.5 mm jack socket for microphone and headset
- RS-232 on 8-pin mini-DIN connector
- RJ-10 x 1 and RJ-11 x 1 for POTS (optional)

## Cable Functions

### UTP Wiring

- Length, Polarity, Pair swap, Pair skew, Short, Open circuit
- PoE detection

### Optical Fibre

- Signal present (LOS)
- Optical power measurement
- SFP parameter information

## Traffic Generation

### Configuration

- Autonegotiation
- Speed (10/100/1000 Mbit/s)
- Half/Full Duplex capacity
- Address Resolution Protocol (ARP)
- Bandwidth percentage
- Number of frames

### MAC

- Source/Destination address
- Frame payload
- Frame length
- Jumbo frames

### VLAN

- VLAN Identifier (VID)
- User priority
- Q-in-Q, 8 levels

### MPLS

- Two-label stacking
- MPLS CoS (Exp bit)
- Time-To-Live (TTL)

### IP

- IPv4 and IPv6 support
- Source/Destination address
- Time-To-Live (TTL)
- ToS/DSCP (DiffServ) prioritisation bits
- TCP/UDP fields

### Traffic Profile

- Constant, burst and ramp profiles
- Up to 8 independent streams in two ports simultaneously

## BER Testing

At Physical, MAC and IP layers

### PRBS

- $2^{31}-1$ ,  $2^{23}-1$ ,  $2^{15}-1$ , normal and inverted
- All 1s, all 0s
- User-programmable

### Framed Pattern INCITS TR-35:2004

- CRPAT, CSPAT, SCRTPAT, CJTPAT

## RFC 2544

### Tests

- Throughput, Latency, Frame loss, Back-to-back and System recovery

### Configuration

- MAC, VLAN, IP, frame size
- User-programmable size

## QoS Measurements

- Timing resolution: 30 ns
- Packet delay, packet loss, packet jitter
- Out of sequence

## SLA Testing

- Threshold setup and verification
- Pass/Fail testing

## Functions

- Physical, MAC and IP loopback
- DNS support, including host name to IP address and vice versa
- IP ping and trace route
- DHCP client, automatic submask learning, gateway

## Triple Play Testing

### High-Speed Internet

- HTTP Download Speed Test, IP Ping and Trace Route

### VoIP

- IP Phone Emulation, RTP QoS Test, Voice Quality Assessment

### IPTV

- Player, QoE test, Channel Zap

## Results

### Traffic Filters

- Up to 8 simultaneous filters per port with independent statistics
- Ethertype
- Source/destination MAC address
- VLAN Tag, priority, CFI, VID
- Source/destination IP address, IP ToS/DSCP
- Source/destination UDP port, protocol number

### LEDs

- Platform: Battery Status, Power Status, Radio Device Active
- Ethernet: PoE, Port 1 Status, Port 2 Status, Test Status

### Status

- Autonegotiation status
- Link status
- Synchronisation
- Signal present (LOS)

### Frame Counts

- Size classification
- Transmitted and Received
- Unicast, multicast and broadcast
- Pause, tagged VLAN frames and ToS/DSCP

### Error Counts

- Alignment, FCS errored frames
- Undersized, oversized, jabber and fragments
- Lost and misordered frames

## Relevant Standards

- IEEE 802.3, 802.1Q and 802.1ad
- RFC 1242, 2544, 3031 and 3032

## Ergonomics

- Modular: PIMs for ADSL2+, VDSL and Gigabit Ethernet
- Built-in speaker and microphone
- Microphone and headphone connectors
- Display: 5.7" TFT LCD true colour, 1/4 VGA touchscreen
- Remote control software identical to the GUI of the tester
- On-line context-sensitive help
- Built-in user guide and application notes
- Mainframe: 132 x 302 x 60 mm, 1.80 kg
- Battery: 7.4V, 8.8 Ah Li-Ion pack, min. 4 hours of operation

## File Manager

- Copying, editing and transferring files to/from internal and external memory devices (internal, USB and CF)

## EMC and Safety

- EN55022, EN55024, EN61000-3-2, EN61000-3-3
- EN60950-1, IEC 60950
- RoHS compliant
- Operational Temperature: -5 to 45 °C
- Storage Temperature: -25 to 70 °C

## Options - Ordering Information

MG000001	Gigabit Ethernet PIM
MG0S01	Ethernet Services Application
MP0S01	VoIP Application with SIP
MP0S02	Advanced QoS Capability
MV0S01	Video Application
MD0S01	IP Data Application
MD0S02	Web Browser Capability
MG00000V	850 nm 1000SX SFP
MG00000W	1310 nm 1000LX SFP
MG00000X	1550 nm 1000ZX SFP

