



TrendUnipro GbE

An Intelligent Solution for Optical and Electrical Ethernet Testing

Trend Unipro GbE constitutes a easy-to-use, cost-effective, rugged, battery-operated solution for installation, qualification, acceptance, maintenance, repair and troubleshooting of Ethernet and Gigabit Ethernet networks. Some outstanding features of Trend Unipro GbE are:

- Dual optical and electrical Gigabit Ethernet ports
- Network equipment acceptance according with RFC 2544
- Support of VLAN and VLAN stacking (Q-in-Q)
- Quality of Service (QoS) verification
- Power over Ethernet (PoE) evaluation
- Physical, MAC and IP BER testing
- ToS, DSCP and IEEE 802.1p user priority bits
- Ping and Trace Route
- Crosstalk, cable length and wiring verification of UTP cables

Applications

Trend Unipro GbE is perfectly suited for the many test and measurement applications in Ethernet Metro and Enterprise networks:

- Physical layer diagnostics of electrical and fibre connections to verify stable and reliable connection of switches, servers, end user equipment and other network elements
- Isolation of potential transmission related problems like Ethernet autonegotiation, support of Jumbo frames or PoE
- Troubleshooting of VLAN settings for enterprises and Ethernet service providers
- Service Level Agreement (SLA) compliance verification of Ethernet services like EPL, EVPL and E-LAN

Technical Specifications

Test Interfaces

- Dual Electrical: 10/100/1000 Mbit/s RJ-45
- Dual Optical: 100/1000 Mbit/s SFPs

Operation Modes

- Endpoint/Monitor
- Through
- Loopback reflector

Traffic Generation

- Constant, burst, ramp traffic profiles
- Configuration of MAC frames (source and destination address, frame length, frame payload). Jumbo frames supported.
- Configuration single and stacked VLAN tags (VID, User priority as per IEEE 802.1p)
- Support of IP over Ethernet. Configuration of source and destination IP addresses, Time to Live (TTL), ToS/DSCP prioritization bits, transport protocol, UDP source and destination ports
- ARP and DHCP protocols to ease configuration

Autonegotiation

- Ability to force autonegotiation parameters, set preferred values or accept parameters from the remote end
- Autonegotiation of speed (10 Mbit/s, 100 Mbit/s, 1000 Mbit/s) and duplex modes (full or half)
- Remote host autonegotiation OFF indication

Automatic RFC 2544 Testing

- Throughput analysis per frame size
- Latency analysis per frame size
- Frame loss per frame size and offered load
- Back-to-back frames per frame size
- System recovery per frame size
- User-programmable size
- Preset configurations

Bit Error Rate Testing

- Unframed or framed patterns
- At Physical, MAC and IP layers.
- PRBS patterns: $2^{11}-1$, $2^{15}-1$, $2^{20}-1$, $2^{23}-1$, $2^{31}-1$, normal and inverted
- INCITS TR-35:2004: SCRPAT, CRPAT, CJTPAT and CSPAT
- IEEE 802.3: HFPAT, MFPAT and LFPAT
- All 1s, all 0s, 1100, 1010, 1000 fixed patterns
- User-programmable word

Ping

- Single, multiple and continuous ICMP echo request transmission
- Ping length, timeout, pause and TTL

Trace Route

- ICMP or UDP Trace Route
- Maximum number of hops, timeout, time interval
- Remote UDP port for UDP Trace Route

Results

Cable and Physical Layer Testing

- Link status
- Cable status, pair length, polarity, swap, skew and crosstalk
- Optical power measurement

Frame Statistics

- Frame size classification
- Bandwidth utilisation (percentage and total)
- Total received and transmitted frames and bytes
- Unicast, multicast and broadcast frames
- VLAN-tagged frames
- Pause and control frames

- Evaluation of the maximum frame size

Error Counts

- Code errors (physical)
- FCS errors
- Undersize, oversize, fragment and jabber frames
- Collisions

QoS Statistics

- Round trip time
- Lost, errored and misordered frames
- Errored Seconds (ES), Severely Errored Seconds (SES), Unavailable seconds (US)

PoE

- PoE voltage and current
- Positive and negative PoE wires

Event Insertion

- Bit errors, FCS errors and oversized/undersized frames
- Single, continuous, burst and continuous burst insertion modes

Test Results and Configurations

Storage and Printout

- File save and recall
- PC transfer by means of a USB memory stick
- Printing of results in PDF and text format
- Configurable report header

Auto Save

- Current measurement saved if power source fails

General

Interfaces

- USB type A (master) and USB type B (slave) compatible with USB 2.0

Battery

- Field-replaceable AA NiMH batteries
- Minimum 4 hours of operating time
- Internal battery charger

AC Adapter

- 100-240 V AC IN, 12V DC OUT
- Country-specific adapter support

Display

- OLED Graphic Display
- Vision angle > 160° (classical LCD 140° aprox.)
- Contrast ratio > 1000:1 (classical LCD 15:1)

Languages

- English, French, Italian, Polish, Spanish

LEDs

- 13 external tricolour LEDs with on-screen labelling
- 1 x power status, 12 x application
- Link and activity port LEDs

Environmental conditions

- Operational range: -5°C to 50°C
- Storage and transport: -25°C to 70°C
- Humidity from 5% to 90% without condensation

Dimensions and Weight

- 120 (W) x 220 (H) x 60 (D) mm
- 1 kg (including batteries)

RF/EMI, ESD and Electrical Safety

- Radiated EMI: UNE-EN 55022
- Immunity to EMI: UNE-EN 55024
- ESD: UNE-EN 61000-4-2
- Electrical safety: UNE-EN 60950
- RoHS compliant

Ordering Information

Main Options

PG00000	Trend Unipro GbE Main Unit
PG00000U	100bFX SFP GBIC transceiver module kit
PG00000V	1000bSX SFP GBIC transceiver module kit
PG00000W	1000bLX SFP GBIC transceiver module kit
PG00000X	1000bZX SFP GBIC transceiver module kit
PG0H01	User Guide
PG0S01	Single Electrical I/F
PG0S02	Dual Electrical I/F
PG0S03	Single Electrical & Optical I/F
PG0S04	Dual Electrical & Optical I/F
PG0S07	Single Electrical I/F Loopback Only
PG0S08	Dual Electrical I/F Loopback Only
PG0S09	Single Elect & Opt I/F Loopback Only
PG0S10	Dual Elect & Opt I/F Loopback Only

Accessories

400362	Multimode fibre 2m duplex cable LC-SC connectors
400363	Multimode fibre 2m duplex cable LC-LC connectors
400364	Single-mode fibre 2m duplex cable LC-SC connectors
400365	Single-mode fibre 2m duplex cable LC-LC connectors
420350	RJ45 plug to RJ45 plug CAT5 8 way straight cable (length 2m)
450301	CAETHX Ethernet Data Crossed Cord CAT 5e (length 3m)

Delivery

- Delivery in 30 days from order
- Trend can provide training on the tester and technologies

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