

EZtouch GigE

Advanced Test Set for 10/100/Gigabit Ethernet

The ideal tool for field engineers and technicians installing, maintaining, and troubleshooting Metro Carrier and Campus Ethernet networks.

Main Features

- Rugged handheld test set with 4.3" color LCD touch screen.
- 10/100/1000 Mbps electrical port and 100/1000 Mbps fiber port. .
- User defined test profiles and thresholds enable fast turn up of service.
- Advanced Ethernet diagnostics tools; Ping, TraceRoute, FTP, PPPoE, Blinking Port locator, Cable Length, Optical Power Meter and cross talk, Audio tracing and Wire Map test.
- Ethernet BER testing at layer 1/2/3, with error insertion.
- RFC 2544 benchmark testing including; Throughput, Latency, Frame Loss and Back-to-Back Buffer Capacity Frames tests with upstream and downstream modes. Pass/Fail Results.
- Comprehensive layer 2/3/4 statistics and filtering. Detects MAC/IP collisions.
- Traffic generation and analysis for QoS verification of services such as triple play. Generate configurable constant, bursty or ramped traffic layer 2/3 traffic for up to 500 stations.
- (8) independent Multi-streams with configurable with MAC, IP, VLAN, priority, Q-in-Q, Frame Size, TOS/DSCP, bandwidth, protocol, stream loading, traffic shape etc.
- Application Layer Testing (DNS, POP3, SMTP and WEB)
- SNMP Inquiry
- Multi-protocol support including DIX/802.3 SNAP.
- POE Test to identify PoE equipment and test PoE supply voltage.
- Configurable VLAN, and QoS settings
- Extended field testing with field replaceable, rechargeable Lithium Ion battery module.
- Export results via USB.
- Web browser
- Remote operation



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Expertly Designed for Metro and Backhauled Networks

Bit Error Rate Testing (BERT)

Verify the integrity of the network from end-to-end with a bit error rate test. Leave with a concise report. You don't need any surprises tomorrow.

RFC 2544 Testing

Quickly and easily validate circuits and service level agreements with these industry-standard performance tests including Throughput, Latency, Packet Loss and Back to Back Buffer Frames. Pass/Fail results.

Ping, Trace Route, FTP and other Diagnostic Tools

Use the Ping test to determine if a particular host is reachable across an IP network. If the host is not found then the Trace Route utility can guide the user to diagnose at what point the end-to-end connection is being disrupted. Measure cable length and use the Wire Map tool to detect shorts, opens and polarity reversals. FTP test measures the average, min and max download speed.

Multi-Stream Traffic Generation

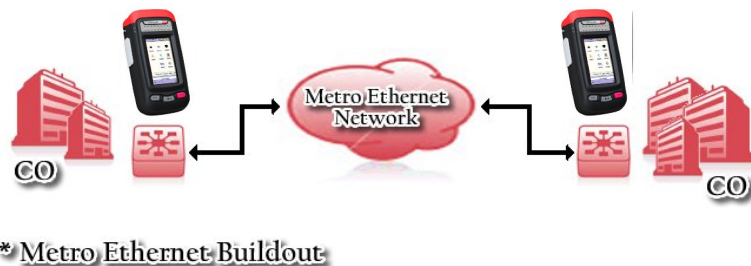
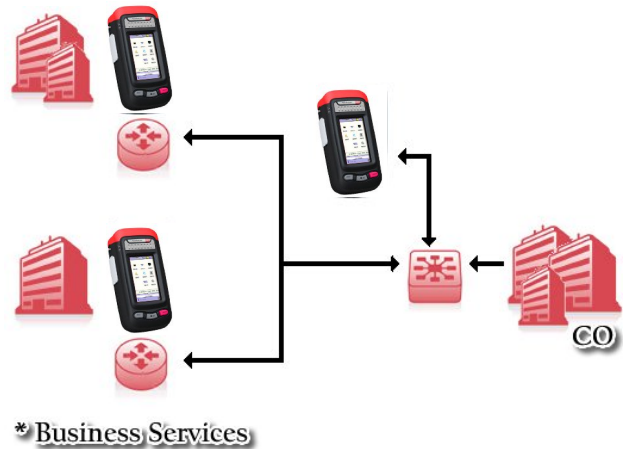
Generate constant, burst or ramped traffic for up to 500 stations in order to preload the network, detect problems and preempt a disaster at turn up. Each stream can be sent with its own MAC, IP, VLAN, priority, Frame Size, TOS/DSCP, bandwidth, protocol, stream loading, traffic shape etc.

QoS Testing

The EZtouchGigE is the ideal for performing QoS verification of metro Ethernet networks. It offers VLAN priorities and specific settings (TOS etc.) helping service providers ensure QoS expectations are met.

Comprehensive Statistics/Filtering

Let the EZtouchGigE provide you with all the traffic statistics so that you know what is really running over that network. You will know the bandwidth utilization, frame sizes, protocols, number of CRC errors, and much more. And, best of all you can easily filter out layer 2/3/4 traffic based on MAC/IP to quickly focus in on the root cause of a problem. Wow! A network analyzer in your hand.



Applications

- Performance Assessment of Carrier Ethernet
- Installation, Activation and Maintenance of Metro Ethernet, Campus Ethernet backbone, of Company Ethernet, residential broadband network, telecom/ISP network, cellular backhaul and more.
- Performance and compatibility testing in R&D organizations

EZtouch GigE Features / Functions

Hardware

Ethernet Interfaces - Single 10/100/1000Base-T electrical port and single 100/1000 Base-X optical port.

External Interfaces - Two USB ports, and one 10Base-T Management port.

Memory - 64MB RAM and 512MB compact 1 Gbyte flash card.

LED's - indicate Power, Charging, selected Ethernet Port, and RX/TX activity.

Rechargeable Battery Pack - Li Ion battery back with 5000 mAHrs, field replaceable.

External Power - AC/DC power converter outputs 15VDC at 3A, 110-240 VAC, 50-60 Hz.

Enclosure - Ruggedized with rubber shell.

Display- Color 4.3" touch screen LCD with 480 x 272 resolution.

Bit Error Rate Testing

Modes - The unit can transmit and receive o itself with a loopback, a second EZtouch GigE unit or with the optional GigE Reflector.

Test Layer - IP, MAC and PHY

Pattern - Test patterns for MAC and IP layers include 2^7 , 2^9 , 2^{11} , 2^{15} - 1, 2^{15} - 1 Inv, 2^{20} - 1, 2^{20} - 1 Inv, 2^{23} - 1, 2^{23} - 1 Inv, All "1s", All "0" and User-defined (4-byte hex). Test patterns for PHY include Compliant Random Data [PCRPAT] and Compliant Jitter Tolerance [CJPAT].

Error Insertion - Insert errors into random code at rates of 10^{-3} , 10^{-4} , 10^{-5} , 10^{-6} and 10^{-7} . Supports user selectable burst sizes.

Traffic - Determines the user-defined linear speed for the random code. Ranges 1% to 100% or enter by bits per second.

Results - Sync status, test duration, Tx Bits, Rx Bits, Bit Errors, Avg. BER, BER/sec, BES.

RFC2544 Performance

4 Tests - Throughput Test, Latency Test, Frame Loss Rate Test and Back to Back Test.

Connections - Remote cooperation with another unit , remote with loopback or remote with optional GigE Reflector.

Progress - Test duration, remaining time and current test running.

Results - Include test direction up/down/up&down, Frame length, Tx traffic, Tx frames, Rx frames, Err

Frames, Actual Rx (fps), Theoretical fps, Avg (delay time) and Max (delay time) and Load (%BW).

Frame Length - All or user specified.

Pass/Fail - Configurable thresholds determine and indicate pass/fail results.

Traffic Generation

Addresses - Source and Target includes support for MAC or IP layer.

(8) Multi-Streams - Configure independent multi-streams with MAC, IP, VLAN, priority, Frame Size, TOS/DSCP, bandwidth, protocol, stream loading, traffic shape etc.

Traffic Shaping - Constant with user-define % utilization, Burst with user-define burst duration and burst gap and Ramp with user-defined time step and load step (%BW).

Frame Type - Options include DIX and IEEE 802.3

Protocols - Options include IP, IPX, ARP, RARP, Banyan, DECnet, AppleTalk and user specified (MAC traffic only)

VLAN - Options include VLAN ID and VLAN Priority.

IP Layer Parameters - Options include TTL, Upper layer protocol, and TOS/DSCP.

Frame Length - Options include Runt, Jumbo, Random and Specify. Supports sizes from 40 to 10,000 bytes.

Results - Include Tx traffic (Mbps), Rx traffic (Mbps), Avg. Rx(Mbps), Tx fps, Rx fps, Tx frames, Number of Rx frames, Rx Err Frames, Rx Collision frames and test duration.

Diagnostic Tools

Cable Length - Measure the physical length of an open end cable. User can input calibration parameter.

Optical Power Meter - Measure the real-time optical power (dBm) of the TX and RX of the Main and Aux Ports.

Wire Map Test - Check the wire map for short circuit, open circuit or polarity reversal.

Ping - Check the connectivity of the network. Measures response time and TTL.

TraceRoute - trace the IP addresses of all the gateways or routers from the EZtouchGigE to the specified host.

EZtouch GigE Features / Functions

FTP Test - Link to an FTP site and measure the max, min and average download speed.

Web browser - Navigate the world wide web via a network connection.

Net Discovery - scan a range of IP addresses to to detect and identify devices by IP address, MAC address, host name, supporting service or SNMP .

Port Blinking - helps to locate a particular port.

Audio Line Tracking - locate a wire within a bundle or locate a specific port.

PoE Testing - to identify PoE equipment and test PoE supply voltage.

Comprehensive Traffic Statistics

Bandwidth Utilization - Includes Max, Min, Average, and Current values. Display Top 10 based on MAC/IP address.

Frame Lengths - Includes the number of frames of different lengths (bytes) including <64,64, 65-127, 128-255, 256-511, 512-1023 and 1024-1518 and >1518. Display Top 10 based on MAC/IP address. Supports run-time filtering on layer 2/3.

VLAN - Includes the number VLAN frames. Supports run time filtering on layer 2/3.

Layer 2 - Includes Top statistics of unicast, multicast, broadcast, CRC error, runt frame, jumbo frame, control frame, pause frame, MAC address. Supports run time filtering on layer 2. MAC/IP Collision detection.

Layer 3 - Includes Top statistics of IP, IPX, ARP, RARP, Banyan, DECnet, ,AppleTalk, and frame of other protocols. Supports run time filtering on layer 3.

SNMP Inquiry

Retrieve MIB Info - Includes Basic, Interface and Service information.

Filtering

MAC (layer 2) - Options include unicast, multicast, broadcast, source MAC address, destination MAC address, frame type (DIX/802.3 SNAP) and VLAN tag etc.

IP (layer 3) - Options include source IP address, destination IP address, bidirectional filter and TOS/DSCP filter.

Layer 4 - Options include UDP/TCP and Source and Destination Port.

Performance Tests

Application Layer - measures the response time (min/max,avg) for DNS, POP3, SMTP and WEB.

Operational

File Handling - Print, save, export, view and delete test data in EZtouchGigE.

Configurations - Save and Open configurations for test configurations including 8 RFC2544 and (8) multi-stream setups.

Importing/Exporting - Test data can be imported and exported with the USB disk.

Online Help - Provides operational prompting and instructions.

Operational Modes

Auto Cooperation & Data Loopback - When executing a test requiring data loop-back functions, the distant EZtouchGigE can be configured to automatically loop back the data without manual intervention.

Remote Operation - Operate EZtouchGigE remotely over a network connection with a PC.

Maintenance Plans

One or two year WanXL Software Suite & Maintenance packages are available and include:

- One or two year hardware warranty
- One or two year software subscription updates
- Unlimited technical support

Specifications

Item	Description
Ethernet Ports	Single 10/100/1000Base-T, Single 100/1000Base-X
External Interfaces	Two USB ports, One 10Base-T Management Port
Protocol	DIX/802.3 SNAP
Display	Color 4.3" touch screen . Resolution: 480 (H) x 272 (v).
Rechargeable Battery Pack	Li Ion 5000mA field replaceable battery pack, 7 hrs of operation.
External Power	AC/DC power converter, 100-240VAC, 50-60 Hz, Output 15V@3A
Memory	64MB internal RAM, 1 Gbyte external Compact Flash card
Operating Temperature	0 to 45 degrees C, 32 to 113 degrees F
Humidity	10% to 90% non-condensing
Storage Temperature	-20 to 60 degrees C, -6 to 140 degrees F
Dimensions	8.27" (L) x 4.33" (W) x 2.36" (H) or 210mm (L) x 110mm (W) x 60mm (H)
Weight	1 Kg or 2.2 lbs.

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Ordering Information

Part Number	Product/Description
Eztouch GigE	EZtouchGigE Ethernet Analyzer with 10/100 RJ-45, 100Mbps Optical and 1000Mbps Electrical and Optical interfaces. Optical SFPs are optional.

Hardware and Cable Options	
PSGIGE-100FX-M1	100BASE-FX module, SFP, MM, 850nm, 500m
PSGIGE-100FX-S1	100BASE-FX module, SFP, SM, 1310nm, 15-20km
PSGIGE-100FX-S2	100BASE-FX module, SFP, SM, 1310nm, 40km
PSGIGE-1000SX-M1	1000BASE-SX module, SFP, MM, 850nm, 500m
PSGIGE-1000LX-S1	1000BASE-LX module, SFP, SM, 1310nm, 10km
PSGIGE-1000LX-S2	1000BASE-LX module, SFP, SM, 1310nm, 40km
PSGIGE-1000ZX-S1	1000BASE-ZX module, SFP, SM, 1550nm, 60km
PSGIGE-1000ZX-S2	1000BASE-ZX module, SFP, SM, 1550nm, 100km
PSGIGE-RJ45-T6	UPT CAT-6 (2m)
PSGIGE-FIBER-LCM	LC-LC MM fiber (3m)
PSGIGE-FIBER-LCS	LC-LC SM fiber (3m)
PSGIGE-FIBER-FCM	LC-FC MM fiber (3m)
PSGIGE-FIBER-FCS	LC-FC SM fiber (3m)
PSGIGE-FIBER-SCM	LC-SC MM fiber (3m)
PSGIGE-FIBER-SCS	LC-SC SM fiber (3m)

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