

Ethernet Traffic Generator Analyzer

Feature Highlights

- ◆ 4-Port Multigigabit Ethernet capable traffic generator and analyzer (100M/1G/2.5G/5G/10G)
- ◆ Automotive Ethernet support (from 100Mb to 10Gb BASE-T1)
- ◆ Line rate traffic generation
- ◆ Bit Error Rate Testing (BERT)
- ◆ Throughput performance testing
- ◆ Latency measurement with 1 nanosecond precision
- ◆ Troubleshooting with Layer 1 (PCS) viewer & Layer 2 capture with advanced triggers and filters
- ◆ Advanced PCAP Replay feature
- ◆ Energy Efficient Ethernet (EEE) support (IEEE 802.3az)
- ◆ Optional Inline Protocol Analyzer and Network Impairment Emulator modes
- ◆ Intuitive browser-based HTML5 GUI with full RESTful API
- ◆ User-customizable Dashboard for statistics and graphical analysis
- ◆ +/- 500ppm Tx offset control
- ◆ Fine bandwidth controls (rate, burst and IPG settings)
- ◆ IEEE 802.3br MAC preemption for TSN applications

Overview

Aukua Systems Ethernet Traffic Generator is an easy to use purpose-built Ethernet test system for R&D, Test and Support engineers building Ethernet based IT, storage networking and communications systems.

The Aukua Ethernet Traffic Generator can be used for Bit Error Rate Testing (BERT), throughput validation, latency measurement or monitoring as well as negative testing (impairment jamming) applications. Data rates from 10Mbps to 10Gbps Ethernet, including 2.5Gbps and 5Gbps Ethernet rates (IEEE 802.3bz) and Automotive Ethernet (IEEE 802.3bp/bw/bv/ch) are supported. The hardware-based architecture uniquely ensures accurate and repeatable results you can count on for stressing, validating, troubleshooting and debugging your systems and devices under test.

The Aukua MGA8410 architecture delivers true line-rate performance regardless of configuration as well as unmatched nanosecond timestamp and latency measurement accuracy. And the optional Inline Protocol Analyzer mode adds even more flexibility and value by providing full visibility into Layer 1 thru Layer 7 bidirectional protocol communications and event-timing analysis while sitting transparently inline between devices under test.

Other important features include real-time statistics, alarms and graphical analysis, external reference clock inputs, the ability to upload and 'replay' packets from a capture file (pcap or pcapng), and a full RESTful API allowing complete automation capability, further enhancing productivity and integration with other development and testing tools.

Our hyperfocus on building a truly intuitive user-experience ensures that the Traffic Generator is useful every time; even for the occasional user. First time users are productively testing within the first 10 minutes, even without training or assistance! This is in part thanks to a single, simple user interface that is served up from the Generator system without any software installations required. No complex initial chassis configuration or setup is required.

The only Ethernet test solution to support both inline as well as end-point testing modes for all Ethernet rates up to 10G!



User Control

- HTML browser-based GUI (no install required)
- Automation: RESTful Web Services API supporting a wide variety of automation environments, including Python, C#, Java, Ruby, and most any others
- 2.5GbE RJ45 Management port
- USB 3.0 port

Test Interfaces

- 4 Ports: 10G, 5G, 2.5G, 1G, 100M, 10M
 - 10G/5G/2.5GBASE-T, 1000BASE-T, 100BASE-TX, 10BASE-T
 - 10G/5G/2.5GBASE-R, 5000/2500/1000BASE-X
 - USXGMII (5G-SXGMII & 10G-SXGMII), SGMII
- Automotive Ethernet:
 - 10G/5G/2.5GBASE-T1, 1000BASE-T1, 100BASE-T1, 1000BASE-RH

Traffic Configuration

- Line rate capable Ethernet traffic generation and analysis
- Configure raw L2 frames, L2 MAC headers, L3 IPv4/IPv6 headers, TCP/UDP headers, VLAN, MPLS, customer headers, more...
- Variable header control (e.g., INC, DEC, Random)
- Bandwidth control: IPG, Frame rate, Data rate, Data utilization, Line Utilization control (to >105%), and extensive Burst controls
- Frame sizes from 8 Bytes (runt) to 32,766 Bytes (jumbo)
 - Size distribution control including random, IMIX, Inc, Dec, list
- IPG Control down to 8 Bytes (short IPG)
- Payload patterns: PRBS, increment, decrement, fixed, custom, etc.

Clock Reference Input

- Frequency: 10MHz SMA
- Phase: 1PPS SMA
- Time of Day (ToD): NTP

Bit Error Rate Testing

- Realtime BER measurement
- Layer 1+, Layer 2 and Layer 3 Bit Error Rate Testing

Latency Measurement / Monitoring

- Measure latency in realtime to 1ns precision
- 1-way and round-trip measurements
- Latency histogram
- Bias setting controls

PCAP Player

- Playback user uploaded pcap/pcapng files
- Time-based or bandwidth playback control
- Triggered start and restart controls
- IEEE 802.3br (MAC preemption) support
- Supports up to 10GB files

Impairment Jamming

- +/- 500ppm transmit clock control
- Link failure / flapping
- Packet Loss
- Ethernet FCS errors
- Data corruption
- Generate runts or short IPGs and more...

Environmental

- Operating Temperature: 0°C ~ 40°C (32°F ~ 104°F)
- Operating Humidity: 10% - 90% (non-condensing)
- Input Power: 100-240 VAC, 50-60Hz; 2.6A Max

System

- Enclosure: 1RU, fits 19" rack system
- Dimensions: 1.7"H(43mm) x 17.2"W(437mm) x 10.63"D(270mm)
- System weight: 10.3lbs / 4.67kg
- Regulatory Compliance: CE, FCC, VCCI, RoHS

Other Features

- RFC 2544 Testing Suite
- Real-time statistics and graphs (bandwidth, alarms, errors, IPG and Preamble stats, etc.)
- Traffic Capture features (both Layer 1 PCS and Layer 2+)
- Auto negotiation status logging / visibility
- Stats Logging
- Energy Efficient Ethernet (EEE) support - IEEE 802.3az with Low Power Idle (LPI) controls
- IEEE 802.3br MAC Preemption support
- Trigger In / Out capabilities (SMA ports)
- Layer 1 PCS viewer (8b10b and 64b66b data)



Simple, powerful and customizable browser-based user interface means there is no software to install. And users are productive in less than 10 minutes out-of-the-box!

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Product description, features and specifications are subject to change without notice.
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