

Ethernet Traffic Generator

Feature Highlights

- ◆ First 100M, 1G, 2.5G, 5G, 10G Multigigabit Ethernet capable traffic generator and analyzer
- ◆ Combo copper (RJ45) and optical (SFP+) support
- ◆ Automotive Ethernet support (100/1000BASE-T1)
- ◆ L1-L3 traffic generation
- ◆ Bit Error Rate Testing (BERT): Layer 1, Layer 2, Layer 3
- ◆ Throughput testing
- ◆ Latency measurement - 1 nanosecond precision
- ◆ PCAP Replay feature
- ◆ **NEW:** Supports Energy Efficient Ethernet (EEE)
- ◆ Optional Inline Protocol Analyzer and Network Impairment Emulator modes
- ◆ Intuitive browser-based GUI with full RESTful API
- ◆ Real-time statistics and graphical analysis
- ◆ +/- 200ppm transmit offset control
- ◆ Bandwidth control (rate and burst settings)
- ◆ VLAN (802.1Q), Q-in-Q (802.1ad), MPLS support

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 the new 2.5Gbps and 5Gbps Ethernet rates (IEEE 802.3bz) and Automotive Ethernet (100/1000BASE-T1, IEEE802.3bw/bp) rates 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 MGA2510 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 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.

First Traffic Generator test solution to support the new 2.5G and 5G IEEE 802.3bz Ethernet rates!

The only 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 wide variety of programming languages, including Tcl, Java, Perl, Python and C/C++
- 1GbE RJ45 Management port
- USB 3.0 port

Test Interfaces

- RJ45: 100M, 1G, 2.5G, 5G, 10G (100BASE-TX, 1000BASE-T, 2.5GBASE-T*, 5GBASE-T*, 10GBASE-T) (*Both IEEE 802.3bz & NBASE-T variants supported!)
- Automotive Ethernet: 100BASE-T1, 1000BASE-T1
- SFP+: 10M, 100M, 1G, 2.5G, 5G, 10G, USXGMII (100BASE-FX, 1000/2500/5000BASE-X, 2500/5000/10GBASE-R, USXGMII, 10BASE-T with SFP transceiver)

Traffic Configuration

- Line rate capable L1-L3 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 Burst controls
- Frame sizes from 8 Bytes (runt) to 32,676 Bytes (jumbo)
- 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
- Bias setting controls

PCAP Player

- Playback user uploaded pcap/pcapng files
- Time-based or bandwidth playback control
- Triggered start controls
- Supports up to 10GB files

Impairment Jamming

- +/- 200ppm transmit clock control
- Link failure / flapping
- Packet Loss
- Ethernet FCS errors
- Data corruption
- Generate runts or short IPGs
- 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 9.8"D(249mm)
- System weight: 11.3lbs / 5.12kg
- Regulatory Compliance: CE, FCC, VCCI, RoHS

Other Features

- Real-time statistics and graphs (bandwidth, alarms, errors, etc.)
- Traffic Capture feature for troubleshooting
- Auto negotiation status logging / visibility
- Stats Logging
- Energy Efficient Ethernet (EEE) support
- Fast Retrain support
- Optional license for powerful Inline Analyzer and Network Impairment Emulator modes available!



Simple yet powerful browser-based user interface means there is no software to install. Users are productive in less than 10 minutes out-of-the-box!