

# Fibre Channel and Ethernet SAN Delay Emulator

## Applications

- ◆ Application End-User Experience and system throughput performance validation against real-world network scenarios
- ◆ Disaster Recovery Planning
- ◆ SAN Storage Extension and Data Center consolidation validation
- ◆ Post-deployment problem replication and troubleshooting
- ◆ Proof of Concept Testing
- ◆ Powerful marketing and sales customer demonstrations

## Feature Highlights

- ◆ 32G, 16G Fibre Channel plus 25G Ethernet support
- ◆ Programmable Layer 1 delay generation
- ◆ Bit error insertion (invert, ones, zeroes, PRBS)
- ◆ Link break control (manual and burst duration)
- ◆ Intuitive HTML5 browser-based GUI with full RESTful API
- ◆ Hardware-based (FPGA) architecture for true line-rate performance and physical layer timing transparency (pass through)
- ◆ L2+ protocol-agnostic operation

## Overview

Aukua Systems’ Fibre Channel and Ethernet SAN Delay Emulator is a powerful and easy to use network, or WAN delay emulator that operates on the Aukua XGA4250 platform.

Today’s Enterprises demand fast, secure, and reliable access to business critical data that is increasingly distributed across many geographic locations. This challenge requires innovative test and validation tools that help to bring next generation Fibre Channel and Ethernet based Storage Area Network (SAN) solutions to market faster, while reducing risk, and increasing confidence.

Aukua’s Fibre Channel and Ethernet SAN Delay Emulators help solve this by accurately bringing the ‘real-world’ network to your R&D and validation labs in terms of delays and impairments. Aukua emulators allow you to empirically characterize and prove these storage solutions are able to deliver the end-user’s expected performance even across Wide Area Networks (WAN), by using a programmatic and repeatable test methodology from the comfort of your lab.

Aukua emulators simplify proving disaster recovery plans, data center migration or consolidation plans. Aukua also enables more realistic proof-of-concept testing of new solutions and technologies. And additionally, Aukua emulators allow for faster troubleshooting of post-deployment issues by bringing the real-world to the lab, thereby greatly reducing mean-time-to-repair (MTTR).

Aukua’s XGA4250 hardware platform architecture delivers true line-rate performance regardless of configuration, includes an intuitive HTML5 user interface, and supports a full RESTful API allowing complete automation capability. And the optional Ethernet Inline Capture and Protocol Analyzer, Ethernet Traffic Generator, and Ethernet Network Impairment Emulator application packages add even more power and flexibility.

## Supports both Fibre Channel and Ethernet!



Aukua XGA4250

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

- Two SFP28 ports: 32G, 16G Fibre Channel, 25G Ethernet 850nm, 1310nm optical or Direct Attach Cable (DAC)

Delay Generation

- Min Delay: 10us @ FC32 and 25GbE with delay enabled
- Max Delay: at least 400km @ FC32 and 25GbE
- Delay resolution control: 4.7ns @ FC32 and 25GbE

Impairment Configuration

- Bit Error Insertion  
Error Rate: from 1e-12 to 1e-2  
Type: Invert, All Ones, All Zeros, PRBS  
Burst Size: number of bits  
Burst Count: number of burst events to generate
- Link Break Control  
Type: Manual, Duration (1ms, 10ms, 50ms, 100ms, etc.)

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

- Physical layer timing transparency (pass through)
- L2+ protocol-agnostic operation
- Optional license for powerful Ethernet Inline Capture Analyzer, Ethernet Network Impairment Emulator, and Ethernet Traffic Generator / Analyzer modes available!

