

## *Local Area Network - Trainer*

*fuel your students' desire to explore*



*Adept, Affordable, Advanced*

## Integrated Software (LT Soft) features

Students can transfer custom files from one system to another, and monitor the network performance during this transfer. The transfer is modeled as an FTP (File transfer protocol RFC - 959) through sockets on client-server architecture. The file transfer attributes can be customized as per the user's needs. Performance metrics are available at multiple levels including application and network levels.

### *Input Parameters*

File Name, File type, File size (browsable)

Packet Length-User selectable from 128 bytes to 65536 bytes

Variation of source and receiver buffer size

Inter packet delay

Source Address

Destination Address

### *Performance Metrics (Network level)*

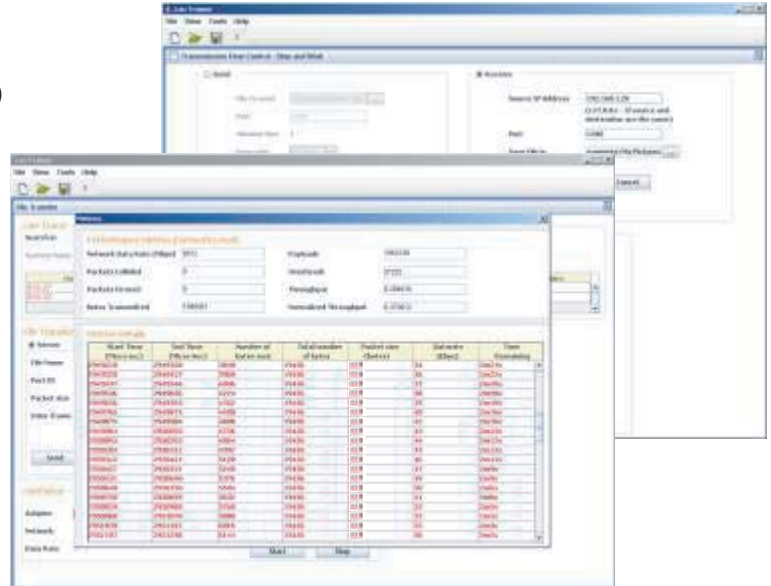
Network Data rate (Mbps)

Through put

Normalized throughput

Bytes Transmitted

Payload and Overheads



Option has been provided to view packet level details. These application level metrics are written for each and every packet that is transmitted in real time.

### *Client Metrics (Application level)*

Packet start time

Packet end time

Packet length

Client Buffer

Time remaining

Percentage of file transferred

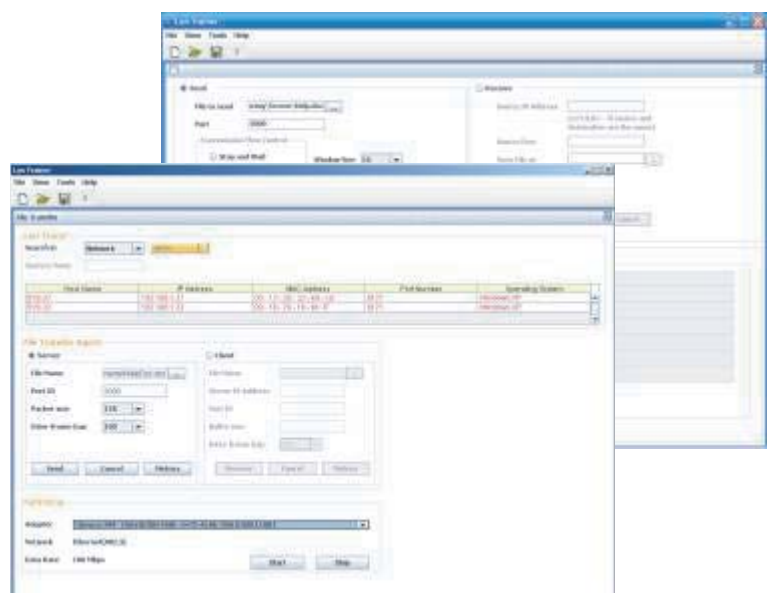
### *Server Metrics (Application level)*

Packet arrival time

Packet length

Server buffer

Percentage of file transferred



LT Soft comes with options to export data to spread sheets for further analysis.

## LAN Trainer (Model LT 01)

Tetcos' LAN Trainer is designed to cater to the increasing requirements of your networks lab at an affordable price. The trainer kit brings you the latest in technology and is built as per IEEE standards for the respective protocols. Ethernet, Wireless LAN, Token Bus and Token Ring protocols are covered. The LAN trainer facilitates students to experiment with Bus, Ring and Star topologies under Ethernet and Infrastructure mode in Wireless LAN.

Robust in design the trainer addresses the needs of your networks lab and enables experimentation with various aspects of the protocol. The LAN Trainer comes integrated with custom software - LT Soft, designed for optimized performance. The software allows understanding of performance metrics at user defined levels. Detailed packet level information is provided on real time allowing for comprehensive performance analysis

### Hardware Features

#### Protocols

- Ethernet (IEEE 802.3)
- Wireless LAN (IEEE 802.11 b)
- Token Bus (IEEE 802.4)
- Token Ring (IEEE 802.5)

#### Topologies

- Bus
- Ring
- Star

#### Features

- Network neighbors
- IP Addresses
- MAC Addresses
- Port No
- Operating System

**No of Nodes:** 4 Nodes

**Data Rate:** 10/100 Mbps for Ethernet.  
1, 2, 5.5, 11 Mbps for Wireless LAN as per IEEE 802.11 b

Real time packet capture and performance analysis

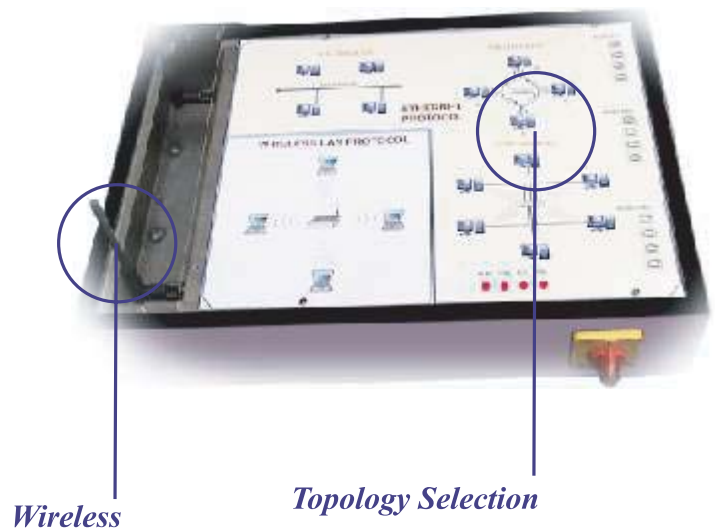
Connectivity through RJ 45

Implementation of flow control protocol

- Stop & wait
- Go Back N
- Selective repeat

Bit Error and packet error introduction through error generator.

Variation of error probability No error,  $10^{-6}$ ,  $10^{-7}$ ,  $10^{-8}$ ,  $10^{-9}$



## Experiments Covered

Example of experiments that can be carried out in conjunction with *NetSim™ Academic Ver*

Key ● = Experiment covered

○ = Experiment not covered

| Sl.No. | List of Experiments   | Coverage |
|--------|---|----------|
| 1      | Ethernet LAN protocol. To Create scenario and study the performance of CSMA/CD protocol through simulation                                | ●        |
| 2      | Token bus and Token Ring protocols. To create scenario and study the performance of token bus and token ring protocols through simulation | ●        |
| 3      | Wireless LAN protocols. To create scenario and study the performance of network with CSMA/CA protocol and compare with CSMA/CD protocols  | ●        |
| 4      | Implementation and study of stop and wait protocol  | ●        |
| 5      | Implementation and study of Go back N and Selective repeat protocols  | ●        |
| 6      | Implementation of distance vector routing algorithm   | ●        |
| 7      | Implementation of Link state routing algorithm  | ●        |
| 8      | Implementation of Data encryption and Decryption  | ●        |
| 9      | Transfer of files from PC to PC using Windows / Unix socket processing  | ●        |

..... and many more

## Deliverables for Local Area Network (LAN) Trainer - LT01

- Hardware trainer for CSMA/CD (Bus, Ring and Star Topologies), CSMA/CA (through built in Access point), Token Bus and Token Ring protocols.
- Connectivity for four computers through cables with RJ 45 Jacks
- LT Soft, interface software for LAN Trainer
- Wireless LAN Adapter cards 4 Nos
- Power cord for mains connectivity
- Connectivity cables
- User Manual (hard & soft copies)

## System Requirements

Pentium II or above, 64 MB RAM, 200 MB Hard Disk Space and Ethernet adapter cards

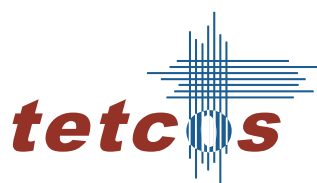
OS: Windows 98 SE / ME / 2000 / XP / NT with service pack 4.0

## About Tetcos

Tetcos provides hardware and software utilities for domains spanning networking, communication, instrumentation and electronics. Founded in 1981, Tetcos has earned a reputation for reliability and domain expertise.

Tetcos' products include network simulation software *NetSim™* - Academic and Standard versions, Digital & Analog Communication Trainers and Local Area Network (LAN) Trainer. Tetcos' products have been operationally proven in hundreds of customer locales world over.

For more information about Tetcos and our products visit our website at [www.tetcos.com](http://www.tetcos.com)



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