

— This two-day course covers the basics of Ethernet technology and its test applications using EXFO's FTB/IQS-8510/8510G Ethernet and/or 10 Gigabit Ethernet Test Module. This training session discusses both theoretical and practical aspects.

CONTENT

Part 1: Theory of Ethernet Technology and Testing

- History
- Datacom Technology Overview
 - Ethernet (10Base-T, CSMA/CD, half-duplex, full-duplex)
 - Fast Ethernet (100Base-T, auto-negotiation)
 - Gigabit Ethernet (1000Base-T)
- Pre-defined Ethernet frame sizes (RFC 2544)
- Throughput, burstability, frame loss and latency (RFC 2544)
- RFC 3393 (jitter)
- RFC 791 (Internet Protocol v.4) and RFC 2475 (service differentiation)
- Error performance-monitoring system (EPMS — G.821 and G.826)
- Virtual local-area networks (VLANs — IEEE 802.1 Q/p and IEEE 802.1 Q in Q)
- Service-disruption measurements
- Bit-error-rate (BER) testing
- Multistream generation application
- 10 Gigabit Ethernet protocol
- LAN and WAN PHY

Part 2: Ethernet Testing Applications Using EXFO's FTB/IQS-8510/8510G Ethernet and/or 10 Gigabit Ethernet Test Module

- Ethernet networks — what to test and how to test them
- Performance analysis (RFC 2544)
- BER testing (Layer 1 and Layer 2)
- Dual test sets/Smart loopback
- Frame analysis
- TCP throughput
- Expert mode
- Scripting

Course Outline

PRE-REQUISITE(S)

- Basic comprehension of physics and mathematics
- Basic knowledge of telecommunications
- Basic understanding of Ethernet technology

METHODOLOGY


The first part of this course consists of lectures using PowerPoint presentations and demonstrations, while the second part consists of specific hands-on testing exercises using EXFO's FTB/IQS-8510/8510G Ethernet and/or 10 Gigabit Ethernet Test Module.

TYPICAL SCHEDULE (can be modified to accommodate attendees' working schedule)

INTRODUCTION TO ETHERNET TESTING	
Day 1	Day 1: Theory <ul style="list-style-type: none"> • Ethernet Technology and Testing • EXFO Product Interface
Day 2	Day 2: Hands-On Session <ul style="list-style-type: none"> • Ethernet Testing Applications Using EXFO's FTB/IQS-8510/8510G Ethernet and/or 10 Gigabit Ethernet Test Module

DOCUMENTATION

All attendees will receive a binder containing copies of presentations and other printed handouts, if applicable. When available, a CD containing the electronic version (PDF format) of the presentation, as well as related application notes, will also be provided.

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