

Course Name: T1/DS1 Testing for Telecom Technicians

Course Overview: This course focuses on proper troubleshooting and installation practices as well as an overview of DS1/T1 fundamentals. The course is designed to teach proper testing techniques to ensure minimal down time. The majority of the course will be focused around hands-on testing with DS1/T1 testers and analyzers.

Course Length: 2 days

Who should attend:

- Field Service Technicians
- Switch Technicians
- Design Engineers
- Managers/Field Supervisors
- Field Engineers
- Installers

You will learn:

- Understand the basic steps in building a DS1 Signal (Multiplexing, Framing, Coding)
- Set up, operate and interpret results on standard DS1/T1 test equipment
- Efficiently install and test new DS1/T1 transport systems
- Troubleshoot existing DS1/T1 systems to ensure signal quality
- Effectively work with DS1/T1 providers to ensure faulty systems are restored quickly and new systems are installed with standardized acceptance test.
- Describe DS1/T1 test parameters and be able to accurately interpret these parameters at multiple test access points.
- Perform channelized testing on existing systems

Prerequisites: None

Customizable: Yes



Course Content:

DS1/T1 Overview

- Industry Applications
- Basic speeds

DS1/T1 Technology

- Multiplexing the signal
- Framing the signal: D4 and ESF
- Line Coding the signal: AMI and B8ZS
- DS1 Errors and Measurements

DS1/T1 Network Equipment

- Provider's equipment: Multiplexers, DSX-1, DCS, Switch
- Demarcation: NIU, CSU
- Cables and connectors

DS1/T1 Test Equipment

- Types of test equipment
- Equipment operation and setup
- Test set Connections

- Testing techniques
- Test parameters

Installation testing of DS1/T1s

- BERT
- Recommended test patterns
- Test Access points
- DS1/T1 loop back testing
- End/End testing
- Verifying service parameters

Maintenance testing of DS1/T1s

- Test access points
- Monitoring signal quality
- Monitoring alarms and errors
- Equipment emulation
- Verifying proper timing and clocking

Channelized Testing

- Monitoring DS0s from DS1s
- Monitoring DS1s from DS3s
- Fractional DS1/T1s (FT1)
- Drop and Insert testing

