

T1/DS1 for Wireless Technicians

Course Length:	2 Days
Course Code:	1303
Prerequisites	None, however a basic understanding of telecommunications and wireless transmission principles will be useful for students taking this course.
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.
Required Equipment:	It is highly recommended that the student bring DS1/T1 test equipment to class. This will enable the student to learn on the actual equipment they will be using on a daily basis.

Course Outline

DS1/T1 Overview

- Wireless Applications
- Network Layout
- Data Rate
- Channels

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



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T1/DS1 for Wireless Technicians

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