

Copper & T1 Network Testing Using the HST-3000c

Course Number	Delivery Method	Course Length	Language of Instruction
TT-HST3000C-T1	Instructor-Led at Customer Site	2 Days	English
TT-HST3000C-T1-VC	Instructor-Led via Virtual Classroom	Five 2.5-hour sessions	English

Synopsis

This course is designed to give a detailed understanding of how to use the HST-3000c, building on basic Copper and DS1 concepts and moving to full testing capabilities. Participants will use this knowledge to perform copper qualification and local loop service verification for T1. Heavy emphasis is placed on fault ID and location.

Prerequisites

A basic understanding of telecommunications principles and qualifying copper, and DS1 Fundamentals and Test Applications (TT-DS1). Introduction to Telecommunications (TT-TELCOM) or a basic understanding of telecommunications principles.

Who Should Attend

Technicians, engineers, and technical support personnel who are directly or indirectly responsible for installing, maintaining, or troubleshooting DS1 networks and local loop services, and who use the HST-3000c to perform copper and DS1 testing and troubleshooting.

Course Goals

Upon completion of this course, participants will be able to:

- Become familiar with the HST-3000c Status LEDs, soft keys, and connectors for both Copper and DS1 testing;
- Detail a structured approach to testing DS1 circuits
- Learn how to navigate the HST-3000c GUI and menus to configure for both Copper and DS1 testing;
- Demonstrate ability to perform copper qualification;
- Demonstrate ability to perform T1 service verification; and
- Demonstrate a thorough understanding of the module and test capabilities.

Course Outline

HST-3000c Overview and General Use (Hands-on, VC Session 1)

- Test set features and benefits
- Capabilities
- Communications
- TestPad UIM and menus
- Status and configuration
- Status LEDs and Test Results

Copper Qualification requirements (VC Session 2)

- Overview of Copper Technology
- Copper qualification tests
 - AC/DC Voltage
 - Current
 - Insulation and loop resistance
 - Longitudinal balance (power influence-noise)
 - Load coil detection
 - Nyquist Qualifications

- Single trace TDR (bridged taps, wet sections, load coil location, shorts, opens, splices)

Copper Testing Using the HST-3000c Copper SIM

- Navigating Copper SIM menus and results
- Manual Copper provisioning and maintenance
- TDR and RFL

DS1 Basics (VC Session 3)

- Orientation and course goals
- DS1 background
- DS1 networks
- DS1 network elements
- How DS1s are carried
- Outline of the four steps to form a DS1

To order and schedule training, call toll free 1-866-228-3762
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Virtual Classroom session breakouts are approximate.

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DS1 Details (VC Session 4)

- Building a DS1
 - Pulse code modulation
 - Time division multiplexing
 - Framing and overhead
 - Line coding
- DS1 timing
- Putting it all together

DS1 Testing Using the HST-3000 DS1 SIM (VC Session 5)

- DS1 test access points
- In-service monitoring of live DS1 circuits
- Out-of-service testing of DS1 circuits
- DS1 alarms and Alarm indication signal
- Navigating the T1 SIM menus and results
- T1 BERT Auto Test and Results Interpretation
- Manual DS1 provisioning and maintenance
- VT-100 operation to acquire HDSL Performance Statistics
- Service Verification via DS1 Bit Error Rate Testing (use of different patterns)

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