

Course Name: TESSCO Line Sweep Certification

Course Overview:

The course covers theory and the practical Return Loss testing used in installation, maintenance and operation of antenna systems. The class will include extensive hands-on exercises testing cable, connectors and antennas along with interpreting the results.

Certification testing is available for students attending this class.

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 basics of cable and connectors
- Set up, operate and interpret results on standard Line Sweeping test equipment
- Efficiently install and test cables, connectors and antennas
- Troubleshoot common problems affecting RF transmission
- Reading and interpreting Line Sweeping traces and results
- Measuring effective and center frequencies of antennas
- Saving and storing test results

Prerequisites: None

Customizable Course: Yes

Course Content:

Introduction to Antennas

- Maxwell & Waves
- Why antennas work
 - Gain
 - Beamwidth
 - Bandwidth



- Antenna network components
- Transmission lines
- Connectors
- Terminations
- Testing Standards

Impedance and Reflections

- Impedance
- Bad connectors
- Crushed cable
- Damaged cable
- Other problems

Basics of Line Sweeping

- What are you testing
- Various types of test equipment
- TDR v/s FDR

Antenna Test Equipment

- Test Heads
 - Coaxial
 - Waveguides
- Phase Stable Cables
- Scalar analyzers – displays
- Equipment set-up
- Initial calibration
- Environmental considerations

Supporting Documentation

- Standard reporting
- Saving results
- Printing results

Test Interpretation

- Testing Standards - defined
- Return Loss
- Distance-to-Fault
- VSWR – Return Loss
- Software tools
- Saving and printing plots

Practical Applications

- When to test
 - Spools



- Turn-up
- Damage
- Scheduled
- Testing Special cables
- Testing Waveguides
- Sectionalizing
- Testing Tower Amplifiers

Frequency Verification of Antennas

