

Course Name: Residential Network Installation for Service Centers and Telecom Carriers

Course Overview:

Residential DSL services have driven the need for a course focused on the all residential technologies and installation and maintenance of these systems. Traditionally, there was only Plain Old Telephone Service (POTS) utilized in residential areas. This has changed drastically in the last fifteen years. Customers are now looking for faster digital services for Internet access, telecommuting and at home office environments. Residential technicians are now forced to install and maintain advanced services like ISDN, DSL and even Fiber Optic systems. These are advanced digital services, however it is still critical that the copper connections between the switch and customer are installed and qualified properly. This course focuses on proper troubleshooting and installation practices as well as an overview of the fundamentals and test equipment. Lab exercises will be used to get hands-on experience with the tools used to properly install, qualify and troubleshoot the service

Course Length:

- 3 days

Who should attend?

- Installers
- Service Technicians
- Residential Technicians
- Telephone Technicians
- Contracting Organizations
- Field Engineers
- Management staff
- Design Engineers

You will learn:

- How Residential Services are changing
- Plain Old Telephone Service (POTS)
- ISDN (BRI)
- xDSL Fundamentals (ADSL, ADSL2, ADSL2+...)
- Copper Basics
- Fiber Basics
- Testing and Troubleshooting Concepts
- Proper use of Test Equipment and Tools

Prerequisites: None

Customizable Course: Yes



Course Content:

Overview of Residential Services

- Types of Services
- Common Applications
- Installation/Maintenance
- Test Equipment/Tools
- Troubleshooting Techniques

Copper Fundamentals

- Cable & Types
- Distances
- Common problems
- Copper Qualification

Copper Qualification

- AC v/s DC Characteristics
- Resistance & Capacitance
- Load Coils & Hard Faults
- TDR testing
- Spectral Analysis

Plain Old Telephone Service (POTS)

- Applications & Technology Overview
- POTS Equipment
- Outside Plant Specifications
- Installation and Maintenance
- Specifications/Parameters
- Test Equipment/Tools
- Troubleshooting Techniques
- POTS Testing

ISDN (BRI)

- Applications & Technology Overview
- BRI v/s PRI
- B channels & D channels
- Interfaces (U, S/T, R...)
- ISDN Equipment
- Outside Plant Specifications
- Installation and Maintenance
- Specifications/Parameters
- Test Equipment/Tools
- Troubleshooting Techniques

xDSL Fundamentals



- Applications
- Technology Overview
- Types of DSL
- DSL Equipment
- ADSL, ADSL2 and ADSL2+
- Outside Plant Specifications
- Installation/Maintenance
- Specifications/Parameters
- Test Equipment/Tools
- Troubleshooting Techniques
- DSL testing
- Test Equipment
- Synch w/ DLAM/Switch & Service Verification

Fiber in the Local Loop

- Applications & Technology Overview
- Basics of Fiber Optic Cable
- Outside Plant Specifications
- Fiber Services
 - PON
 - FTTx
- Terminating Equipment
- Installation/Maintenance
- Specifications/Parameters
- Test Equipment/Tools
- Troubleshooting
- Fiber testing
- Test Equipment
- Service Testing

