

Hands-On

# Cable IPTV Installation and Service



## Course Description

This Hands-On IPTV Installation and Service for Telecommunications course covers the knowledge needed to install and troubleshoot video services.

This course will provide a comprehensive overview of IPTV, a working knowledge of the system from the signal sources to the customer premises equipment, while teaching the requirements for an installer. The why as well as the how to perform installer functions are taught throughout this course, providing the student a Hands-On proper installation as well as basic troubleshooting techniques.

The student will also learn the processes and procedures surrounding digital signal tests and measurements, troubleshooting, interference resolution, in the home network mapping as well as service restoration related to industry-wide standards and practices.



## Students Will Learn

- **The operation of an IPTV system**
- **The typical departments within an IPTV company**
- **The benefits and features of IPTV**
- **Aerial and Underground components of copper feeds to the home**
- **Functions of the home installations components**
- **Connections/interface of customer premise equipment in an IPTV system**
- **To identify and use of legacy distribution systems in- the- home**
- **To understand safety regulations**
- **Correct use of hand and power tools used in installation and repair**
- **And Much More**

## Target Audience

This course is a must for any new hires and anyone wanting to enter this field. This course is also a benefit for experienced voice and data technicians and installers interested in a refresher on current IPTV installation and service techniques.

## Prerequisites

Basic telecommunications understand and electronics and electricity would be helpful.

## Course Outline

### Module 1: Introduction: IPTV, A Brief History

Identify IPTV. Explain it how it works. Understand competitive nature of service. Identify methods of distribution, legacy issues, features , benefits and current operators. Describe the installers role in the system operation and how the installer interfaces with the customer. Identify the need for test and measurement of service in order to provide excellent service to the customer. Describe the possible future of development.

### Module 2: Connector and Wire/ Coax Cable Boot Camp

Demonstrate ability to use RJ-11, RJ-45, F-6/59/11, punch-down connector, screw terminal and Scotch-locks for copper connects. Identify methods of how to determine reliability of copper terminations.

### Module 3: IPTV In the home installation equipment and techniques

Locate the DSLAM and cross-box location. Identify aerial and underground feeds. Locate, inspect and Identify both single and dual pair copper feeds. Determine type of service. Describe rate and reach. Explain role of Pre-fillers team. Describe your role after rate and reach has been confirmed. Explain types of service and capabilities regarding speed, bandwidth and channel capacity. Identify additional services (voice, Internet, home security) available with service. Explain passive and active devices used in network. Describe interference problems on copper distribution. Locate legacy distribution systems and devices to be used in your installation. Identify wireless capability of network. Describe use of Gateway. Explain use of Customer Premise Equipment (CPE) and Set-Top Box (STB). Identify use of other then copper (fiber) distribution in Greenfield operations.

### Module 4: In-home Network Installation and Mapping Lab

Describe how to determine what level of service the customer wants. Describe what types of new systems could be installed (copper, coax, wireless). Explain how to install new network. Locate and identify legacy Cat, coax and wireless distribution system in home. Demonstrate ability to map distribution system. Describe use and locations of CPEs and STBs. Describe how to troubleshoot system with test devices.

### Module 5: Wireless (WiFi) In-home distribution Lab

Explain how WiFi is used in network. Identify capabilities and limitations of Radio Frequency (RF) Wifi network and their frequencies of operation. Describe line of sight signal path and terrestrial obstruction qualities of WiFi. Identify how to detect and measure WiFi signals on laptops, tablets, meters and smart phones. Describe sources of WiFi interference and how that interference can be resolved. Explain what method should be used to locate your WiFi access point for video distribution.

#### Module 6: Interference Resolution for Wire and Cable

Describe sources of interference to video service. Identify interference frequencies. Explain process of resolving ingress and egress problems in distribution plant and home networks. Demonstrate ability to detect sources of interference using test equipment.

#### Module 7: Troubleshooting Techniques Lab Using Meter(s)

Identify segments of distribution system. Explain and demonstrate use of Divide and Conquer method of troubleshooting. Describe use of test equipment. Identify and qualify copper pairs, DVOM, Opens, spectral noise, TDR, TIMS and resistive fault location. Identify, qualify and provision copper cables including coaxial. Describe loss, frequency and signal strength in conductors and passives.

## Notes

Recommended equipment you could bring to course

IPTV Service Meter, Network Mapping Device, Lap-top, RJ-11/RJ-45/F connector prep-tools, hand and power tools.

## Delivery Method

Instructor-Led with numerous Hands-On labs and exercises.

## Equipment Requirements

**(This apply's to our hands-on courses only)**

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

## Course Length

3 Days