Hands-On

Troubleshooting Set Top Boxes for Installers

Course Description

Carriers are introducing IPTV services using IPTV set top boxes. Installers will need to be able to understand how IPTV services function so that they can verify that the service is functioning correctly across the network access. Once the service has been verified the installer must be able to configure and interface the customer TV to the service.

When error conditions occur installers must be able to identify them and troubleshoot the source of problems and where possible reconfigure the service to fix the faults.

At the end of the course attendees will be able observe IPTV services and recognize typical fault conditions and their fixes. They will be able to analyze traffic to identify the service works correctly as well as troubleshoot Set top box problems within the customer premises when they occur.

Attendees will observe typical fault conditions within class to familiarize themselves with what customers might observe and practice troubleshooting test situations to identify the potential faults.

Students Will Learn

- Describe Key IPTV Services And How They Work In Simple Terms
- Distinguish Typical Fault Conditions Reported By Customers
- Select The Right Tools For Testing Services
- Test And Fix Problems Reported By Help Desk And Customer Support Staff
- Troubleshoot All Problems Caused By Customer Miss-Operation
- Identify Faulty Components That Can Be Repaired Or Replaced
- Test And Recognize IPTV Service Faults And What Is Required To Fix Them
- Communicate With Second Line Support Staff Fixing Central Service Faults

- And More...

Target Audience

Technicians, contractors, union craftsman, electricians, installers, engineers, and anyone involved in installing, maintaining, troubleshooting Set-Top Boxes.

Course Outline

Module I: IPTV Services and How They Work

What the customer can expect from IPTV

Standard Definition Television

High Definition Television

Types of IPTV

Multicast Live TV

Video On Demand

Recording IPTV

Where Live TV Comes from: The Head-End

Video On Demand Servers

Module II: Troubleshooting Multicast Live TV Services

How Live TV is transported

What happens when customers select channels

The impact of network delay

The impact of network access overload

The impact of packet loss

How customers describe problems

Lip Sync and sound problems

Picture sizes and shape

Configuration and addressing issues

What the customer can do to crash the system

Tests the Technicians can perform to locate the problems

Module III: Analyzing and Verifying IPTV Services

Using Laptop tools to verify multicast services

Playing multicast TV services

Addressing issues and their correction

Module IV: Interfacing TV to Set Top Box

S Video and what can go wrong

Composite Video

HDMI Interfaces

Implementations and versions of HDMI

Antenna feeds and channel selection

High Definition sound feeds and Lip Sync

What the can be configured on TVs

Consumer Electronics Interface

Equipment Compatibility

Networking Interfaces

Faults that can occur with the TV and their fixes

Module V: Troubleshooting Customer LAN Issues

Types of customer LAN

Impacts of Wireless

Network Address Translation and DHCP

Access points and Routers compared

Routing tables

Identifying routing table problems and fixes

Testing routing

Module VI: Video On demand Problems

Differences between VoD and Multicast TV

Different network loading problems

Testing loading issues

Security and DRM issues and their impact on services

Access identities and age restrictions

Module VII: The Installer and Troubleshoot Tool Kit

More tools is not better

Simple testing tools on a Laptop

Things to avoid

Protocol Analyzer

Video Player

Transport stream testing

Module VIII: Developing an Installation and Testing Plan

Recognizing how customers describe problems

Matching descriptions to possible faults

Speculating on potential problems

Divide and conquer

Looking for most likely faults first

Selecting tests which reduce the list of potential problems

Verifying faults and fixing them

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