

**Course Name:** In-Building Certification Training

**Course Overview:** This course offers specialized training in the assessment, design, installation and commissioning of RF coverage enhancement systems. Class time will include hands-on use of enhancement products. Troubleshooting techniques and practices will allow the field technician to quickly identify critical system operating parameters for system optimization and in the unlikely event of a component failure, rapidly identify and remedy those conditions insuring continued system uptime.

**Course Length:** 2 Days

**Who should attend?**

- RF Site Manager
- RF Site Technicians
- RF Site Installers
- RF Field Engineers
- RF Systems Engineers

**You will learn:**

The training centers on the design and installation of RF boosted systems and covers practical, real-world approaches to typical and highly specialized installations.

**Prerequisites:** None

**Customizable Course:** Yes

**Course Content:**

Basics

- Preview of course/topics covered
- Definition of a signal booster
- Review of FCC Rules covering signal boosters
- Very basic RF principles
  - Wave theory
  - Attenuation/reflection
- Applications
- Basic terminology

Solutions

- Review of reception scenarios
- Solutions for signal blockage
  - Increase base station power
  - Distribute more stations
  - Other methods



- RF enhancement solutions
- Brief overview of a typical installation

#### Components

- System block diagram
- Filters
- Amplifiers
- Output Level Control circuitry
- Key specifications
  - 1 dB compression point
  - Noise figure and IM distortion
  - 3rd Order Intercept

#### Design criteria

- RF link requirements
- Antennas
- Cable plant
- Review of frequency allocations
- Facility design considerations

#### Design Phases I & II

- Design checklists
- Shorts decibel and dBm tutorial
- Design phase I
  - Passive system
  - Analysis
- Design phase II
  - RF enhancement systems
  - Free space loss considerations
  - Analysis

#### Design Phases III & IV

- Design phase III – verification
  - Site testing
  - Level testing
- Design phase IV - parts
  - Splitters. vs. couplers
  - Radiating cable vs. antennas
- Examples

#### RF Enhancement product overview

- Applications
- Features
- System diagrams



- Configuration, command and control
- Scenarios

Hands on class work

- Distributed throughout training

