Course : Fiber optic network, implementation

Practical course - 4d - 28h00 - Ref. RFO
Price : 2790 CHF E.T.

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This training course will teach you how to independently connect a fiber optic network. You'll learn about mechanical splicing and fusing. You'll also learn how to check the quality of your work using reflectometry and photometry measurements, and how to generate reports.

Teaching objectives

At the end of the training, the participant will be able to:

- Understand the technical differences between an industrial fiber-optic network (horizontal) and a FTTH network (vertical)
- Splicing optical fibers by mechanical splicing
- Pigtail fusion welding
- Carry out an optical assessment of connected links
- Interpreting measurement results on fiber optic networks
- Provide installers with a working methodology for preparation, connection and testing

Intended audience

Anyone wishing to learn how to wire fiber optic networks.

Prerequisites

Open to all, but experience in installing computer or telephone networks over copper is a plus.

Practical details

Hands-on work

Practical work on connection and measurement.

Teaching methods

Alternating lectures and practical exercises. Practical work is carried out directly by participants, after presentation or demonstration by the instructor.

Course schedule

PARTICIPANTS

Anyone wishing to learn how to wire fiber optic networks.

PREREQUISITES

Open to all, but experience in installing computer or telephone networks over copper is a plus.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

1 Introduction

- Basic knowledge of fiber optics.
- How optical fibers work. Decibels.
- The various network components.
- Loss factors on fiber optic links.
- The three types of dispersion (Modal, Polarization mode dispersion (PMD), DC).
- Fiber To The Home (FTTH). The different networks.

2 Discovering the installer's tools

- Cleaning. Alcohol cleaning. Dry cleaning.
- Inspection. Verification of results with manual microscope (x400 zoom).
- ConnectorMax analysis software.

3 Mechanical connection

- Spreading fiber-optic cables.
- Stripping and preparation of cable heads.
- Mechanical splicing of optical fibers. Working methods.

4 Fusion connection

- Fiber optic connection techniques. SUMITOMO T-39 welding machine. Working method.
- Use of SUMITOMO CI-06/CI-07 clippers. Notion of first maintenance on the equipment.

Hands-on work

Fusion welding of pigtails and bare fibers for a splice protection cassette.

5 Reflectometry measurement

- Appareils de mesure. L'équipement EXFO FTB-1. Rôle et fonctionnement d'un Optical Time Domain Reflectometer (OTDR).
- Backscatter. Attenuation measurement.
- Pulse width. Dynamics. Averaging". Phantom peaks. Positive connections.
- Set measurement conditions. Configuration of recording formats.
- Setting up a measurement bench. Introduction to the new Intelligent Optical link Mapper (IOLM) method.

Hands-on work

Setting measurement conditions. Measurements. Interpretation of results. Practical measurement of the optical balance of the bonds obtained.

6 Photometric measurement

- Calculation of an optical budget. Photometric measurements on EXFO equipment.
- Insertion loss measurement. Measurement chain.

Hands-on work

Set-up for photometric measurement. Measurement of the optical balance of the bonds obtained by the participant on his creations.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

7 Report generation

- Principle of software for results processing and recipe book generation.
- Process results with FastReporter software. Automatic generation of a measurement file.

Hands-on work

Definition of optical cable specifications. Arrangement and processing of data.