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Viavi Solutions™ Cable and Antenna Analysis Technician Certification Course

Featuring the CellAdvisor™ JD720 Series

Course Number	Delivery Method	Course Length	Language of Instruction
TT-JD720-VCCAS	Instructor-Led	2 Days	English
TT-JD720-VCCAS-OE	Instructor-Led	2 Days	English

Synopsis

This technician certification program will introduce participants to the JD720 Series Cable and Antenna Analyzer and the knowledge and skills needed to effectively verify a cell site's infrastructure including the antenna system, RF and fiber cables, and connectors. Participants will become familiar with the user interface and menus of the JD720 Series tester for characterizing cell site cable and antenna systems including proper fiber inspection and cleaning techniques. Learning is reinforced with practical exercises and an exam, requiring successful completion to receive a certificate.

Prerequisites

Basic understanding of telecommunications transmission principles and prior experience with cellular-based networks is recommended.

Who Should Attend

Technicians, engineers, and anyone who is required to be certified to test cable and antenna systems using the JD720 Series Cable and Antenna Analyzer.

Course Goals

Upon completion of this course, participants will be able to:

- Identify the causes of loss in fiber optic systems

- Perform proper cleaning and inspection techniques of fiber end-faces on jumpers, optical test equipment, and optical patch panels

- Navigate the JD720 Series GUI and menus to configure for various cable and antenna testing procedures

- Demonstrate how to use the JD720 Series to perform cable and antenna analysis

- Demonstrate the ability to save and restore test configurations on the JD720 Series

Product Brief

Course Outline

Welcome and Introduction

- Orientation
- Course Goals

Introduction to Power, VSWR and Return Loss Measurement Values

- How Antennas Work
- Power and Power Measurements
- Coaxial Transmission Cables
- Signal Loss
- Impedance Matching

JD720 Series Cable and Antenna Analyzer Functional Overview

- JD720 Features & Capabilities
- JD720 Orientation: Front Panel, Top panel/Connector ports
- JD720 Functional Overview: Keys/Keypad; User Interface orientation/ navigation
- Battery Care
- System Setup & Maintenance
    - Selecting User Preferences: Date & Time; Display Layout
    - Upgrading Software
    - Service diagnostics
- Saving and Managing files
- Calibrating the JD720 Series
    - 1-Port
    - 2-Port
- Activating and Using StrataSync

Proper Fiber Care – Inspect Before You Connect

- Fiber Optic Connectors – Importance of proper cleaning
- Sources of Contamination – Inspect Before You Connect
- Fiber Cleaning Resources: chemicals, wipes/swabs, etc.
- Practical Approach to Fiber Care and Cleaning
    - Proper handling, cleaning, & inspection techniques
    - Analyzing end-faces

Reflection Testing with the JD720 Series (Hands-On)

- Intro to Reflection Measurements: VSWR; Return Loss
- Preparing for a reflection measurement
- Making reflection measurements
- Analyzing Results
- Reflection Measurements in Smith Chart (graphic display of impedance matching characteristics)

DTF Testing (Hands-On)

- Intro to DTF Measurements (Distance to Fault)
- Preparing for a DTF measurement
- Making DTF measurements
- Analyzing Results

1-Port Cable Loss Testing (Hands-On)

- Intro to 1-Port Cable Loss Measurements (Signal Attenuation)
- Preparing for a 1-Port Cable Loss measurement
- Making 1-Port Cable Loss measurements
- Analyzing Results

2-Port Transmission Testing (Hands-On)

- Intro to 2-Port Transmission Measurements (Gain; Insertion Loss)
- Preparing for a 2-Port Transmission measurement
- Making 2-Port Transmission measurements
- Analyzing Results

High Power CW Signal Generating (Hands-On)

- Introducing the RF source
- Using the RF source

RF Power Testing (Hands-On)

- Intro to RF power measurements
- Preparing for a RF power measurement
- Making RF power measurements
- Analyzing Results

Optical Power Testing (Hands-On)

- Intro to optical power measurements

- Preparing for an optical power measurement

- Making optical power measurements

- Analyzing Results

Optical Fiber Inspection (Hands-On)

- Intro to fiber inspection

- Preparing for fiber inspection

- Performing fiber inspection

- Analyzing Results

JD720-VCCAS Review and Certification

- Review; Questions and Answers sessions

- Lab Test

- Written Test

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