EPEC Datacom & Video Module 1: Copper Communications

Objectives

Upon completion of this module, you will be able to:

- Describe the basics of copper structure cabling application.
- Identify copper structure cabling, connectors and hardware.
- Recognize the tools and procedures of copper structure cabling.
- Identify test equipment and procedures.

Chapter Outline

Chapter 1: Expanding Your Opportunities
   A. The Role of Electrical Distributors
   B. The EPEC Triangle
   C. Considering Product Selection Variables and Preferences

Chapter 2: Communications Standards
   A. Organizations Providing Standards
   B. TIA Standards
   C. Structured Cabling

Chapter 3: History of Cabling
   A. Networked Computing Systems
   B. Ethernet Networks
   C. Twisted Pair Cable

Chapter 4: UTP Cable Categories
   A. UTP Cable Standards
   B. TIA Level & Categories
   C. UTP Cable Specifications

Chapter 5: Copper Cables
   A. Legacy Copper Cables
   B. Coaxial Cables
   C. Parallel and Serial Communications

Chapter 6: Copper Connectors
   A. Copper Cable Jacks and Plugs
   B. Modular Connectors
   C. IBM Token Ring and Coaxial Connectors

Chapter 7: Patch Panels and Punchdown Blocks
   A. Patch Panels
   B. 110 and 66 Punchdown Blocks
Chapter 8: Copper Cabling Systems
   A. Structured Cabling System
   B. Installation Standards
   C. Zone Cabling and Cable Ties

Chapter 9: Copper Tools and Installation
   A. Tools for Copper Communication Installation

Chapter 10: Copper Testing
   A. Testing Network Communication Installations
   B. Wire Mapping Versus Performance Testing
   C. UTP and Coax Test Requirements

Chapter 11: EPEC Assignment
EPEC Datacom & Video Module 2: Fiber Optics

Objectives

Upon completion of this module, you will be able to:

• Recognize how fiber optics is used in VDV applications.
• Compare fiber optics to cable.
• Identify the variety of fiber-optic components and where they are used.
• Explain how fiber is installed and terminated and what tools are needed.
• Recognize fiber-optic test equipment and procedures.

Chapter Outline

Chapter 1: Introduction to Fiber Optics
   A. History and Applications of Fiber-optic Cabling
   B. Outside Plant and Premises Cabling

Chapter 2: How Fiber Works
   A. Wavelength and Microns
   B. Multimode and Singlemode Fiber

Chapter 3: Fiber Specifications
   A. Multimode Fiber-optic Cable Sizes
   B. Causes of Attenuation
   C. Bandwidth Characteristics

Chapter 4: Fiber-optic Cables
   A. Cable Types
   B. Cable Rating Codes
   C. Cable Selection and Installation

Chapter 5: Fiber-optic Connectors and Splices
   A. Fiber-optic Connectors
   B. Fiber-optic Adhesives
   C. Fiber-optic Polishing Techniques

Chapter 6: Fiber-optic Splicing
   A. Splicing Fiber-optic Cable
   B. Fusion vs. Mechanical Splicing
   C. Cleavers, Splice Trays and Enclosures

Chapter 7: Fiber-optic Cable Plants and Hardware
   A. Cable Plant Applications
   B. Fiber-optic Hardware
Chapter 8: Fiber-optic Tools
   A. Important Installation Tools
   B. Tool Functions

Chapter 9: Fiber-optic Testers
   A. Types of Testers
   B. Functions of Testers

Chapter 10: EPEC Assignment
EPEC Datacom & Video Module 3: Cable Pathways and Management

Objectives

Upon completion of this module, you will be able to:
- Define communications pathways and spaces.
- Identify communications administration standards.
- Identify telecom room standards.
- Identify products, their applications and the advantages and disadvantages of each.

Chapter Outline

Chapter 1: Cable Pathway Standards
   A. Cable Pathways
   B. Standards for Cable Pathways

Chapter 2: Types of Cable Pathways
   A. Types of Horizontal Pathways
   B. Advantages and Disadvantages

Chapter 3: Administrative Standards
   A. TIA 606 Standards
   B. TIA 606-B Labeling Format

Chapter 4: Types of Cable Management
   A. Products for Cable Management
   B. Cable Management Applications

Chapter 5: Telecom Room Standards & Products
   A. Standards for Telcom Room Construction
   B. Shallow Rooms

Chapter 6: EPEC Assignment
EPEC Datacom & Video Module 4: Networks, Telephony, Sound & Video

Objectives

Upon completion of this module, you will be able to:

- Identify electronic components of a network.
- Identify components of a telephone system.
- Identify components of a sound system.
- Identify components of a video system.

Chapter Outline

Chapter 1: Computer Networks
  A. Wireless Connectivity
  B. Hubs, Switches and Routers
  C. Shared and Switched Ethernet

Chapter 2: Electronic Networking Components
  A. Electronic Networking Components
  B. Routers, Switches and Bridges
  C. Network Data Transfers

Chapter 3: Telephone Systems and Components
  A. Evolution of Telephone Systems
  B. Components of a Telephone System

Chapter 4: Sound Systems
  A. Speaker Selection
  B. VoIP and Traditional Sound Systems

Chapter 5: Sound System Components
  A. Components of Sound Systems
  B. Application of Sound Components

Chapter 6: Video Systems
  A. Components of Video System
  B. System Design
  C. Components of Home Theater Installations

Chapter 7: EPEC Assignment
EPEC Datacom & Video: Final Exam

This exam presents 100 random questions based on the content presented in Datacom & Video modules 1 through 4. There is no time limit for this exam, and you need to score 75% or higher to pass.

EPEC Datacom & Video: Capstone Project

Objectives

Upon completion of this module, you will be able to:

- Review plans and specifications.
- Determine the best products for a specified application.
- Consider product selection variables and trade-offs.
- Create a professional bill of materials.
- Develop a professional cut package using supplier catalogs and other industry and company resources.

Chapter Outline

A. EPEC Capstone Project