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, Siamese, and RapidRun 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