DELORENZO DL-TC72 Wide Area Network Wan E Internet Instructions

Contents

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Product Information

The TC72 is a Telecommunications and ICT training package designed to provide engineers with the necessary knowledge andskills for the installation and maintenance of Digital Telecommunications and Internetworking systems. It serves as a base training module and prepares engineers for further training on ISDN networks, Wide Area Networks, and the Internet. The package covers various communication protocols including HDLC, SDLC, X.25, Frame Relay, and ATM. It also provides an

introduction to the communication architecture of the OSI model and covers topics such as the OSI reference model, format of information, and different levels of the OSI model.

Specific topics covered in the package include

- HDLC/SDLC Protocols: Introduction to HDLC/SDLC protocols, structure of HDLC frames, types of frames, and examples of HDLC sessions.
- Frame Relay Network and Protocol: Introduction to Frame Relay network and protocol, virtual circuits (permanent and switched), congestion control parameters, throughput management parameters, LMI (Local Management Interface), and format of Frame Relay frames.
- X.25 Package Switching Network: Characteristics and operating parameters, format of level 2 frame, format of level 3 package, addressing in the X.25 network.
- ATM (Asynchronous Transfer Mode): Characteristics and operating parameters, format of ATM cell, connections, virtual paths and channels, and the ATM reference model.

Product Usage Instructions

To use the TC72 Telecommunications and ICT training package, follow these steps

1. Ensure that all required components are included in the package. These include the TC72-MP module, 2 LCD displays for frame visualization, and simulation boards for different protocols (HDLC, Network X.25, Frame Relay).
2. Connect the LCD displays to the TC72-MP module for frame and package visualization.
3. Select the desired simulation board based on the protocol you want to simulate (HDLC, Network X.25, or Frame Relay).
4. Insert the selected simulation board into the insertion system of the TC72-MP module.
5. Power on the TC72-MP module and LCD displays.
6. Follow the training materials provided to learn about the communication protocols and their operation.
7. Use the LCD displays to visualize the frames and packages exchanged by the communication devices during simulations.
8. Experiment with different scenarios and configurations to gain practical experience.
9. Refer to the user manual and training materials for troubleshooting and maintenance guidelines.

Note It is important to follow safety precautions andguidelines provided in the user manual while using the TC72 Telecommunications and ICT training package.

Objectives

Base training of an engineer for the installation and maintenance of Digital Telecommunications and Internetworking systems. This package provides the “background” for the next training on the ISDN network, on the Wide Area Networks and on Internet

Educational Path

The Educational Path of the Training Package covers the following subjects

The communication architecture of the OSI model

Introduction to the communication protocols, The OSI reference model, Format of the information, The OSI model: Physical Level (level 1), Line Level (level 2), Network Level (level 3), Transfer Level (level 4), Session Level (level 5), Presentation Level (level 6), Application Level (level 7)

HDLC/SDLC Protocols

Introduction to the HDLC/SDLC Protocols, The structure of the HDLC frame, CONTROL field and type of frames, The HDLC frames: Information, Supervisory, Unnumbered, Examples of HDLC session: NRM and ABM connection

Frame Relay network and protocol

Introduction to the Frame Relay network and protocol, The Frame Relay and DLCI virtual circuits, The permanent (PVC) and switched (SVC) virtual circuits, Control of the congestion: parameters DE, FECN, BECN, Management of the throughput: parameters CIR, BC, BE, TC, LMI: Local Management Interface, Format of the Frame Relay frames, Format of the LMI frames

X.25 package switching network

Characteristics and operating parameters, Format of the level 2 frame, Format of the level 3 package, Addressing in the X.25 network

Asynchronous Transfer Mode – ATM

Characteristics and operating parameters, Format of the ATM cell, Connections, Virtual Paths and Channels, The ATM reference model

Composed of TC72-MP: Communication Protocols

This module allows the simulation of the operation of the communication protocols. It includes 2 LCD displays for the visualization of the frames and of the packages that the communication devices exchange. Furthermore, it includes a simulation boards insertion system for the different protocols. The following simulation boards are provided: HDLC protocol Network X.25 Frame Relay

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Documents / Resources

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