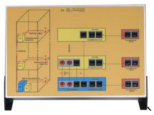
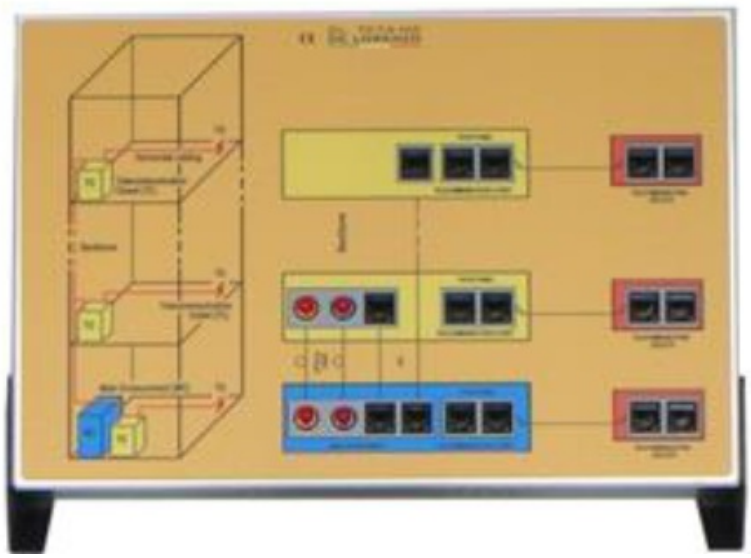


DELORENZO DL TC74 Local Area Network LAN and Intranet Instructions

Contents

DELORENZO DL TC74 Local Area Network LAN and Intranet



Product Information

The product is a training package for engineers focused on the installation and maintenance of Local Area Networks (LANs) and Intranets. The package covers various topics such as local network components, transmission media, network protocols, Ethernet standards, network devices, structured wiring standards, network protocols (NetBIOS, NetBEUI, TCP/IP, IPX/SPX), Intranet concepts and diagnostics, architecture of Peer-to-Peer and network Server Operating Systems.

The package includes the following components

- TC74-MC: LAN structured cabling module
- TC74-DS: Switching HUB (Quantity 3)
- TC74-DM: Media Converter (Quantity 2)

TC74-MC: LAN structured cabling

This module demonstrates the structure of LAN cabling according to the EIA/TIA 568A and ISO/IEC 11801 standards. It includes a diagram of the structured cabling, RJ45 and optical fiber sockets, and a patch panel for users' sockets.

TC74-DS: Switching HUB

These HUBs are IEEE 802.3 and 802.3u compatible with a transmission speed of 10/100 Mb/s. Each HUB has 4 RJ45 ports and requires an external power supply.

TC74-DM: Media Converter

The Media Converters convert from RJ45 (10Base-T) to optical fiber (10Base-FL). They have 1 RJ45 and 1 ST (RX/TX) connection. They are compatible with cat. 3, 4, 5, and optical fiber cable 62.5/125 ST. They are also IEEE 802.3 compatible.

Product Usage Instructions

To use the training package, follow these steps:

1. Start with the "Introduction to local networks" section. Familiarize yourself with the components, transmission media, topologies, protocols, and network devices used in LANs.
2. Proceed to the "Signal coding and transmission media" section. Learn about coding techniques and different types of transmission media like coaxial cable, telephone wire, and optical fibers.
3. Move on to the "The OSI model and the protocols LAN IEEE" section. Understand the OSI reference model, physical and line levels, and the IEEE 802 project.
4. Study the "Networks: Ethernet, Fast Ethernet and Gigabit Ethernet" section. Gain knowledge about Ethernet standards, sublevel MAC, CSMA-CD access method, and different Ethernet speeds.
5. Explore the "Network devices" section to learn about typical devices in Ethernet networks such as transceivers, repeaters, media converters, hubs, and switches.
6. Proceed to the "Structured wiring according to standard EIA/TIA 568A – ISO/IEC11801" section. Understand structured wiring concepts, wiring standards, topology, and main elements of structured wiring.
7. Study the "Protocols: NetBIOS, NetBEUI, TCP/IP, IPX/SPX" section to gain knowledge about different protocols

at various levels and their interfaces.

8. Learn about Intranets and network diagnostics in the “Intranet and diagnostics on the networks” section. Understand terminal emulation, file transfer, electronic mail, World Wide Web, and TCP/IP tools.
9. Explore the architecture of Peer-to-Peer and network Server Operating Systems in the respective sections. Understand their general architecture, support for multiple networks, protocols, and programming interfaces.
10. Finally, make use of the TC74-MC (LAN structured cabling) module, TC74-DS (Switching HUBs), and TC74-DM (Media Converters) included in the package to practice and apply your knowledge in LAN installation and maintenance.

Objectives

Training of an engineer for the installation and maintenance of Local Networks, capable of:

- knowing the principles, the standards and the devices that are normally used in LANs
- installing LANs and Intranet in compliance with the current cabling standards
- installing the protocols and presetting the configurations on the network computers
- performing maintenance, troubleshooting and tests on LANs

Educational Path

The Educational Path of the Training Package covers the following subjects

- **Introduction to local networks**
  What is a local network, Components of a local network, the transmission media, the structured wiring, Network topologies, Network protocols: OSI Model, Technologies and standards for the local networks, Network devices, Network operating systems.
- **Signal coding and transmission media**
  Coding techniques, the transmission media, the coaxial cable, the telephone wire, the optical fibres.
- **The OSI model and the protocols LAN IEEE**
  The OSI reference model, OSI Model: Physical Level and Line Level, The project IEEE 802: Sublevel LLC, Sublevel MAC and Physical Level.
- **Networks: Ethernet, Fast Ethernet and Gigabit Ethernet**
  Standard Ethernet and IEEE 802.3, the sublevel MAC, CSMA-CD access method, the physical level, Ethernet: 10 Mbps (10 Base-T), Fast Ethernet: 100 Mbps, Gigabit Ethernet: 1000 Mbps
- **Network devices**
  The typical devices of an Ethernet networks, Transceivers, Repeaters, Media converters, Hubs, Switches.

TELECOMMUNICATIONS – ICT

- **Structured wiring according to standard EIA/TIA 568A – ISO/IEC11801**
  What is the structured wiring, The wiring standards, Content and purpose of the standards, Topology of a structured wiring, Main elements and nomenclature, Horizontal wiring, Dorsal networks.
- **ProtocoXIs: NetBIOS, NetBEUI, TCP/IP, IPX/SP**
  The protocols of level 3, 4, 5, 6, 7, The interface NetBIOS, The protocol NetBEUI Netware protocols: IPX/SPX,

IPX protocol, SPX protocol, Internet protocols: TCP/IP, IP protocol, TCP protocol.

- **Intranet and diagnostics on the networks**
  What is an Intranet, Terminal emulation, Files transfer, Electronic Mail, World Wide Web, TCP/IP tools.
- **Architecture of a Peer-to-Peer network Operating System**
  General architecture, Redirector and File System, Support of multiple networks, NDIS architecture, TCP/IP architecture, Client and Server Peer architecture, Programming interfaces, Architecture and serial communications.
- **Architecture of a network Server Operating System**
  General architecture, NDIS specifications, Network protocols, Transport Driver Interface, Network services: Server, Network services: Workstation, Service DHCP, DNS and WINS.

Composed of TC74-MC: LAN structured cabling
This module shows the structure of the cabling of the LAN according to the standard EIA/TIA 568A and ISO/IEC 11801. It includes: Diagram of the structured cabling. Sockets RJ45 and for optical fibre. Patch panel Users' sockets
TC74-DS: Switching HUB

(Quantity 3) IEEE 802.3, 802.3u compatible. Transmission speed: 10/100 Mb/s.4 RJ45 ports. External power supply.
TC74-DM: Media Converter (Quantity 2)
Conversion from RJ45 (10Base-T) to optical fibre (10Base-FL). Connections: 1 x RJ45, 1 x ST (RX/TX). Compatibility with: cat. 3, 4, 5, optical fibre cable 62,5/125 ST. IEEE 802.3 compatible.

Documents / Resources

	DELORENZO DL TC74 Local Area Network LAN and Intranet [pdf] Instructions DL TC74 Local Area Network LAN and Intranet, DL TC74, Local Area Network LAN and Intrane t, Area Network LAN and Intranet, Network LAN and Intranet, LAN and Intranet, Intranet