

# Network Communications

## Chapter 8

Ethernet and IEEE 802.3 Networking  
Technology

# Ethernet (Virtual) Bus Topology

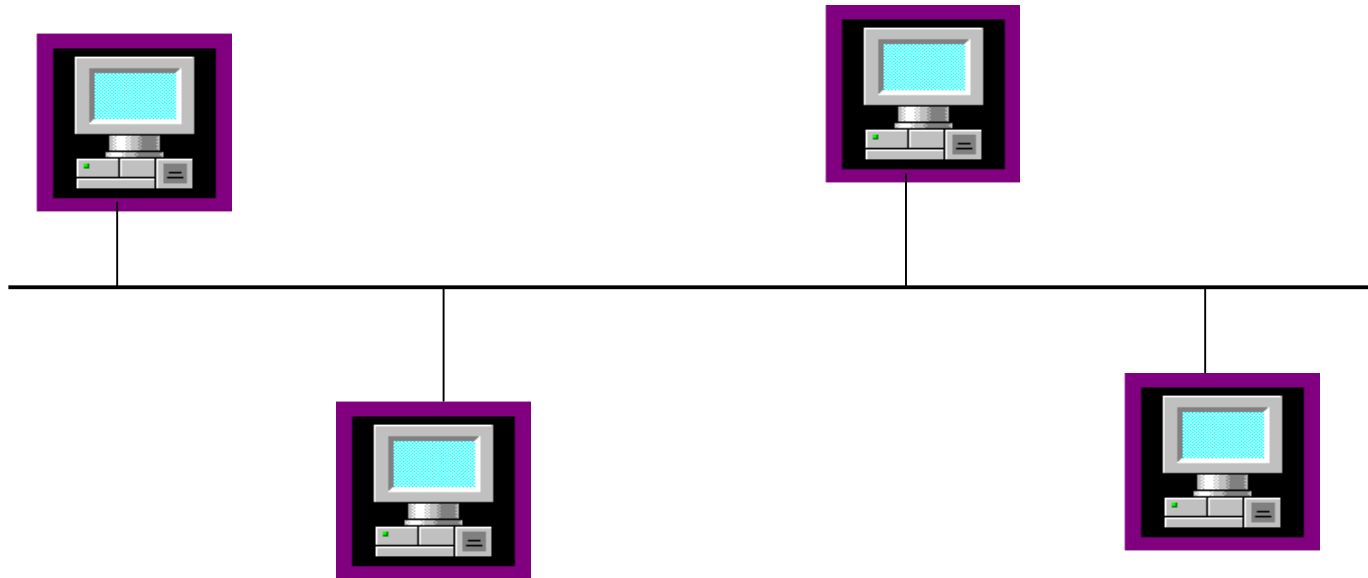


Figure 8.1

# Ethernet Reference Model

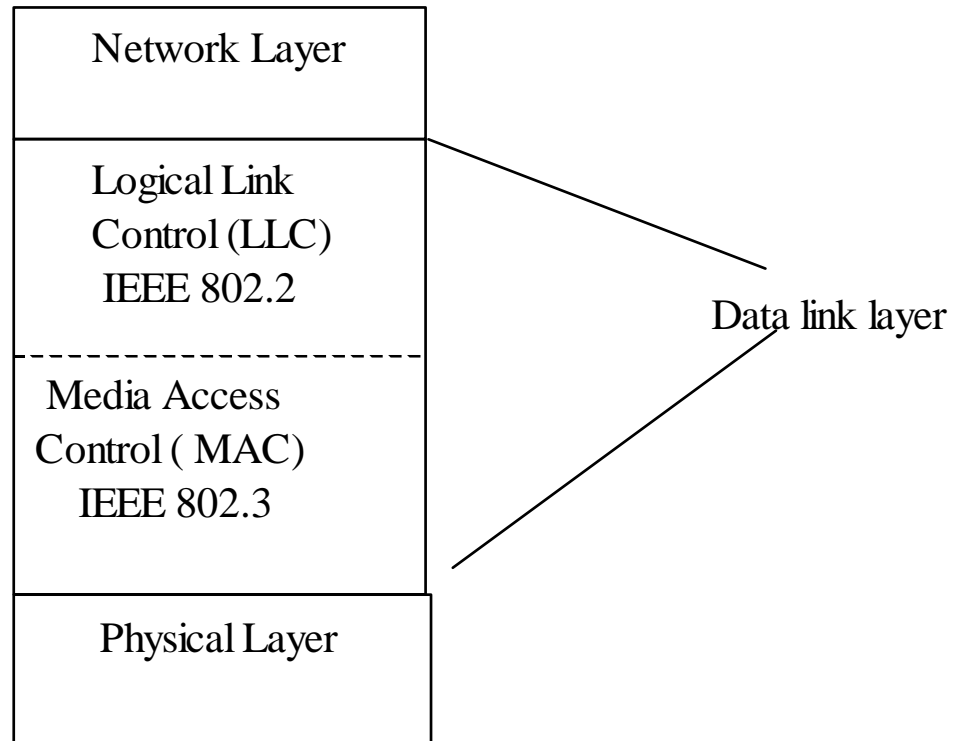


Figure 8.2

# CMSA/CD Flowchart

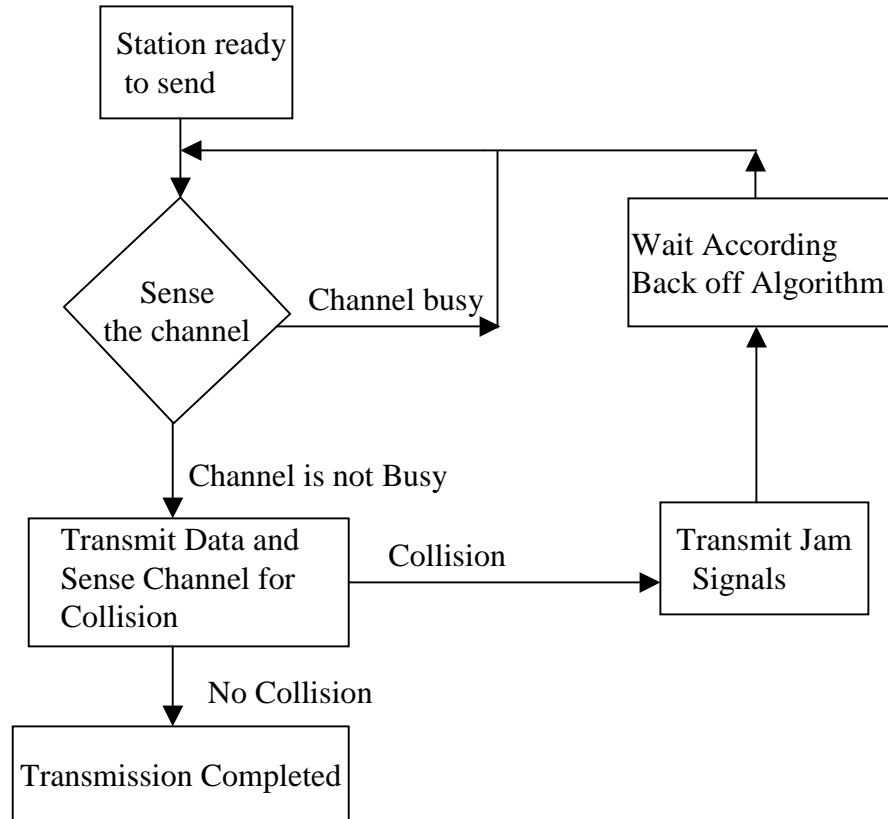


Figure 8.3

# IEEE 802.3 MAC and LLC Frame Formats

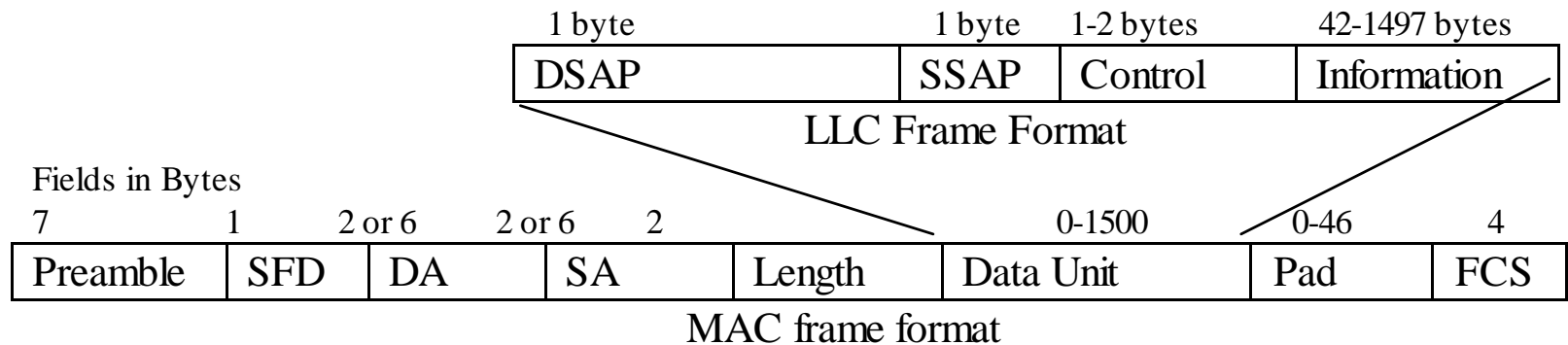
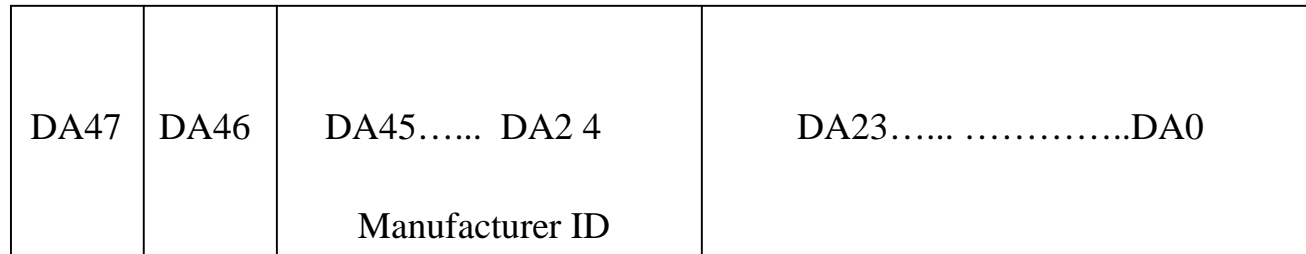
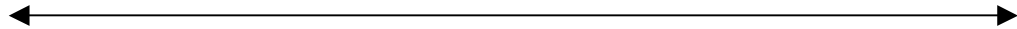


Figure 8.4

# Physical Address (MAC) Format

Burned into NIC ROM



- DA<sub>47</sub> – Multicast
- DA<sub>46</sub> – Universal Administrator
- DA<sub>45</sub> - DA<sub>24</sub> – Manufacturer ID
- DA<sub>23</sub> - DA<sub>0</sub> – Product Instance

Figure 8.5:

# Ethernet Characteristics

Data Rate	10 Mbits/sec
Encoding	Manchester
Slot Time or Propagation Delay	512 bit times
Interframe Gap	9.6 msec
Backoff Limit	10
Jam Size	32 bits
Maximum Size	1512 bytes
Minimum Frame Size	64 bytes

# Network Interface Card (NIC)

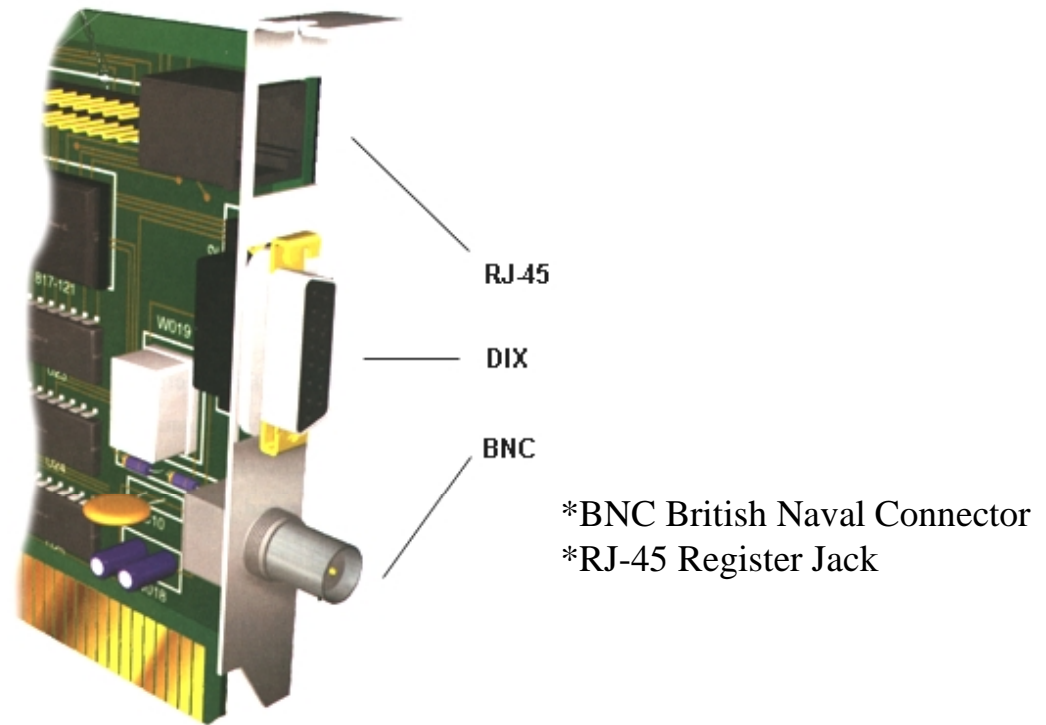


Figure 8.6



# ThinNet Components

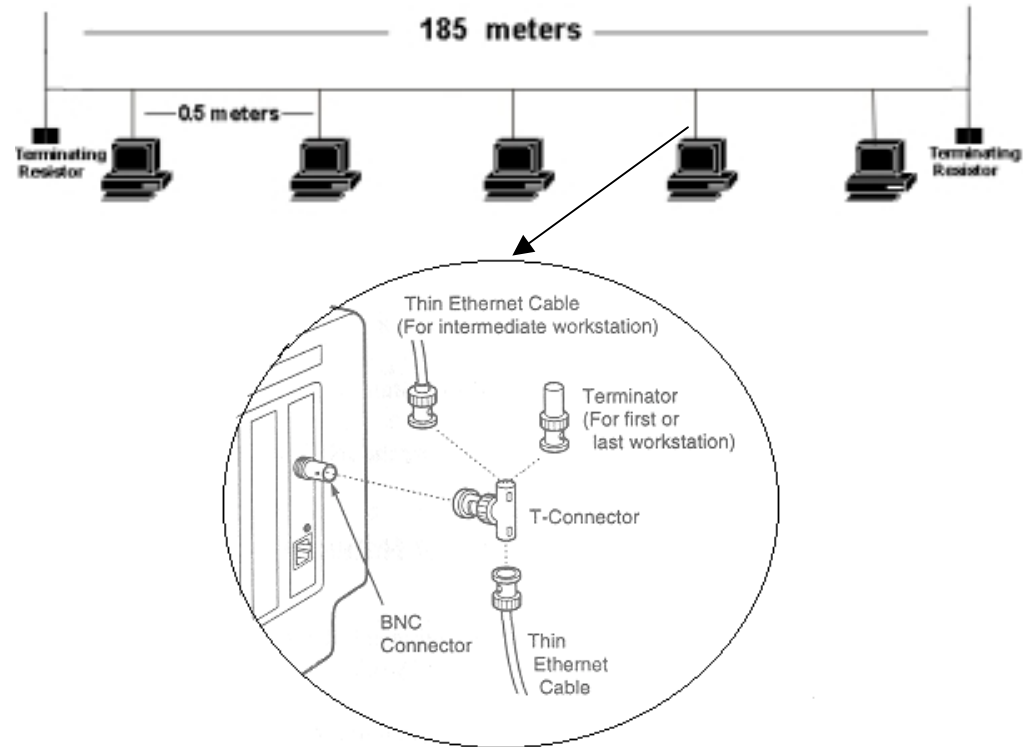


Figure 8.7

# ThickNet (10Base5)

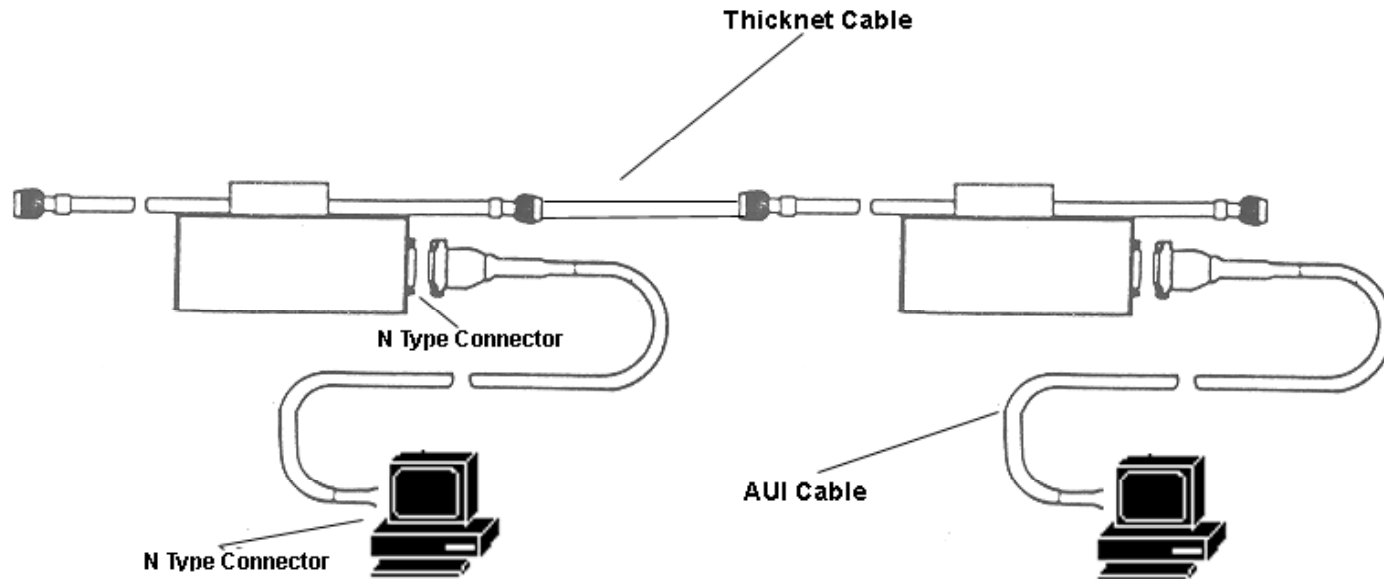


Figure 8.8

# ThickNet Transceiver



Figure 8.9

# Transceiver Architecture

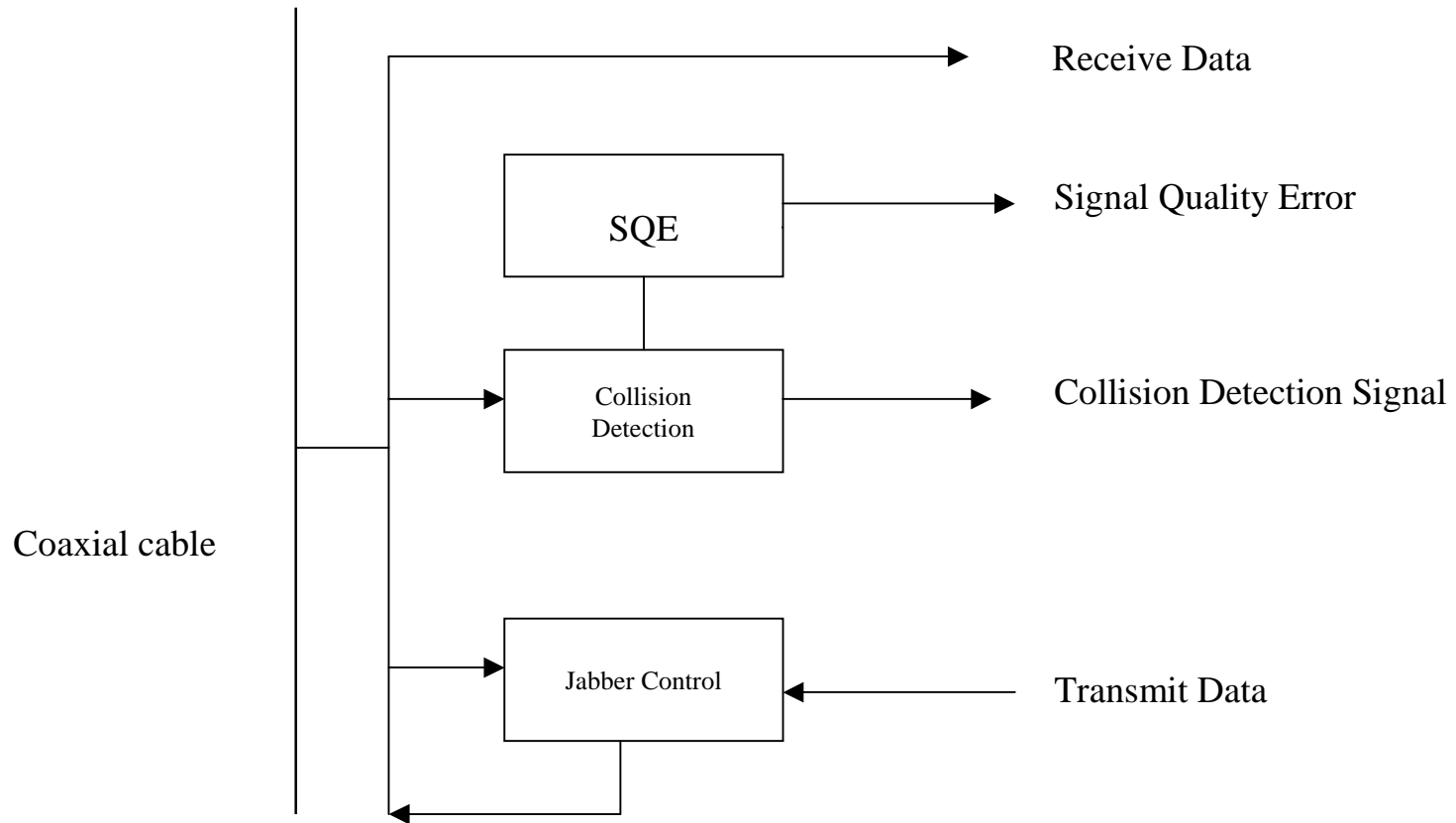


Figure 8:10

# 10BaseT

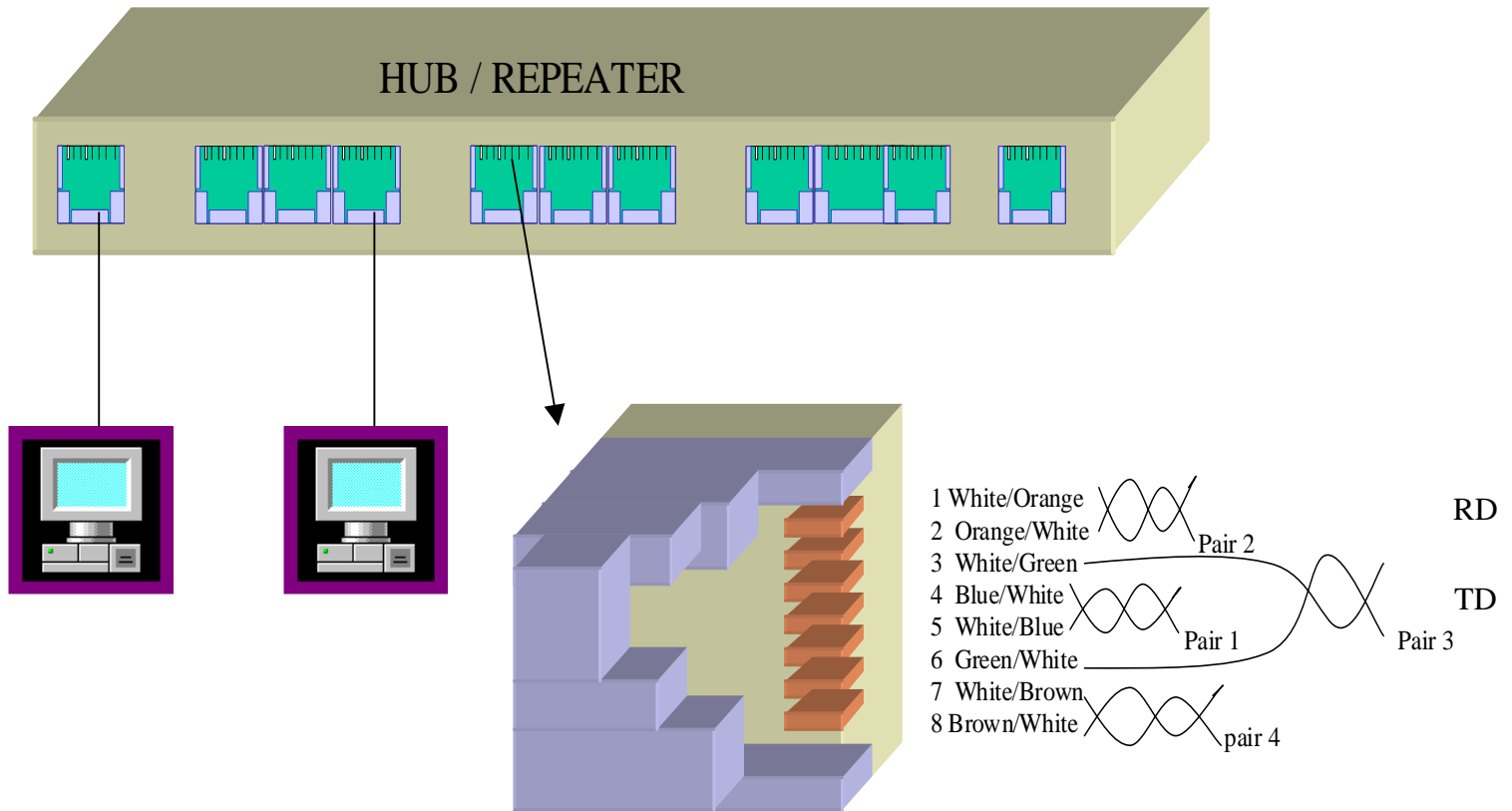


Figure 8.11