

# Ethernet Cabling Technologies



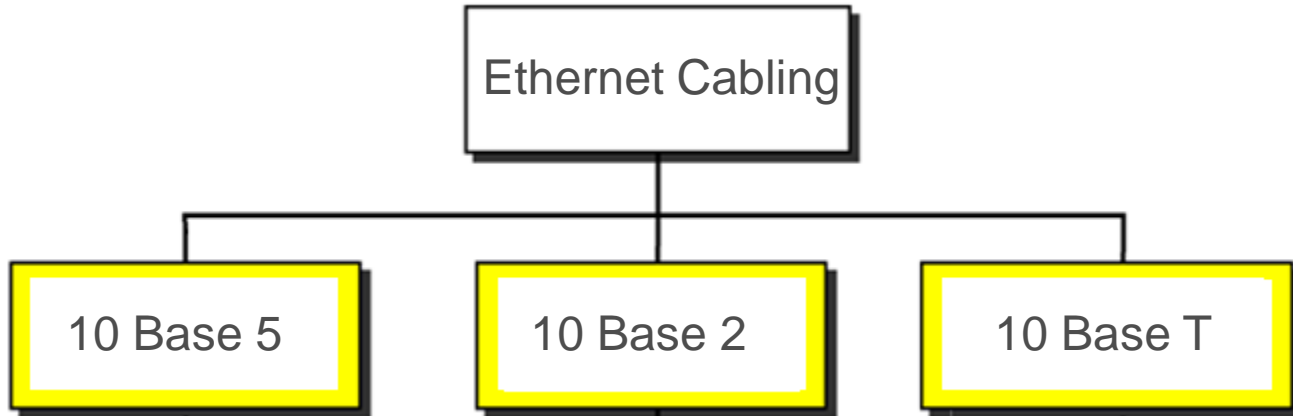
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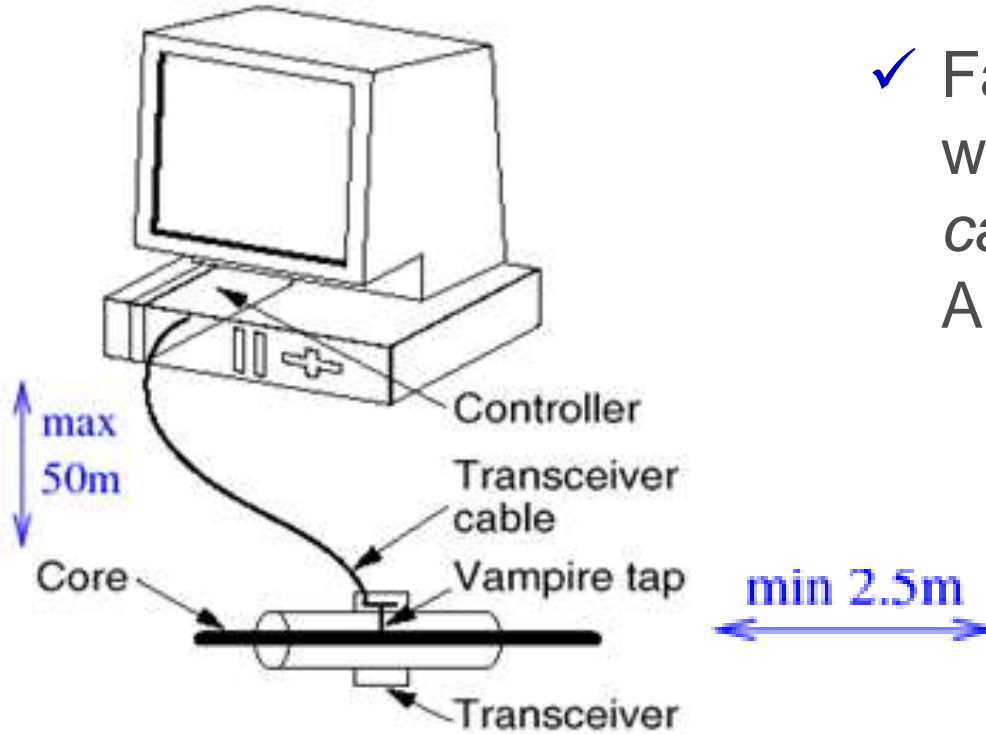
Government Arts and Science College, Avinashi - 641654

# Ethernet - Cabling Specifications

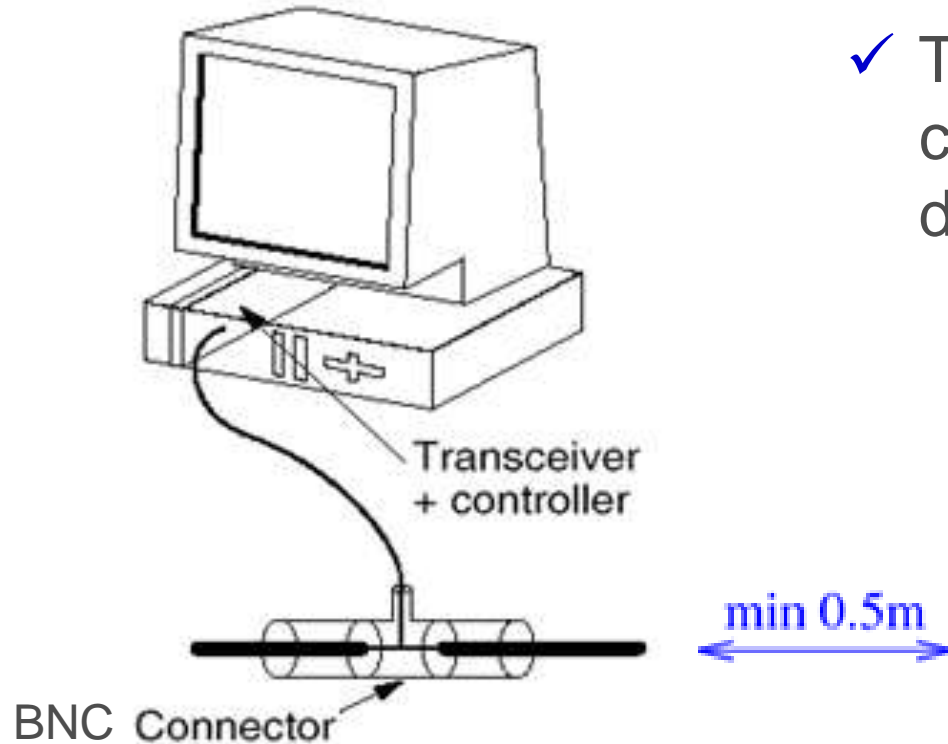


# Ethernet Technologies: 10Base5

- ✓ Fat coaxial cable (yellow) with *vampire taps* and *drop cables* (blue) to the hosts, AUI plugs

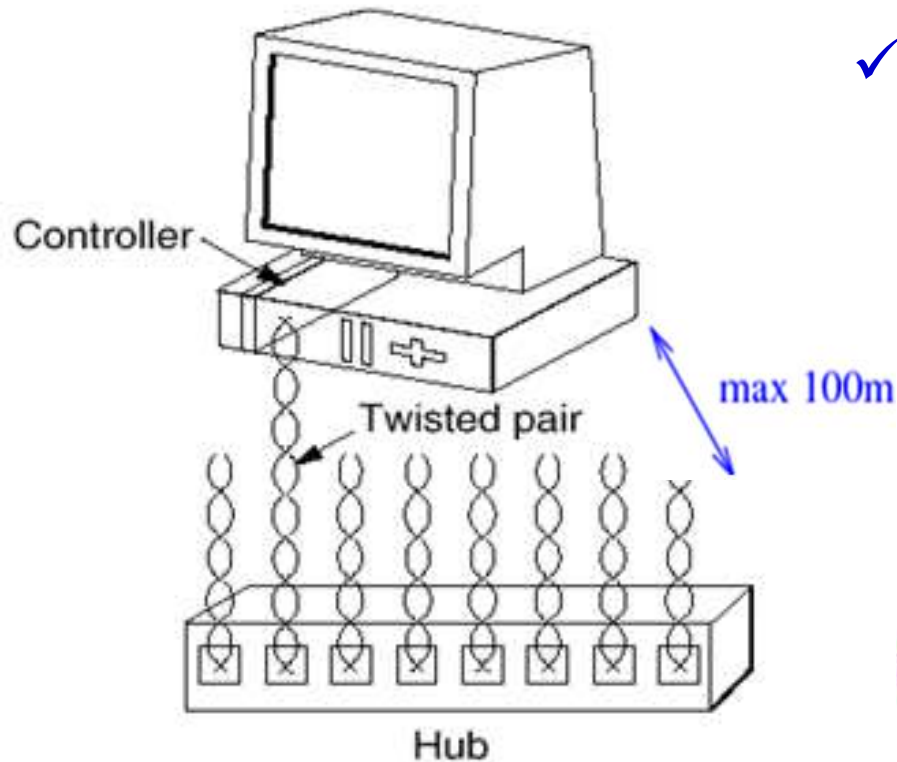


# Ethernet Technologies: 10Base2

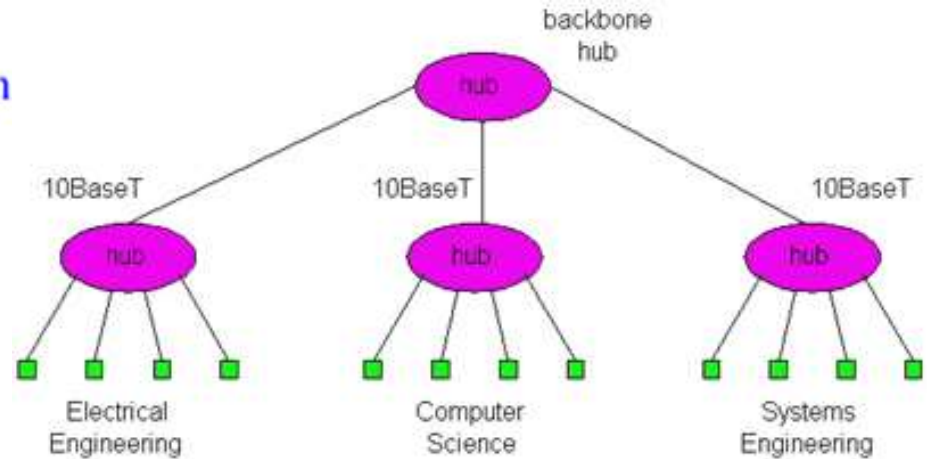


- ✓ Thinnet, simple coaxial cable, BNC connectors directly to the hosts

# Ethernet Technologies: 10BaseT



- ✓ Twisted pair (UTP), RJ45 plugs, each host connects to a central hub



# Ethernet – Cabling: 10Base - Series

<b>Name</b>	<b>Cable</b>	<b>Max. segment</b>	<b>Nodes/seg.</b>	<b>Advantages</b>
10Base5	Thick coax	500 m	100	Good for backbones
10Base2	Thin coax	200 m	30	Cheapest system
10Base-T	Twisted pair	100 m	1024	Easy maintenance
10Base-F	Fiber optics	2000 m	1024	Best between buildings

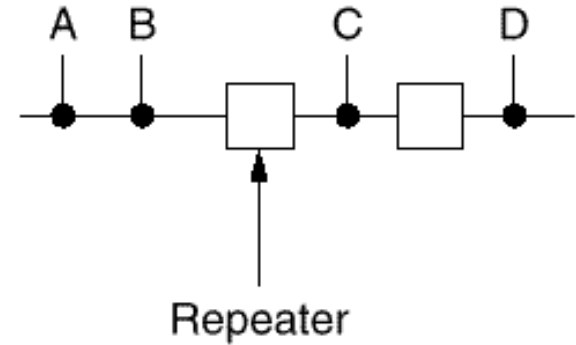
**Fig. 4-17.** The most common kinds of baseband 802.3 LANs.

# Ethernet – Cabling: 10Base - Series

	10BASE5 Ethernet	10BASE2 Cheaper net	10BASE-T Twisted-pair
Medium	coaxial cable 50ohm-10mm	coaxial cable 50ohms-5mm	2 simplex TP unshielded
Signals	10Mbps	10Mbps	10Mbps

# Ethernet – Cabling: 10Base - Series

- ✓ To form larger networks, multiple cables can be connected by repeaters.
- ✓ A repeater is a physical layer device. It receives, amplifies, and retransmits signals in both directions. As far as the software is concerned, a series of cable segments connected by repeaters is no different than a single cable.





# Ethernet – Cabling: 100Base - Series

100BaseT4	Twisted pair	100m	100Mb/s
100BaseT	Twisted pair	100m	100Mb/s
100BaseF	Fibre optic	2000m	100Mb/s
1000BaseT	Twisted pair	100m	1Gb/s

# Ethernet – Cabling: 100BaseT

- ✓ 100BaseT: Supports 100 Mbps data rate
- ✓ 100BaseT: Fast Ethernet
- ✓ Node with Hub: Twisted pair - Star Topology
- ✓ Hub can collect statistics to LAN administrators
- ✓ Minimum Packet Size

# Ethernet – Cabling: Gigabit

- ✓ Use standard Ethernet frame format
- ✓ Allows for point-to-point links and shared broadcast channels
- ✓ In shared mode, CSMA/CD is used; short distances between nodes to be efficient
- ✓ Uses hubs, called here “Buffered Distributors”
- ✓ Full-Duplex at 1 Gbps for point-to-point links

# References

- ✓ Books: Data communication and Networking, Behrouz A Forouzan, Fourth edition
- ✓ Computer Networks, Andrew S. Tanenbaum, 4th edition, PHI
- ✓ Data Communication and Networks, Achyut Godbole, 2007, TMH.
- ✓ Computer Networks: Protocols, Standards, and Interfaces, Uyles Black, 2nd ed, PHI
- ✓ Various relevant websites

Thank You