

EXPERIMENT NO: 2  
DATE: 21-7-2025

# STUDY OF NETWORK CABLES

AIM: Study of different type of Network cable

a) understand different types of network cable

Different types of cable used in networking are

1. Unshielded Twisted Pair (UTP) cable
2. Shielded Twisted Pair (STP) cable
3. Coaxial cable
4. Fibre optic cable

CABLE TYPE	CATEGORY	MAXIMUM DATA TRANSMISSION	ADVANTAGES/ DISADVANTAGES	APPLICATION / USE
UTP	Category 3	10 bps	Advantages • cheaper in cost • Easy to install as they have a smaller overall diameter	10Base T-Ethernet
	Category 5	Upto 100 mbps	Disadvantages • More prone to EMI - Electro-magnetic interference & noise	Fast Ethernet
	Category 5e	1Gbps		Gigabit Ethernet
STP	Category 6/6a	10Gbps	Advantages • shielded • Faster than UTP • Less susceptible to noise and interference	Gigabit Ethernet, 10G Ethernet (55m) widely used in data centres
SSTP	Category 7	10Gbps	Disadvantages • Expensive • Greater installation effort	Gigabit Ethernet, 10G Ethernet (100m)



Coaxial Cable	RG-6 RG-59 RG-11	10-100 Mbps	Advantages <ul style="list-style-type: none"> <li>• High bandwidth</li> <li>• Immune to Interference</li> <li>• Low Loss</li> <li>• Bandwidth</li> <li>• versatile</li> </ul>	Speed of signal is 500m Television network High speed internet connections
Fibre optics cable	Single mode Multi mode	100 Gbps	Advantages <ul style="list-style-type: none"> <li>• High speed</li> <li>• High bandwidth</li> <li>• High security</li> <li>• Long distance</li> </ul> Disadvantages <ul style="list-style-type: none"> <li>• Expensive</li> <li>• Requires Skilled Installers</li> </ul>	Maximum distance of fibre optics cable is around 100 metres

### STUDENT OBSERVATION :

1. Difference between Cross cable and straight cable

A straight cable connects different devices, while cross cable connects the similar devices by swapping transmit and receive wires.

2. which type of cable is used to connect two pc?

Cross cable is used to connect two PCs

3. which cable is used to connect a router to pc?

Straight cable is used to connect a router to a PC

4. Find the category of twisted pair cables used to connect the PC to network socket?

Category 5e and category 6 are used to connect the PC to network socket.