



Experiment - 1

Student Name: cusz UID:

Branch: CSE Section/Group:

Semester: 4 Date of Performance: Subject

Name: Computer Networks Lab Subject Code: 20CSP-257

1. Aim/Overview of the practical:

Study of different types of Network cables and practically implement the cross-wired cable and straight through cable using clamping tool.

2. Which logistics used:

RJ-45 connector, wire and clamping tool

3. Different types of Transmission medias:

Transmission Media is broadly classified into the following types:

1. Guided Media:

It is also referred to as Wired or Bounded transmission media. Signals being transmitted are directed and confined in a narrow pathway by using physical links.

There are 3 major types of Guided Media:

(i) Twisted Pair Cable -

It consists of 2 separately insulated conductor wires wound about each other. Generally, several such pairs are bundled together in a protective sheath. They are the most widely used Transmission Media.

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Twisted Pair is of two types:

Unshielded Twisted Pair (UTP):

UTP consists of two insulated copper wires twisted around one another. It is used for telephonic applications.

Shielded Twisted Pair (STP):

This type of cable consists of a special jacket (a copper braid covering or a foil shield) to block external interference.

It is used in fast-data-rate Ethernet and in voice and data channels of telephone lines.

(ii) Coaxial Cable –

It has an outer plastic covering containing an insulation layer made of PVC or Teflon and 2 parallel conductors each having a separate insulated protection cover.

Cable TVs and analog television networks widely use Coaxial cables.

(iii) Optical Fibre Cable -

It uses the concept of reflection of light through a core made up of glass or plastic. The core is surrounded by a less dense glass or plastic covering called the cladding. It is used for the transmission of large volumes of data.

2. Unguided Media:

It is also referred to as Wireless or Unbounded transmission media. No physical medium is required for the transmission of electromagnetic signals. It is mainly of three types:

- (i) Radio Waves: These are easy to generate and can penetrate through buildings.
- (ii) **Micro Waves:** It is a line-of-sight transmission i.e., the sending and receiving antennas need to be properly aligned with each other.
- (iii) **Infrared Waves**: Infrared waves are used for very short distance communication. They cannot penetrate through obstacles.

4. Steps to create the connector to make an ethernet connection possible:

Step 1: Strip the cable jacket about 1.5 inch down from the end.

Step 2: Spread the four pairs of twisted wire apart. For Cat 5e, you can use the pull string to strip the jacket farther

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down if you need to, then cut the pull string. Cat 6 cables have a spine that will also need to be cut.

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Step 3: Untwist the wire pairs and neatly align them in the T568B orientation. Be sure not to untwist them any farther down the cable than where the jacket begins; we want to leave as much of the cable twisted as possible.

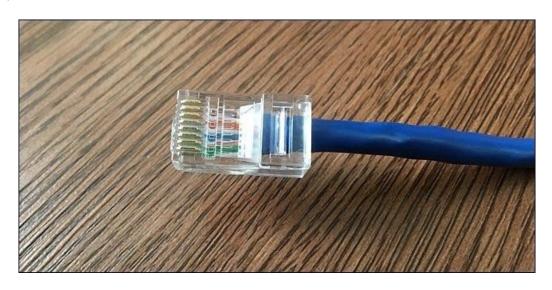
Step 4: Cut the wires as straight as possible, about 0.5 inch above the end of the jacket.

Step 5: Carefully insert the wires all the way into the modular connector, making sure that each wire passes through the appropriate guides inside the connector.

Step 6: Push the connector inside the crimping tool and squeeze the crimper all the way down.

Step 7: Repeat steps 1-6 for the other end of the cable.

Step 8: To make sure you've successfully terminated each end of the cable, use a cable tester to test each pin. When you're all done, the connectors should look like this:



5. Result:

Cross and Straight Cable Prepared

Learning outcomes (What I have learnt):

1. Learnt about different types of transmission media







- 2. Learnt about ethernet cables
- 3. Learnt how to make an ethernet connection possible

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			