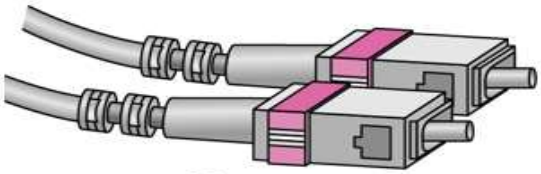
NIELIT Gorakhpur

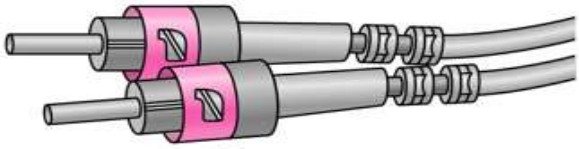
Course Name: O Level (2nd Sem) **Subject: ICT**
Topic: Optical Fiber Cable **Date: 27-05-20**

Fibre Optic Cable Connectors:

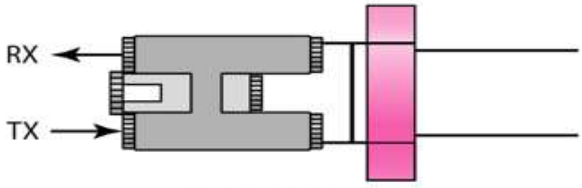
There are three types of connectors for fibre-optic cables:



SC connector



ST connector



MT-RJ connector

The Subscriber Channel(SC) connector is used for cable TV. It uses push/pull locking system. The Straight-Tip(ST) connector is used for connecting cable to the networking devices. MT-RJ is a connector that is the same size as RJ45.

Advantages of Fibre Optic Cable:

- Higher bandwidth
- Less signal attenuation
- Immunity to electromagnetic interference
- Resistance to corrosive materials
- Light weight
- Greater immunity to tapping

Disadvantages of Fibre Optic Cable:

- Installation and maintenance
- Unidirectional light propagation
- High Cost

Applications of Fibre Optic Cable:

- Often found in backbone networks because its wide bandwidth is cost-effective.
- Some cable TV companies use a combination of optical fibre and coaxial cable thus creating a hybrid network.
- Local-area Networks such as 100Base-FX network and 1000Base-X also use fibre-optic cable.
- Fiber optics is frequently used in a variety of medical instruments to provide precise illumination.
- Other medical applications for fiber optics include X-ray imaging, endoscopy, light therapy and surgical microscopy.

Fiber Light Source:

A fibre light source is used to inject light into a fibre optic cable for the purpose of testing it. They come in two basic varieties: light emitting diodes (LEDs) and laser diodes. They're further differentiated by the wavelength they produce and the type of cable they test.

LEDs are low cost, slower speed, easy to use, multimode-only, and have a wide output pattern. Because LEDs produce a less concentrated light than lasers and have a much lower power output than lasers, they're difficult to couple into fibres, limiting them to multimode fibres. LEDs have less bandwidth than lasers and can achieve a maximum throughput of 1 Gbps.

Laser diodes are higher cost and faster speed, allow single-mode or multimode, and have a narrow output pattern. Lasers can achieve throughput up to and beyond 10 Gbps.