

# CECS 5460

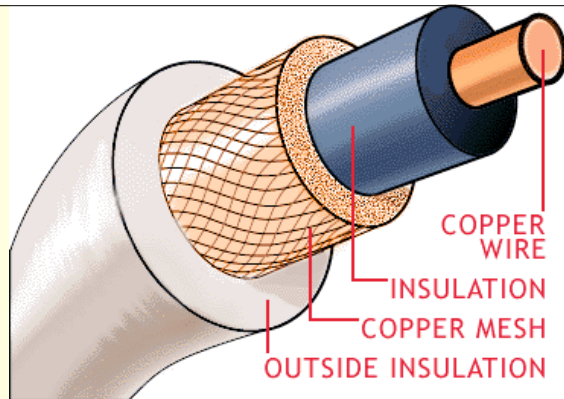
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## Topics

- Cables
  - Types of
    - Coaxial, Twisted Pair, Fiber
  - Important Issues
  - Standards

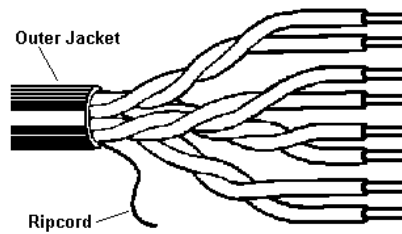
# Coaxial



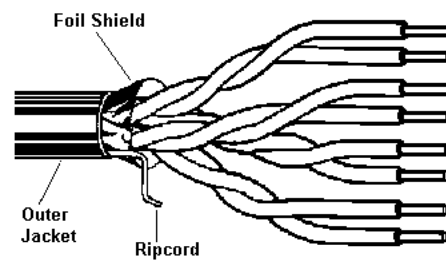
# Twisted Pair



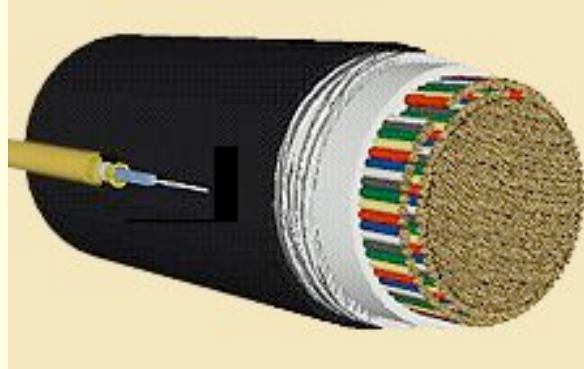
## UTP Cable (4-pair)



## ScTP Cable (4-pair)



## Fiber Optic



## Distance and Bandwidth

<b>Cable</b>	<b>Typical Bandwidths and Distances</b>
Category 5 twisted pair	10-100Mbps, 100 m
Category 5e twisted pair	10-1000Mbps, 100 m
50-ohm coax	10-100Mbps, 200 m
75-ohm coax	10-100Mbps, 500 m
Multimode fiber	100 Mbps, 2 km
Single-mode fiber	100-2400Mbps, 40km

## TP CAT1 - CAT7

Category	Maximum data rate	Usual application
<b>CAT 1</b>	Up to 1 Mbps (1 MHz)	analog voice (POTS) Integrated Services Digital Network Basic Rate Interface in ISDN Doorbell wiring
<b>CAT 2</b>	4 Mbps	Mainly used in the IBM Cabling System for Token Ring networks
<b>CAT 3</b>	16 Mbps	Voice and data on 10BASE-T Ethernet
<b>CAT 4</b>	20 Mbps	Used in 16 Mbps Token Ring Otherwise not used much
<b>CAT 5</b>	100 Mbps 1000 Mbps (4 pair)	100 Mbps TPDDI 155 Mbps ATM No longer supported; replaced by 5E
<b>CAT 5e</b>	1000 Mbps (10000 Mbps prototype)	100 Mbps TPDDI 155 Mbps ATM Gigabit Ethernet Offers better near-end crosstalk than CAT 5
<b>CAT 6</b>	Up to 400 Mhz	Super-fast broadband applications Most popular cabling for new installs
<b>CAT 6e</b>	Up to 625 MHz (field-tested to 500 MHz)	Support for 10 Gigabit Ethernet (10GBASE-T)
<b>CAT 7</b>	600-700 MHz 1.2 GHz in pairs with Siemon connector	Full-motion video, Teleradiology, Government and manufacturing environments, Shielded system

## EIA/TIA Standard 568B

- <http://www.netspec.com/helpdesk/wiredoc.html>

