Media

- Ordinary wire
- Coaxial cable - RG-58
- Twisted-pair wire - Category 5, Category 6
- Fiber optic cable - single-mode, multimode, wave division multiplexing
- Radio wave - 10^4 - 3×10^6 Hz
- Microwave wave - 10^9 - 30×10^9 Hz
- Infrared - $10^{11} - 10^{14}$ Hz

Selection Criteria

- Bandwidth supported
- Noise immunity
- Attenuation
- Price
- Flexibility
- Connection mechanisms

Comparison

Medium	Bits/Sec	Price
Plain wire	10,000/1 km	$.01/foot
Twisted pair	100 Mbps/100 m	$.05/foot
Coaxial cable	2000 Mbps/1 km	$.50/foot
Fiber Optic	16 Gbps/10 km	$2.00/foot
Radio	50 Mbps/100 m	free
Microwave	1 Mbps/1 km	free
Infrared	1 Mbps/5 m	free

Facts

- Fiber optic cable has attenuation losses of 0.2 dB/km; for twisted pair the value is 24 dB/100 m.
- Fiber optic cable has a capacity of 25,000 GHz.
- Lower radio ($10^4 - 10^6 Hz$) frequencies will pass through objects.
- Higher frequencies attenuate more quickly.
- Higher frequencies are subject to greater noise and distortion impacts.
- Satellite uses microwave but has at 0.25 second round-trip time.