Electromagnetic Spread Spectrum

By

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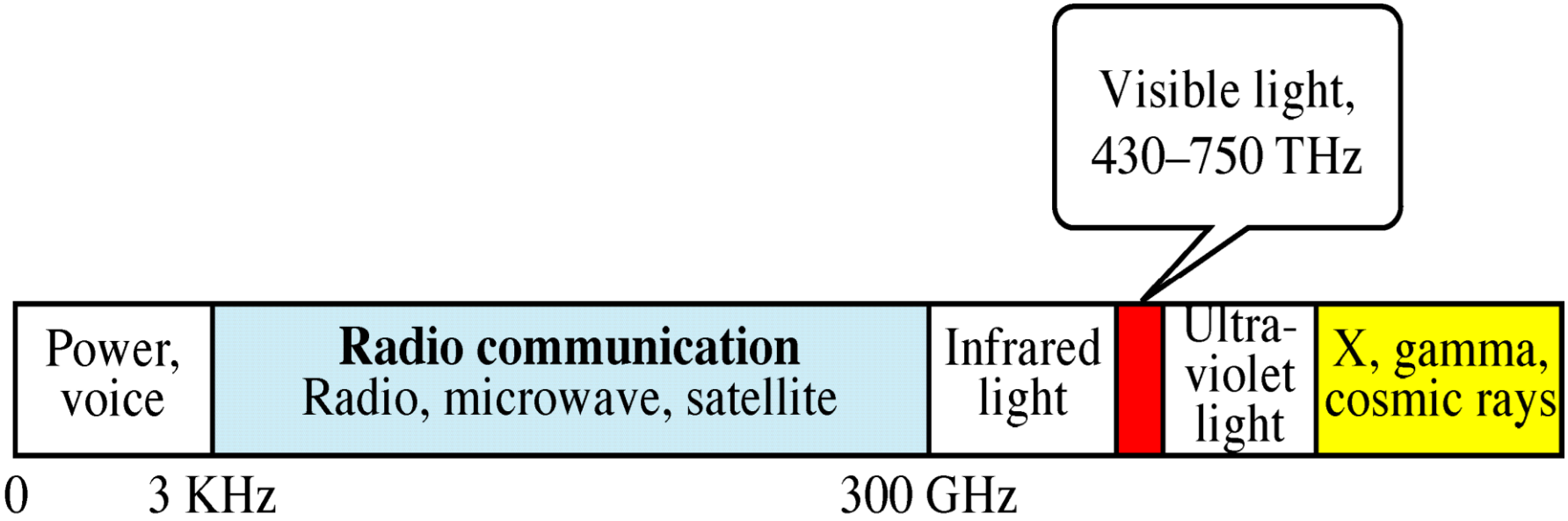
Electro Magnetic Waves

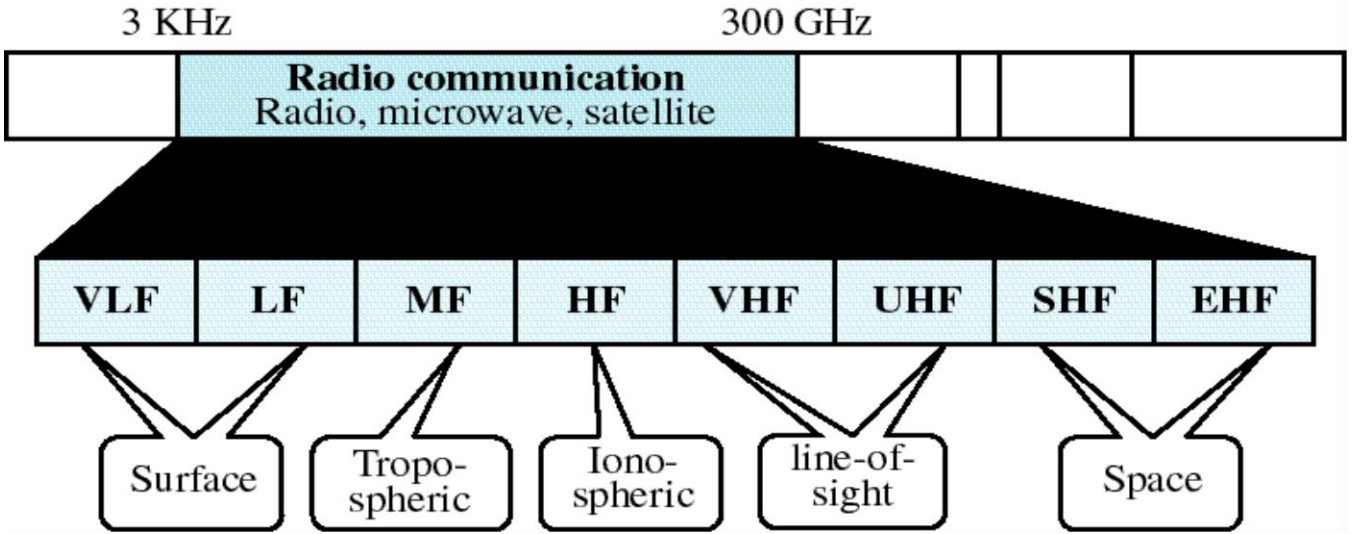
- ✓ When electrons move, they create electromagnetic waves that can propagate through the space
- ✓ In vacuum, all electromagnetic waves travel at the speed of light
- ✓ Light speed = Wavelength x Frequency = 3 x 108 m/s = 300,000 km/s
- ✓ In copper or fiber the speed slows down to about 2/3 of this value

Electromagnetic Spectrum



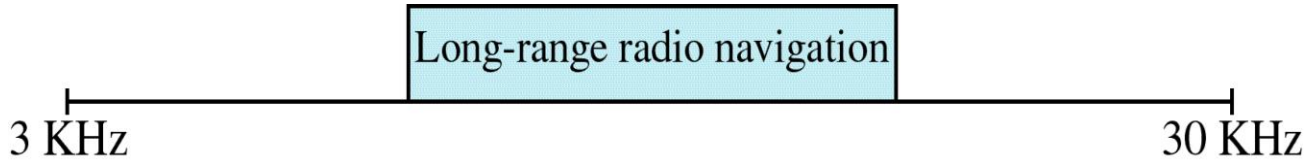
Radio Communication

VLF	Very low frequency	VHF	Very high frequency
LF	Low frequency	UHF	Ultra high frequency
MF	Middle frequency	SHF	Super high frequency
HF	High frequency	EHF	Extremely high frequency

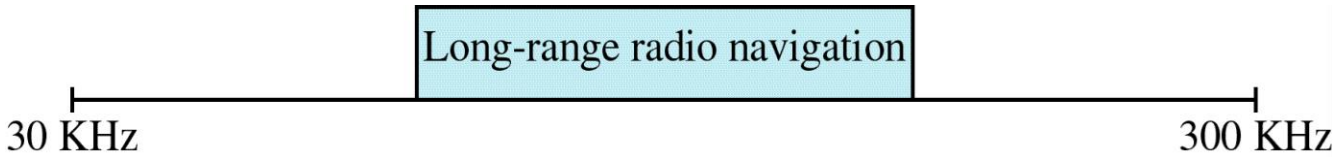


VLF and LF

VLF

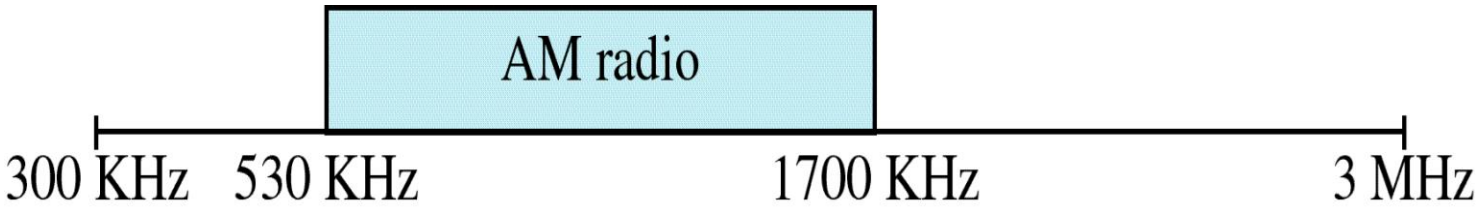


LF

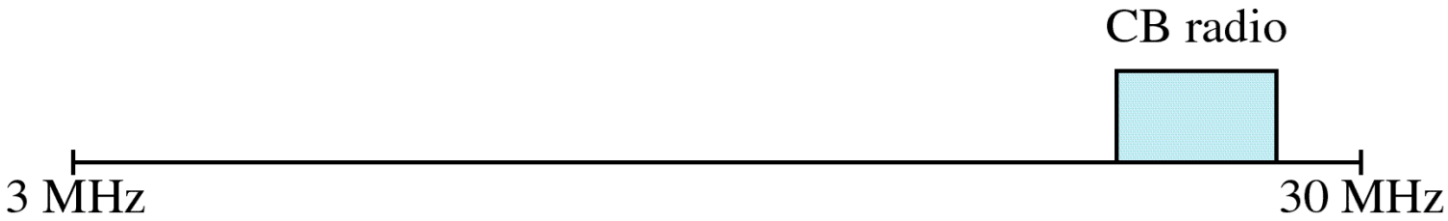


MF and HF

MF

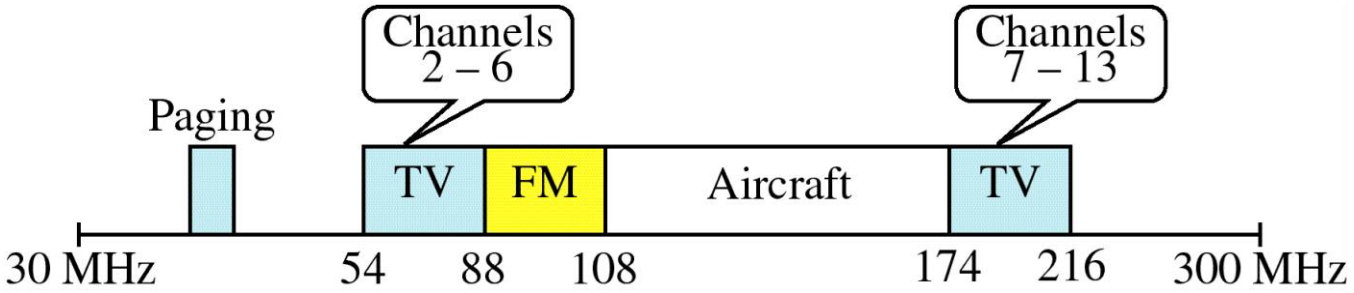


HF

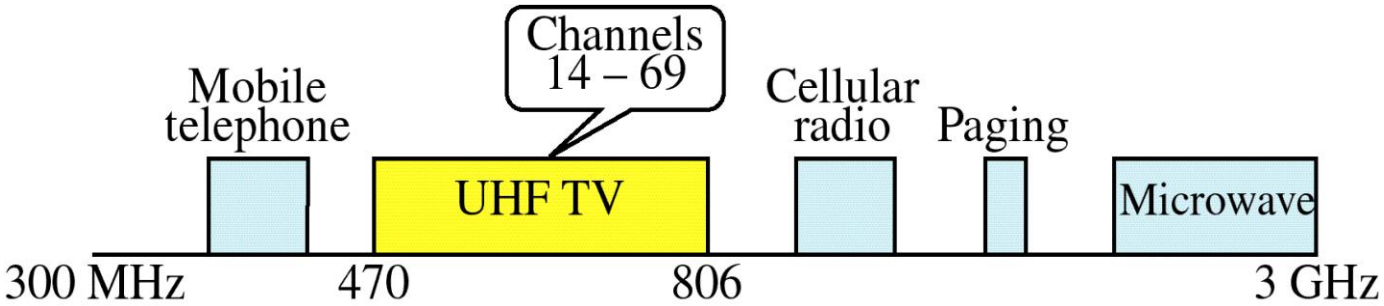


VHF and UHF

VHF

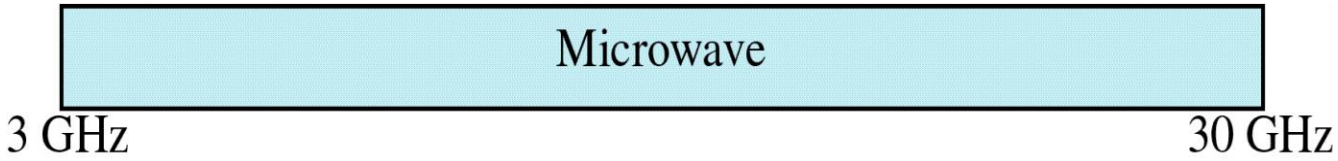


UHF

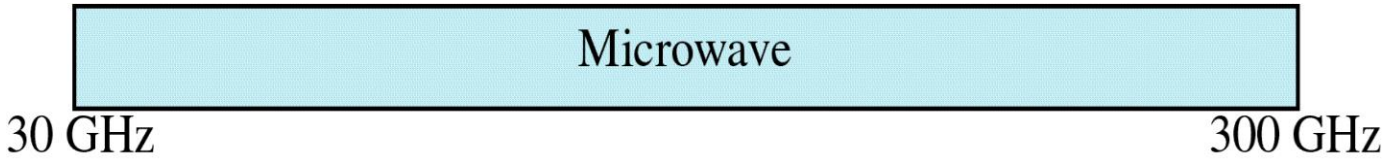


SHF and EHF

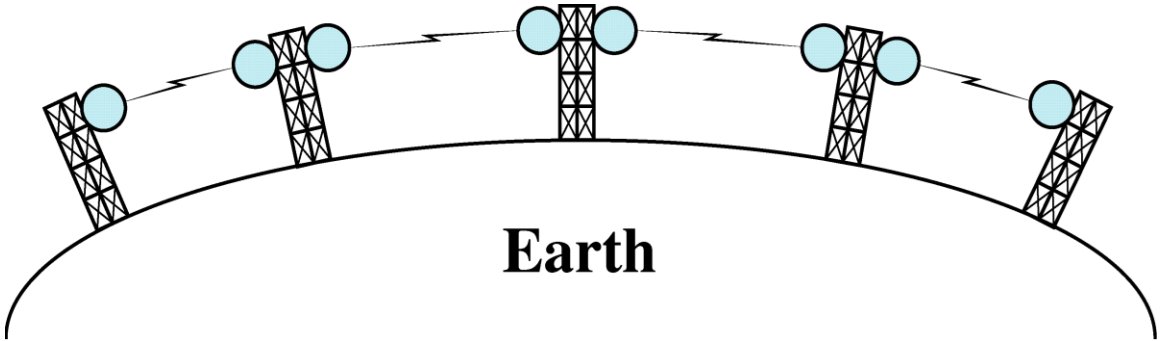
SHF



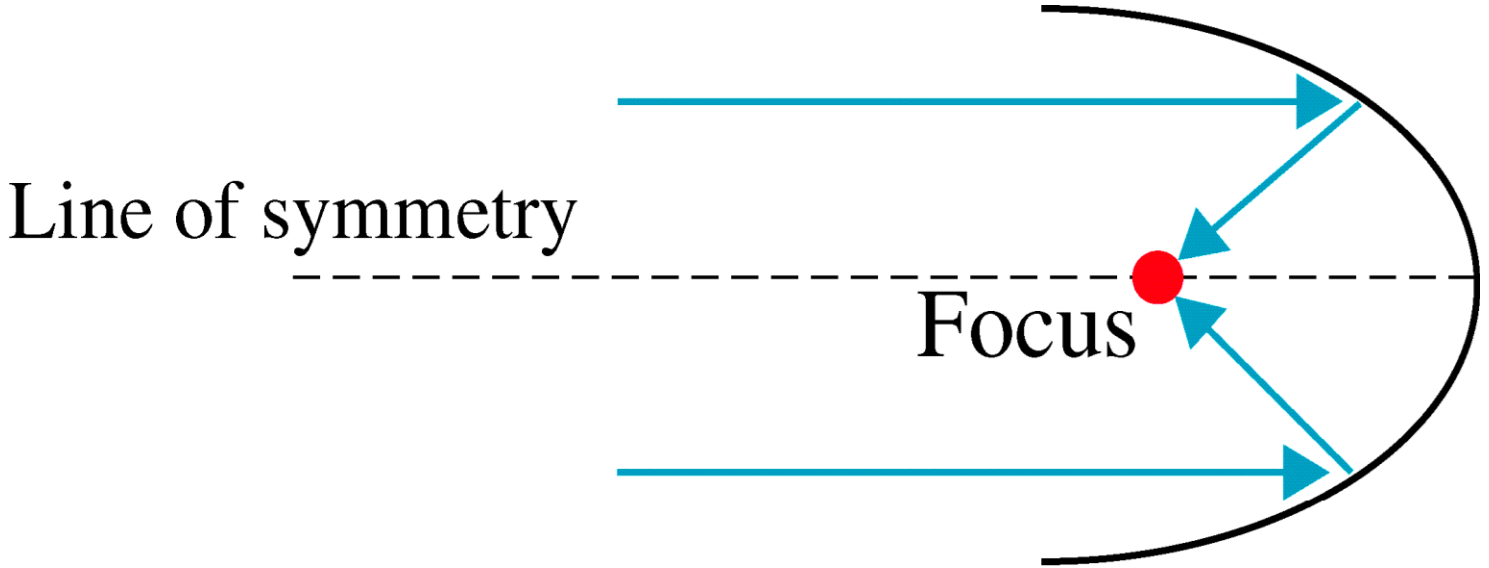
EHF



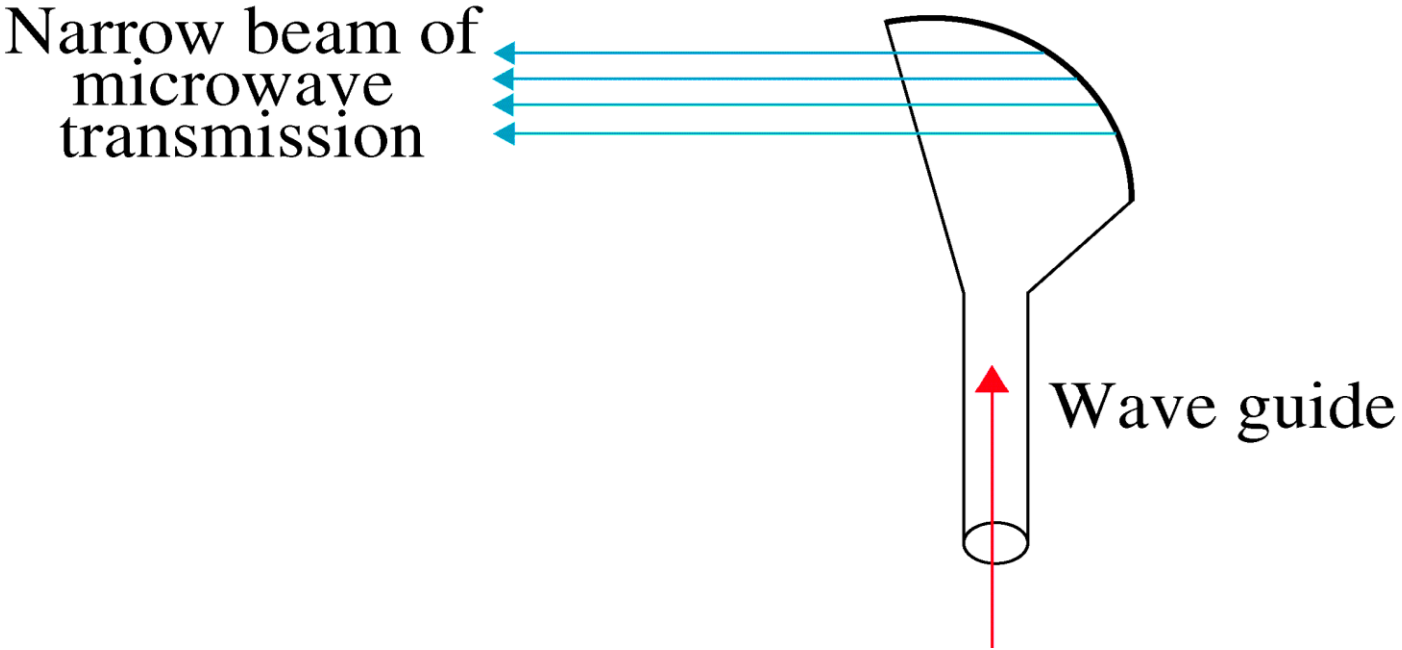
Terrestrial Microwave



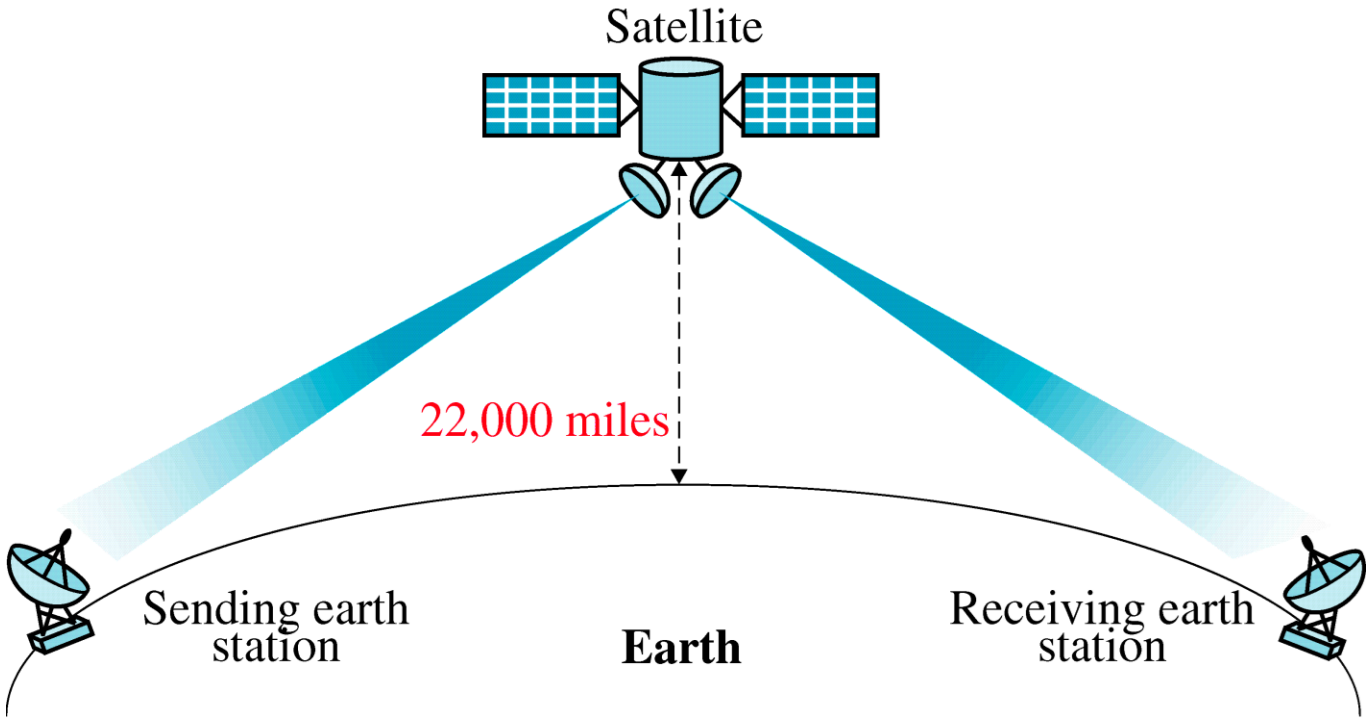
Parabolic Dish Antenna



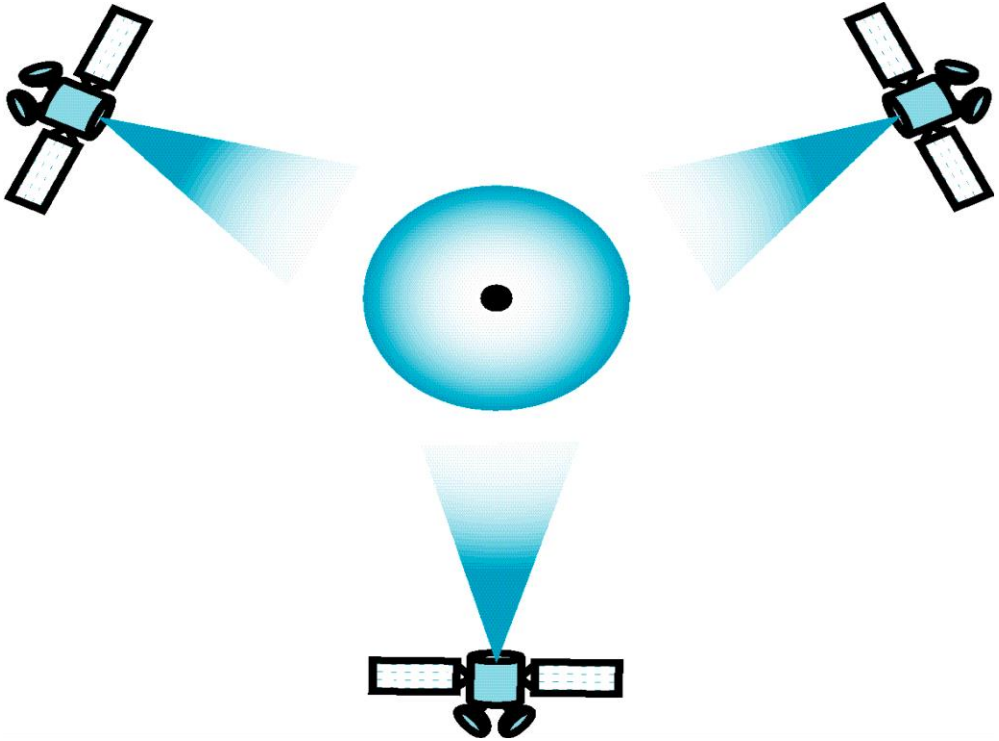
Horn Antenna



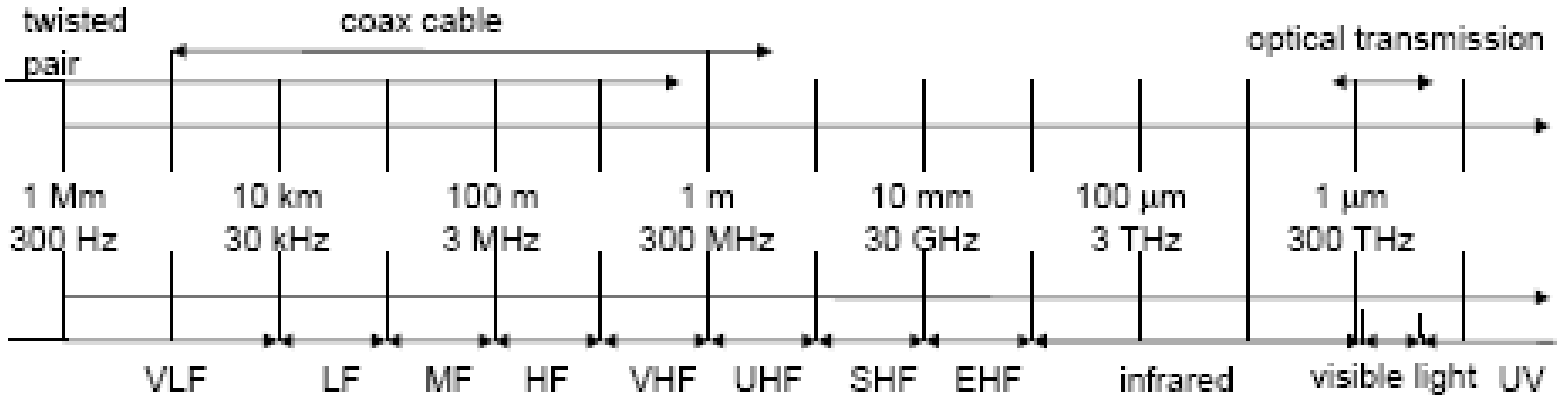
Satellite Communication



Geosynchronous Orbit



Guided Transmission Media



References

- ✓ Books:
  - ✓ Data communication and Networking, 4th Edition, Behrouz A Forouzan
  - ✓ Computer Networks, 4th Edition, Andrew S. Tanenbaum

- ✓ Various relevant Websites

Thank You