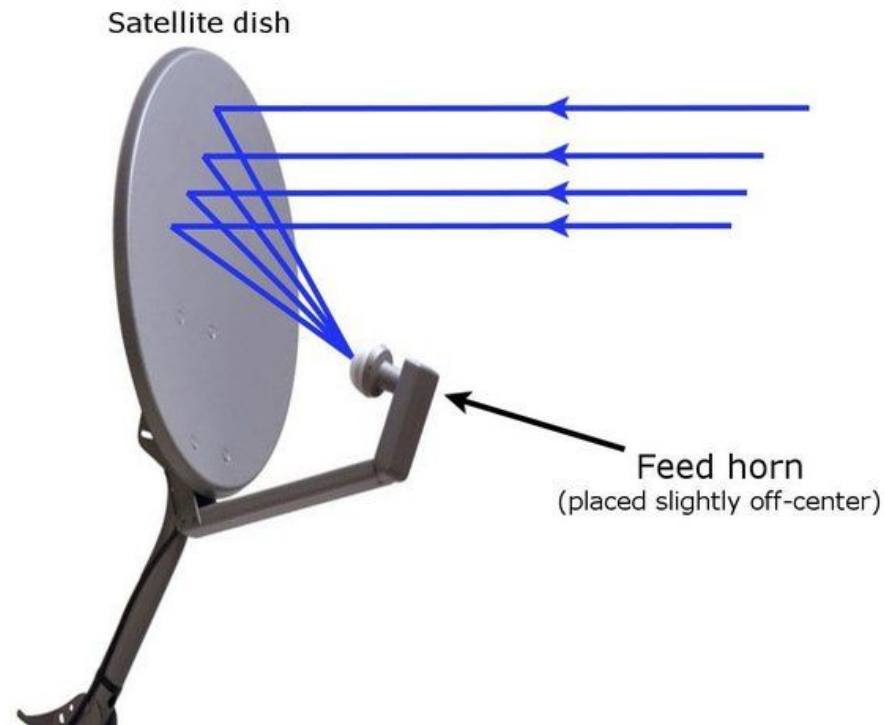


# Antenna

- An antenna is a metallic structure that captures and/or transmits radio electromagnetic waves.
- Antennas come in all shapes and sizes from little ones that can be found on your roof to watch TV to really big ones that capture signals from satellites millions of miles away.



# Types of Antenna

The three major types of Antenna based on the direction are

- Omni-directional antenna.
- Semi-directional antenna.
- Directional antenna.

# Omni-directional antenna

- The Omni-directional antenna radiations radio power equally in all the directions. The power emitted is perpendicular to the axis.
- It is commonly used in applications that require communication with multiple devices.

## **Applications:-**

- Radio and television broadcast.
- Cellular telephone sets and wireless routers.

# Semi-directional antenna

- Semi-directional antennas radiate the signal to a single, particular direction for communication from one point to another.
- They can connect both the indoor and outdoor communication for both small area and large distance coverage.
- Such as in Hallways/Corridors, Wireless ISPs, PTP & PTMP Bridging, since in all these mentioned spaces a specific directional coverage is required.
- Point-to-point microwave (PTP)
- Point-to-multipoint microwave (PTMP)

# Directional antenna

- Highly directional antennas are also used for directing signals from one point to another but they have a narrow beam with a high focus.
- They can reach much larger distances and thus are called Highly Directional antennas, and are used in outdoor areas.
- For example from one building to another like in a huge office, university area.

# GPS

- The global positioning system (GPS) is a network of satellites and receiving devices used to determine the location of something on Earth.
- Some GPS receivers are so accurate they can establish their location within one centimeter (0.4 inches).

Parameters of Comparison	PDA (Personal Digital Assistant)	Smartphone
Meaning	PDA works as a small digital assistant that can save information like dates, contact numbers, and schedules.	Smartphones are new digital devices that do the work of a PDA as well as a mobile phone using just one firmware.
Features	A PDA has fewer features than a smartphone does.	A smartphone has more features than a PDA, such as gaming and syncing options, as well as a built-in camera.
Uses	A PDA can be used for note-taking, planning, organizing, and scheduling.	A smartphone can be used for a variety of purposes such as making calls, browsing the net, watching videos, etc.
Touch screen	A PDA is a small mobile device that commonly has a hardware keyboard and no touch screen.	Smartphones have a touch screen that works faster than the latter.
Phone call options	A PDA cannot be used to make phone calls.	A smartphone can be used to make phone calls.
Availability	Nowadays, PDAs are not used as much as they were used before.	Smartphones have now replaced PDAs and are used widely by people across the world.

# POCKET WIRELESS SCANNER

- A wireless scanner is a handheld electronic device used to scan a sticker containing a barcode.
- The device emits a laser beam that scans the barcode, providing you with valuable data, such as price and inventory levels.
- Wireless scanners offer a number of important advantages for both employees and their employers.





# Advantages of Wireless Barcode Scanners

- Remote Capabilities
- Battery Powered
- Cost Effective
- Ease of Use

# SPECTRUM ANALYZER

- A spectrum / signal analyzer measures the magnitude of an input signal versus frequency within the full frequency range of the instrument.
- The primary use is to measure the power of the spectrum of known and unknown signals.
- One of the most popular applications is Wireless local area network (WLAN) testing, also known as Wi-fi testing.