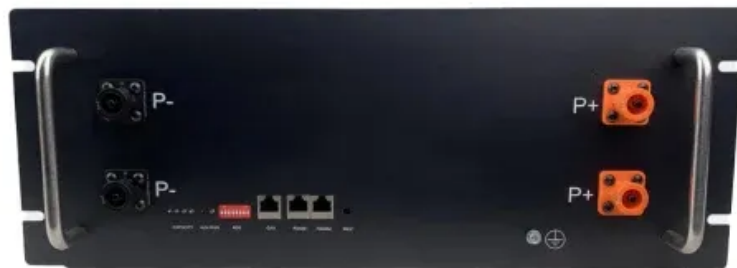# What type of base stations are built for 5G communication

Overview

What is 5G base station architecture?

5G base station architecture is characterized by its flexibility, virtualization, and the ability to support diverse services through network slicing. The separation of CU and DU, along with the introduction of cloud-based technologies, allows for more efficient resource utilization and scalability.

What are 5G NR base stations?

As per 3GPP specifications for 5G NR, it defines three classes for 5G NR base stations: These classes are as per cell types deployments like Macrocell, Microcell, and Pico cell. Wide Area base station: No upper limit Medium Range base station: <38dBm or 6.3 watts Local area base station: <24 dBm or 0.25 watts BS type 1-C.

How does a 5G base station work?

5G base stations operate by using multiple input and multiple output (MIMO) antennas to send and receive more data simultaneously compared to previous generations of mobile networks. They are designed to handle the increased data traffic and provide higher speeds by operating in higher frequency bands, such as the millimeter-wave spectrum.

Why are base stations important in cellular communication?

Base stations are important in the cellular communication as it facilitate seamless communication between mobile devices and the network communication. The demand for efficient data transmission are increased as we are advancing towards new technologies such as 5G and other data intensive applications.

Why do 5G base stations use MIMO & beamforming?

Both are critical for ensuring seamless communication between different network elements. 5G base stations often use Massive Multiple Input Multiple

Output (MIMO) technology and beamforming to enhance spectral efficiency and coverage. Massive MIMO involves using a large number of antennas to communicate with multiple devices simultaneously.

What is a 5G ran?

The RAN is responsible for connecting user devices to the core network. In 5G, the RAN is divided into two main components: gNB (gNodeB) and NG-RAN (Next-Generation RAN). gNB (gNodeB): This is the physical base station that communicates directly with user devices (UEs).

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