

ContainerPower Energy Solutions

Hexagonal mobile communication green base station



Overview

Are green cellular base stations sustainable?

This study presents an overview of sustainable and green cellular base stations (BSs), which account for most of the energy consumed in cellular networks. We review the architecture of the BS and the power consumption model, and then summarize the trends in green cellular network research over the past decade.

What is a hexagonal cell shape?

The hexagonal cell shape shown in Figure 3.1 is conceptual and is a simplistic model of the radio coverage for each base station, but it has been universally adopted since the hexagon permits easy and manageable analysis of a cellular system.

What is a mobile communication base station?

Mobile communication base station is a form of radio station, which refers to a radio transceiver station that transmits information between mobile phone terminals through a mobile communication exchange center in a certain radio coverage area.

Which directional antenna is used in a hexagonal cell?

Normally, omnidirectional antennas are used in center-excited cells and sectored directional antennas are used in corner-excited cells. Practical considerations usually do not allow base stations to be placed exactly as they appear in the hexagonal layout.

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.

How do cellular base stations work?

Each cellular base station is allocated a group of radio channels to be used within a small geographic area called a cell. Base stations in adjacent cells are assigned channel groups which contain completely different channels than neighboring cells. The base station antennas are designed to achieve the desired coverage within the particular cell.

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