

# Atom communication green base station





## Overview

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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.

Can low-carbon communication base stations improve local energy use?

Therefore, low-carbon upgrades to communication base stations can effectively improve the economics of local energy use while reducing local environmental pollution and gaining public health benefits. For this research, we recommend further in-depth exploration in three areas for the future.

What is a low-carbon base station?

(A) The low-carbon base station consists of a power converter, power grid, photovoltaic, energy storage battery, and base station. The low-carbon base station system maintains communication with the control cloud platform and the micro base station.

How much energy does a communication base station use a day?

A small-scale communication base station communication antenna with an average power of 2 kW can consume up to 48 kWh per day. 4,5,6 Therefore, the low-carbon upgrade of communication base stations and systems is at the core of the telecommunications industry's energy use issues.



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Multi-objective cooperative optimization of communication base station

Sep 30, 2024 · This paper develops a method to consider the multi-objective cooperative optimization operation of 5G communication base stations and Active Distribution Network ...

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UAV Assisted BS Sleep Strategy for Green Communication

Apr 29, 2025 · To enable green communication, we propose a novel unmanned aerial vehicle (UAV) assisted ground base station (GBS) sleep network architecture, in which most of the ...

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Communication Base Station Green Energy , Huijue Group E ...

As global telecom networks expand exponentially, how can communication base station green energy solutions address the sector's mounting carbon footprint? With over 7 million cellular ...

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China Mobile - Renewable energy and green base station ...

Aug 7, 2025 · China Mobile added 467,000 5G base stations while achieving a 2% reduction in overall base station energy consumption in 2024.

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Green Radio Communication Networks: Base station power ...

This book serves as a one-stop reference for key concepts and design techniques for energy-efficient communications and networking and provides information essential for the design of ...

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Green and Sustainable Cellular Base Stations: An Overview ...

Apr 25, 2017 · Energy efficiency and renewable energy are the main pillars of sustainability and environmental compatibility. This study presents an overview of sustainable and green cellular ...

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ITU-T Work Programme

Nov 29, 2023 · Summary: In the context of global low-carbon development and rapid development of information and communication infrastructure, the green development of base station site is ...

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Low-carbon upgrading to China's communications base stations ...

Nov 21, 2025 · It is important for China's communications industry to reduce its reliance on grid-powered systems to lower base station energy costs and meet nationa...

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Toward Green Network: An Expanding of Base Station ...

Aug 4, 2025 · Green network aims to promote the sustainable development of communication systems, and base station (BS) and cells sleeping has been proven effective in reducing the ...

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Green Communications , Engineering And Technology Journal

The main goal of designing green base stations is to save energy and reduce power

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consumption while guaranteeing user service and coverage and ensuring the base station's capability for ...

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