

## ContainerPower Energy Solutions

# External power access to Greek communication base stations



## Overview

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What are the components of a base station?

**Power Supply:** The power source provides the electrical energy to base station elements. It often features auxiliary power supply mechanisms that guarantee operation in case of lost or interrupted electricity, during blackouts. **Baseband Processor:** The baseband processor is responsible for the processing of the digital signals.

How many transceivers does a base station have?

It consist of three part elements: one or more transceivers, several antenna mounted on a tower or building, power system, and air conditioning equipment. A base station can have between 1 and 16 transceivers, depending on geography and the demand for service of an area.

What is a base station & a PV powering Unit?

The base station uses radio signals to connect devices to network as a part of traditional cellular telephone network and solar powering unit is used to power it. The PV powering unit uses solar panels to generate electricity for base stations in areas with no access to grid or areas connected to unreliable grids.

How to reduce energy consumption in LTE Macrocell base stations?

The study in Jahid et al. (2019) considered an off-grid mobile network in which the PV array and diesel generator are the power supply sources for the LTE macrocell base stations. Energy sharing method through physical power lines and energy management strategy is adopted to enhance the EE and minimize fuel consumption.

How do cellular base stations work?

Most transceivers in the cellular base stations are run by 48 VDC to charge the batteries and power the communication equipment. The air conditioning of the base station runs at 220 VAC. These base stations can be powered by two

types of diesel generators.

What is the maximum base station Power?

Maximum base station power is limited to 24 dBm output power for Local Area base stations and to 20 dBm for Home base stations, counting the power over all antennas (up to four). There is no maximum base station power defined for Wide Area base stations.

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