
Why do cellular base stations have backup batteries?

[...]Cellular base stations (BSs) are equipped with backup batteries to obtain the uninterruptible power supply (UPS) and maintain the power supply reliability. While maintaining the reliability, the backup batteries of 5G BSs have some spare capacity over time due to the traffic-sensitive characteristic of 5G BS electricity load.

How does a battery group work in a base station?

The equipment in base stations is usually supported by the utility grid, where the battery group is installed as the backup power. In case that the utility grid interrupts, the battery discharges to support the communication switching equipment during the period of the power outage.

How many batteries does a communication base station use?

Each communication base station uses a set of 200Ah \times 48V batteries. The initial capacity residual coefficient of the standby battery is 0.7, and the discharge depth is 0.3. When the mains power input is interrupted, the backup battery is used to ensure the uninterrupted operation of communication devices.

When does a base station need a backup battery?

When the power supply of the grid is good or the base station load is in a state of low energy consumption, the backup battery of the base station is usually idle. Reasonable evaluation of the reserve energy required by the base station is the premise of its response to the grid dispatching.

Why do cellular communication base stations need a battery alloc?

Current cellular communication base stations are facing serious problems due to the mismatch between the power outage situations and the backup battery supporting abilities. In this paper, we proposed BatAlloc, a battery allocation framework to address this issue.

How many battery groups does a base station have?

The original battery allocation result is largely skewed that over 65 percent base stations are equipped with only one battery group. Our framework considers both the base station situations and battery features, allocating 2 battery groups to most base stations and 3 or 4 battery groups to those with long-time power outages.

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Huijue differentiated the communication base station backup power equipment in functionality: intelligent power distribution, power metering, RS-485/4G monitoring, remote control, and ?

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