

How to classify power supply equipment of communication base stations





Overview

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.

What types of power systems are used in communications infrastructure equipment?

Communications infrastructure equipment employs a variety of power system components. Power factor corrected (PFC) AC/DC power supplies with load sharing and redundancy (N+1) at the front-end feed dense, high efficiency DC/DC modules and point-of-load converters on the back-end.

How much power does a cellular base station use?

This problem exists particularly among the mobile telephony towers in rural areas, that lack quality grid power supply. A cellular base station can use anywhere from 1 to 5 kW power per hour depending upon the number of transceivers attached to the base station, the age of cell towers, and energy needed for air conditioning.

How can the electronic industry reduce power requirements for base stations?

As a result, the electronic industry is exploring new methods to reduce the power requirements for the electronic equipment used in the base stations. The first approach is to make the base stations more tolerant to heat which will then require less power for air conditioning.

What are the different types of base stations?

Some basic types of base stations are as follows: Macro-base stations are tall towers ranging from 50 to 200 feet in height, placed at strategic locations to



provide maximum coverage in a given area. Those are equipped with large towers and antennas that transmit and receive radio signals from wireless devices.

What type of generator does a base station use?

The air conditioning of the base station runs at 220 VAC. These base stations can be powered by two types of diesel generators. The first is the conventional type where 220 VAC is converted to 48 VDC to charge the batteries and power the communication equipment.



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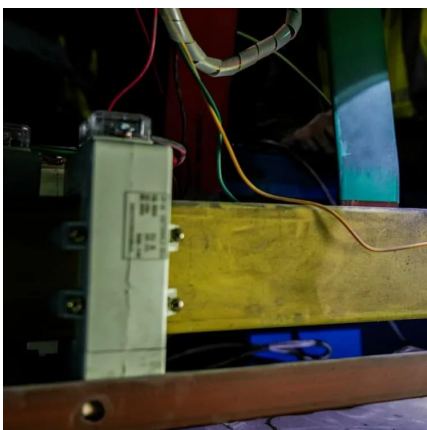


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In today's 5G era, the energy efficiency (EE) of cellular base stations is crucial for sustainable communication. Recognizing this, Mobile Network Operators are actively prioritizing EE for ...

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1 Introduction 5G communication base stations have high requirements on the reliability of power supply of the distribution network. During planning and construction, 5G base stations are ...

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At present, most of the main equipment in mobile base stations (hereinafter referred to as base stations) in the communication industry rely



on DC uninterruptible power supply systems to ...



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