



BUHLE POWER

How to design the base station power supply circuit





Overview

What are the components of a basic power supply circuit?

Now when we're talking about a basic power supply circuit there are three main components that we absolutely need to make everything work as intended. These are: The transformer is this nifty device that has two sets of windings, one is called the primary winding and the other is the secondary winding.

What makes a telecom battery pack compatible with a base station?

Compatibility and Installation Voltage Compatibility: 48V is the standard voltage for telecom base stations, so the battery pack's output voltage must align with base station equipment requirements. Modular Design: A modular structure simplifies installation, maintenance, and scalability.

What is a stabilized supply?

The design of stabilized supplies has been simplified dramatically by the introduction of voltage regulator ICs such as the L78xx and L79xx - three-terminal series regulators which provide a very stable output and include current limiter and thermal protection functions. Figures 16, 17 and 18 show how these circuits are used.

How do you protect a telecom base station?

Backup power systems in telecom base stations often operate for extended periods, making thermal management critical. Key suggestions include:

Cooling System: Install fans or heat sinks inside the battery pack to ensure efficient heat dissipation.



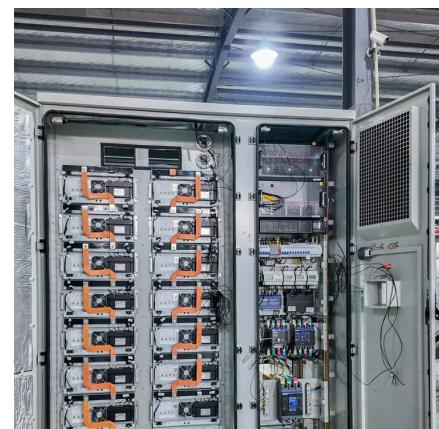
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Figure 3. A power supply for a 5G macro base station block diagram. Highlighted ICs The MAX15258 is a high voltage multiphase boost controller with an I²C digital interface designed

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POWER SUPPLY DESIGN BASICS

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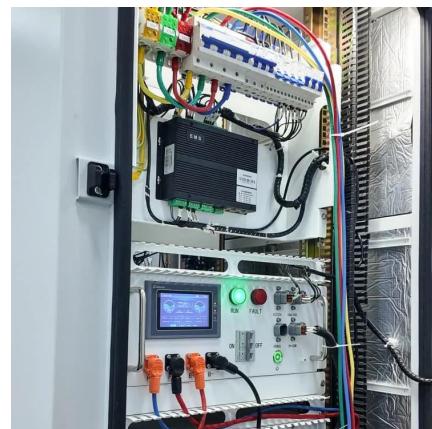
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Recommendations for 5G small base station power supply design

For power supply design engineers in the 5G era, they must be familiar with new topologies and new materials, because new material devices such as silicon carbide and gallium nitride have

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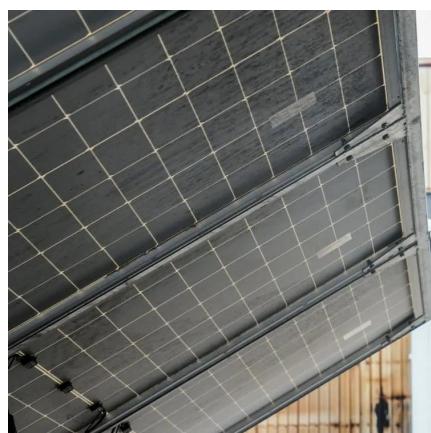
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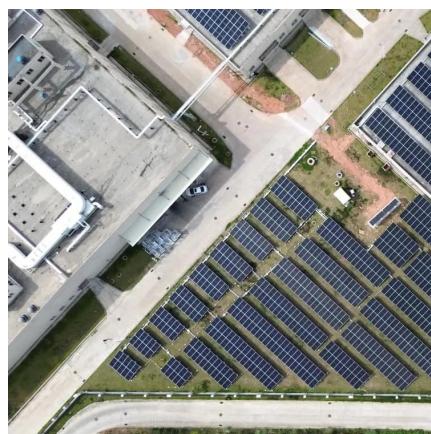


[Building better power supplies for 5G base stations](#)

May 25, 2025 · Building better power supplies for 5G base stations Authored by: Alessandro Pevere, and Francesco Di Domenico, both at Infineon Technologies

[AC/DC Power Supply Design in 7 Steps , FSP ...](#)

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[Research on Design of Switching Power Supply Based on ...](#)

Jan 6, 2024 · Main Circuit Design of Switching Power Supply Switching power supply generally single-ended forward, single-ended fly back, double forward, dual single-ended forward, push ...



[Base Station Power Supply , onsemi](#)

Oct 28, 2024 · Base station system connects mobiles to network, handling communication, data transfer, and signal processing to ensure seamless connectivity.



[Improving Power Supply Design Using Semi ...](#)

Sep 8, 2021 · While total automation of power supply design is yet to be achieved, a comprehensive range of semi-automated tools are available today. This article details the use ...

[5G macro base station power supply design strategy and ...](#)

Oct 24, 2024 · For macro base stations, Cheng Wentao of Infineon gave some suggestions on the optimization of primary and secondary power supplies. "In terms of primary power supply, we

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[Linear Regulated Power Supply Block ...](#)

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