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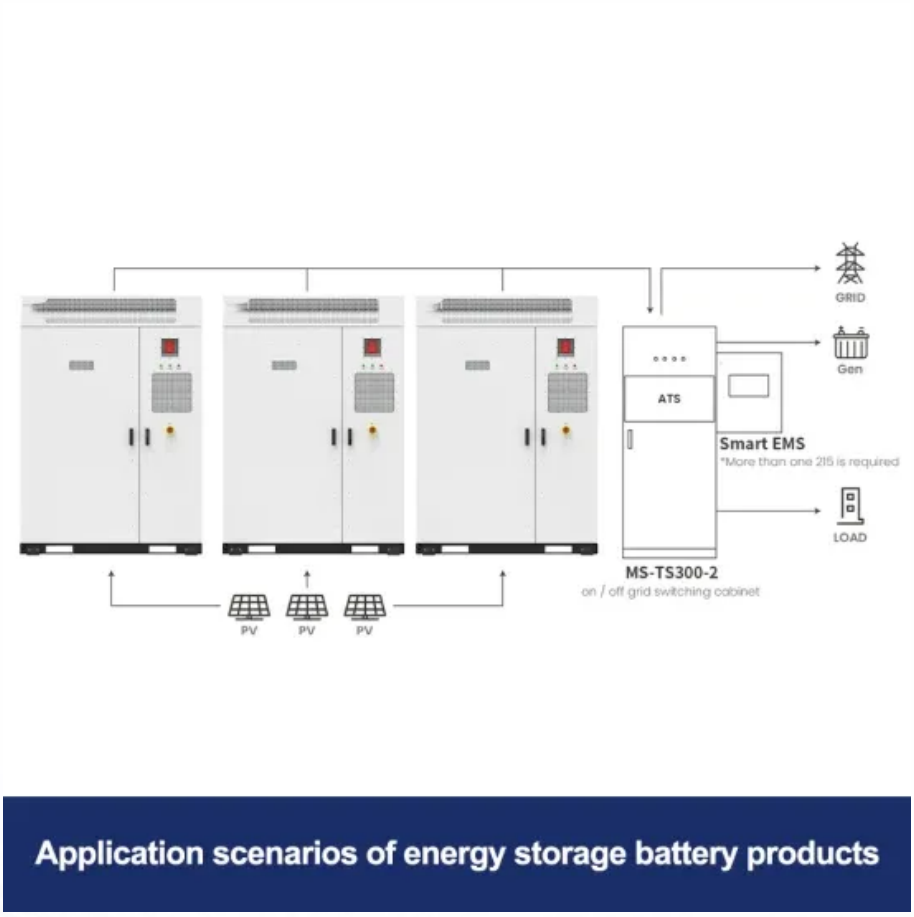
Portable Power Supply Attenuation



Application scenarios of energy storage battery products

Overview

What is power-supply noise attenuation (PSNA)?

Abstract— This paper discusses the power-supply noise attenu-ation (PSNA) in the frequency domain of four kinds of bandgap voltage reference that represent the basis of typical voltage ref-erences.

Is power-supply noise attenuation a fundamental design criterion?

However, an important param-eter, such as power-supply noise attenuation (PSNA), has not yet been analyzed explicitly in terms of its frequency behavior , , . This is despite the fact that in high-frequency ap-plications, this performance parameter becomes a fundamental design criterion.

Is Noise a problem in power supply design?

Noise is a constant problem in power-supply design. While there are FCC limits on the electromagnetic interference (EMI) radiating out into the air as well as the conducted noise that your design injects back into its input, your first noise problem is getting the noise low enough in your outputs.

Can a power supply reduce noise?

Perhaps less obvious, you can also reduce noise via proper bypassing of the control chips in your power-supply design. Bypassing the chips that being fed by the power supply will not reduce the noise at the supply, but it will be reduced at the power pins of the chips.

What are the weaknesses of switching power supplies?

However, they also have one weakness unique to switching power supplies: high-frequency noise generated by switching current on and off with semiconductor elements at high speeds. The history of switching power supply technology has been synonymous with a struggle to achieve high efficiency, as well as a battle against noise.

Is a switching power supply a source of noise?

The switching power supply itself is also a source of noise. This noise does not only flow through power supply lines as conducted noise but also becomes radiated noise (harmful electromagnetic radiation)—which adversely affects itself and other electronic equipment.

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