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Wireless base station power supply EMI

Overview

Do wireless power transfer systems meet EMI requirements?

The article presents the wireless power transfer (WPT) systems operation and challenges in meeting EMI, especially the conducted emission requirements. A solution and its operation is described using a system model, considering key parasitics elements of the system.

How to control EMI?

Controlling EMI requires attention to the following areas. Differential mode conducted emissions are caused by currents circulating between the power supply and AC mains input which means that a differential current which flows into the power supply through the Line input wire will flow out of the power supply through the Neutral input wire.

How do EMI emissions work on a power supply with no EMI filter?

The first frequency sweep for EMI conducted emissions on a power supply with no EMI filter will usually produce a spectrum as shown in Figure 49. The fundamental is outside the specification limit as well as some of the harmonics. Each harmonic is composed of both differential mode and common mode emissions. Figure 49.

Is safety a part of a power supply/EMI filter design?

In fact, safety is an integral part of the power supply/EMI filter design and is difficult to discuss as a separate issue. Throughout this application note, design guidance will also be presented for meeting safety requirements in TOPSwitch power supplies.

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Introduction to EMI in power supply designs

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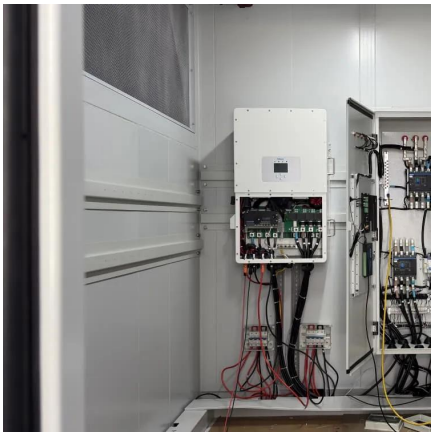

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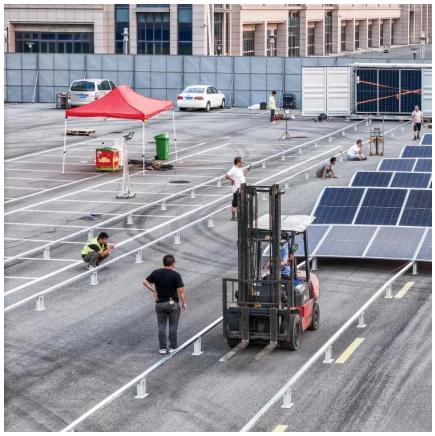

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