



How to measure the inductance of base station power supply





Overview

Why is inductor current measured in a switched-mode power supply?

This happens when an inductor is selected that does not have enough current rating for a given application. One of the main reasons for measuring inductor current in a switched-mode power supply is so that one can recognize whether the inductor was properly selected or whether inductor saturation will occur in operation or during a fault condition.

Why is accurate DC biased inductor measurement important?

Accurate DC biased inductor measurements are important in power electronics. The most important component in a switching power supply is its power inductor. A power inductor has high permeability core around which the windings are wound. It saturates when the current flowing through the conductors is larger than i .

How do you determine a power supply inductor value?

In short, the characteristics of the core material and geometry are critical in determining inductance over various operating conditions, as well as power loss in the device. Power supply designers often use simulation techniques to determine the appropriate inductor value for a design.

Why is inductance measurement important?

Inductance measurement is essential in many areas of electrical engineering, including power transmission, signal processing, and electronic circuit design. Inductance measurement can be challenging due to various factors, including stray inductance, parasitic inductance, and measurement instrument limitations.

3.3.2. Inductors



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3 Ways to Measure Inductance

Inductance is usually measured in units called millihenrys or microhenrys. It is commonly measured by using a frequency generator ...

In-Circuit Measurements of Inductors

It provides an overview of inductor theory, the role of inductors and transformers in SMPS, and how to measure inductance and current-voltage characteristics of magnetic components using ...



3 Ways to Measure Inductance

Inductance is usually measured in units called millihenrys or microhenrys. It is commonly measured by using a frequency generator and an oscilloscope or an LCM multimeter.



Power Supply Measurement and Analysis

Therefore, most power supply designers prefer to get a more accurate picture by observing the inductors behavior in the dynamically changing environment of a power supply.



DETAILS AND PACKAGING



Accurate DC biased inductor measurements are important in ...

DC Biased Inductor Measurements Accurate DC biased inductor measurements are important in power electronics most important component in a switching power supply is its power inductor. ...

[Inductor Current Measurement in Switched Power Supplies](#)

In the evaluation of these power supplies, it is often useful to measure the inductor current to gain a complete picture of the voltage conversion circuit. But what is the best way to measure the ...



3.3. Measuring Inductance -- Red Pitaya 2.00-35 documentation

The impedance measurement method is an effective way to measure the inductance of an inductor. It involves connecting the inductor in series with a known resistor and applying a ...



Injecting Signals into the Power Supply

Figure 1 shows the test setup for high impedance measurements (greater than 1 ohm), typically used to characterize magnetics. This is used to measure magnetizing inductances, leakage ...



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Inductor Current Measurement in Switched Power ...

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In-circuit Measurements of Inductors and Transformers in ...

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In-circuit Measurement of Inductors and Transformers with an

Explains how to use an oscilloscope and appropriate probes to measure inductor and transformer performance during power supply operation. Explains the use of inductance measurements ...



Measuring Stray Inductance in Power Electronics Systems

There are many approaches to accomplish this. The first class of methods use finite element analysis (FEA) simulation to predict the inductance of a given 3D geometry.

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Contact Us

For inquiries, pricing, or partnerships:

<https://sccd-sk.eu>

Phone: +32 2 808 71 94

Email: info@sccd-sk.eu

Scan QR code for WhatsApp.

