A-Core Container

Communication high frequency inverter

Overview

What is a high frequency inverter?

In many applications, it is important for an inverter to be lightweight and of a relatively small size. This can be achieved by using a High-Frequency Inverter that involves an isolated DC-DC stage (Voltage Fed Push-Pull/Full Bridge) and the DC-AC section, which provides the AC output.

What is a high-efficiency high-frequency inverter?

MHz systems such as wireless power transfer (WPT) require high-power, high-efficiency high-frequency inverters. In recent years, Gallium-Nitride high electron mobility transistors (GaN-HEMT) have been developed that are capable of high-speed switching, making it possible to realize high-efficiency high-frequency inverters.

Can high-frequency resonant inverters achieve high-power high-efficiency sinusoidal output?

VOL.E105–C, NO.9 SEPTEMBER 2022] This paper proposes a method of improving high-frequency resonant inverters to achieve high-power, high-efficiency, low-distortion sinusoidal output in the MHz frequency band such as 13.56MHz. MHz systems such as wireless power transfer (WPT) require high-power, high-efficiency high-frequency inverters.

Which power supply topologies are suitable for a high frequency inverter?

The power supply topologies suitable for the High-Frequency Inverter includes push-pull, half-bridge and the full-bridge converter as the core operation occurs in both the quadrants, thereby, increasing the power handling capability to twice of that of the converters operating in single quadrant (forward and flyback converter).

Can inverters operate at MHz switching frequencies?

Recent developments in semiconductor technology, especially in the domain of wideband gap power devices such as Gallium Nitride (GaN), have facilitated the operation of inverters at MHz switching frequencies, a realm that remains largely unexplored.

Can a half-bridge inverter achieve high power?

In this paper, the authors focus on half-bridge inverters in which the GaN-HEMT voltage does not exceed the input DC supply voltage. In addition, high power is achieved by increasing current rather than increasing GaN-HEMT voltage.

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