

High-frequency inverter with integrated inverter control

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.

Can inverters provide efficient delivery of high-frequency power into variable load impedances?

VI. CONCLUSION This paper introduces an inverter architecture and associated control approach for providing efficient delivery of high-frequency power into variable load impedances while maintaining resistive/inductive loading of the constituent inverters for ZVS soft switching.

Which type of inverter is suitable for HF operation?

In practice, one can utilize any type of inverter suitable for HF operation under resistive/inductive loading; amplitude control of the individual inverters can be realized through any suitable means (e.g., supply voltage modulation, phase-shift or outphasing control, pulse-width modulation, etc.).

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

The power supply topologies suitable for the High-Frequency Inverter include 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).

Why are HF inverters so expensive?

Abstract--Efficient generation and delivery of high-frequency (HF, 3-30 MHz) power into variable load impedances is difficult, resulting in HF inverter (or power amplifier) systems that are bulky, expensive and inefficient.

How do HF inverters work?

Inverter designs at HF generally utilize fundamental-frequency inductive loading of the inverter transistor(s) to achieve the zero-voltage switching transitions necessary for high efficiency.

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