Effectively Reduces Unwanted Current Signals in Electrical Circuits

This full bridge LLC resonant converter successfully reduces the common mode electromagnetic interference. Common mode electromagnetic interference is electrical noise that interferes with a circuit’s proper function. LLC resonant converters are used in a variety of applications, such as in TVs and computers. Electrical devices typically require passive filters to reduce electromagnetic interference, which makes them expensive and increases the device’s volume.

Researchers at the University of Florida have developed a full bridge LLC resonant converter that automatically dampens the amount of electromagnetic interference produced.

Application

Full bridge LLC resonant converter diminishes random current signals innately to produce a quieter inductor within the circuit

Advantages

- Lowers the electromagnetic interference, improving the performance of the electrical device
- Reduces the volume of passive filters, providing a cost-effective solution

Technology

Resonant converters are traditionally designed to receive input signals and then produce electric currents that are carried through the inductor. This process creates noise, which contributes to the noise interference already generated by the switch. Because noise is not isolated within the device, it interrupts functionality and can lead to fire or electrical shock. The arrangement of the capacitor and inductors in this full bridge LLC resonant converter produces a barrier containing the noise, preventing interference within the rest of the device. By lowering interference, the device is able to perform with a higher efficacy.
Inventors

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