

## **A ZVT Converter for Superconducting Corrector Magnet Applications,**

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- The purpose of our work is to describe a high current (1000 A) low voltage (5 to 15 V) power supply for superconducting corrector magnets in particle accelerators. The main characteristics of this kind of supplies are: high efficiency, small output ripple, very small regulation error and EMC regulations fulfilment. In order to suit the above mentioned requirements, we have chosen a full bridge topology featuring ZVT. The input section consists basically on a non controlled rectifier with input inductors. this inductors and the output capacitors of the rectifier implement a DC filter that satisfies the audio susceptibility specification (< 40 mV). The HF inverter section consists on the ZVT converter followed by a high current transformer, a rectifier and a filter. Power regulation is achieved by means of phase shifting as is usually done in a ZVT converter. In order to decrease losses we have chosen a centre-tapped configuration at the output that employs high current and high voltage Schottky diodes.

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