GaN Power Stage for Switch-mode Audio Amplification

Gallium Nitride (GaN) based power transistors are gaining more and more attention since the introduction of the enhancement mode eGaN Field Effect Transistor (FET) which makes an adaptation from Metal-Oxide Semiconductor (MOSFET) to eGaN based technology less complex than by using depletion mode GaN FETs. This project seeks to investigate the possibilities of using eGaN FETs as the power switching device in a full bridge power stage intended for switch mode audio amplification. A 50 W 1 MHz power stage was built and provided promising audio performance. Future work includes optimization of dead time and investigation of switching frequency versus audio performance.

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