URN etd-0407109-183705-352
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Statistics This thesis had been viewed 55 times. Download 230 times.
Department
Year 2006
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Design and Implementation of Power Supply System for LCD-TV Applications
Date of Defense 0000-00-00
Page Count 0

Keyword
LCD
LLC-resonant

Abstract
This thesis presents a design and implement of a 250W LCD-TV power supply. The proposed system is consisted of a front-stage which is with the power factor correction (PFC) function and a second-stage built by a dual-output LLC resonant converter. An auxiliary flyback converter is used as a stand-by power. The PFC stage operated in boundary conduction mode is high efficiency, high power factor and low cost. The LLC resonant converter has less number of components. The LLC resonant topology featuring the zero-voltage-switching operating has high efficiency and is good at high frequency. When the LCD-TV is turned off, the power consumption is reduced by disabling the PFC circuit and LLC circuit, and only a 5V stand-by power is held for the remote control circuit. The pulse skip scheme is also used to reduce the losses of the flyback converter during no load. Experimental results show the duel output (DC 24V/8A, DC12V/4A), and stand-by power (DC 5V/4.5A ) of LCD-TV power supply prototype can achieve 84% efficiency and 0.94 power factor at full load condition.
Advisory Committee Ming-Tsun Tsai - advisor

Files etd-0407109-183705-352-001.pdf

indicate access worldwide
Date of Submission 2007-08-22