Design and implementation of low power RFID reader

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ABSTRACT

Radio Frequency Identification is getting more and more popular in the past ten years. RFID reader plays a major role in the RFID system. The power consumption of RFID reader becomes a very important issue. The digital signal processing unit of reader is usually made of variant of microcontrollers. Although, these microcontrollers provide a lot of low power instructions, but reader back to the working mode by interruption caused by user when reader is working at idle mode. We present a low power strategy with gated clock technique by dividing working mode into four modes, configuration mode, active mode, idle mode and user mode and adding an additional mode-controller to handle transitions between each mode. Finally, we design a low power RFID Reader circuit complies with the ISO 14443 TYPE A standard. Experimental results show that the goal of automatic operation is achieved and reduce about 51% of dynamic power consumption in idle mode.

Keywords : RFID, Reader, Low Power

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