

A 63 μ W-Standby-Power Microcontroller with On-Chip Hybrid Regulator Scheme

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We present a 32-bit RISC microcontroller having an on-chip DC/DC converter. The chip standby power including the DC/DC converter is reduced to 63 μ W with a new hybrid regulator scheme in which the microcontroller selects a switching regulator in active mode and a series regulator in standby mode. The achieved standby power corresponds to only about 1% the standby power with a conventional scheme which always uses a switching regulator.