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Abstract
The H.264 video compression standard introduces a new set of
context adaptive entropy coding tools such as Context Adaptive
Variable Length Coding (CAVLC) and Context Adaptive Binary Arithmetic
Coding (CABAC). In the Main Profile, an option to use CABAC is
available. CABAC is a more sophisticated entropy coding method
that improves the compression efficiency. In this thesis
we propose a low power architecture of CABAC to improve the power
consumption in H.264 encoder. We use 15 groups of register files
to store the MPS and state for each context model. During the
estimating process, only one register file will be accessed,
but not all the register files. Therefore, the power consumption
can be reduced efficiently. We have verified the method on an
Altera FPGA, and the experimental results show that the power
consumption can improve 6% as comparing to the traditional method.
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