

ABSTRACT OF THE DISCLOSURE

A memory controller, an application processor, and a method of operating the memory controller can control performance and power consumption of an input/output device. The method includes allowing the memory device to enter a power down mode after an idle state is maintained for a first time period corresponding to a first setting value which is currently set, allowing the memory device to enter from the power down mode into an active state when access to the memory device occurs, determining a maintenance time of the power down mode to change the first setting value to a second setting value, based on a result obtained by monitoring a driving pattern of the memory device, and when the idle state is maintained for a second time period different from the first time period, allowing the memory device to enter the power down mode, based on the second setting value.

FIG. 1