

ABSTRACT

A storage device includes a power supply device including an auxiliary power supply device providing auxiliary power, configured to generate a deterioration monitoring signal indicating a degree of deterioration of the auxiliary power supply device, and configured to generate an output voltage based on external power or the auxiliary power; and a main system configured to operate based on the output voltage and perform a dump operation for backing up data in a sudden power off (SPO) situation, wherein the main system compares the degree of deterioration of the auxiliary power supply device with a preset reference value in response to the deterioration monitoring signal, and generates a voltage scaling command for controlling the power supply device to convert an average voltage level of the output voltage to a dynamic voltage scaling (DVS) level based on a result of the comparison.

FIG. 1