

ABSTRACT

A storage device includes a nonvolatile memory device, a random access memory that includes a first region and a second region, and a controller that is configured to use the first region of the random access memory as a journal memory for a journal indicating modification of data of the second region, expose a user region of the nonvolatile memory device to an external host device as a first access region of a block unit, and expose the second region of the random access memory to the external host device as both a second access region of the block unit and a third access region of a byte unit.

FIG. 4