

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2024/0251566 A1 Lin et al.

Jul. 25, 2024 (43) **Pub. Date:**

(54) PROCESSING AND MEMORY DEVICE AND **SYSTEM**

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(21) Appl. No.: 18/627,334

(22) Filed: Apr. 4, 2024

Related U.S. Application Data

- (63) Continuation of application No. 16/270,484, filed on Feb. 7, 2019, now Pat. No. 11,968,843.
- (60) Provisional application No. 62/691,498, filed on Jun. 28, 2018.

Publication Classification

(51) Int. Cl. H10B 61/00 (2006.01)G06F 3/06 (2006.01)G11C 11/16 (2006.01)H10N 50/01 (2006.01)H10N 50/80 (2006.01)

(52)U.S. Cl. CPC H10B 61/20 (2023.02); G06F 3/0604 (2013.01); G06F 3/0659 (2013.01); G06F 3/0673 (2013.01); G11C 11/161 (2013.01); G11C 11/1653 (2013.01); G11C 11/1673 (2013.01); G11C 11/1675 (2013.01); H10N 50/01 (2023.02); H10N 50/80 (2023.02)

(57)ABSTRACT

An embodiment of an integrated circuit chip includes a combination processing core and magnetoresistive random access memory (MRAM) circuitry integrated into the chip. The MRAM circuitry includes a plurality of MRAM cells. The MRAM cells are organized into a number of memories, including a cache memory, a main or working memory and an optional secondary storage memory. The cache memory includes multiple cache levels.

