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(54) **Title:** OPTICAL MEMORY MODULE, CACHE MANAGER FOR AN OPTICAL MEMORY MODULE

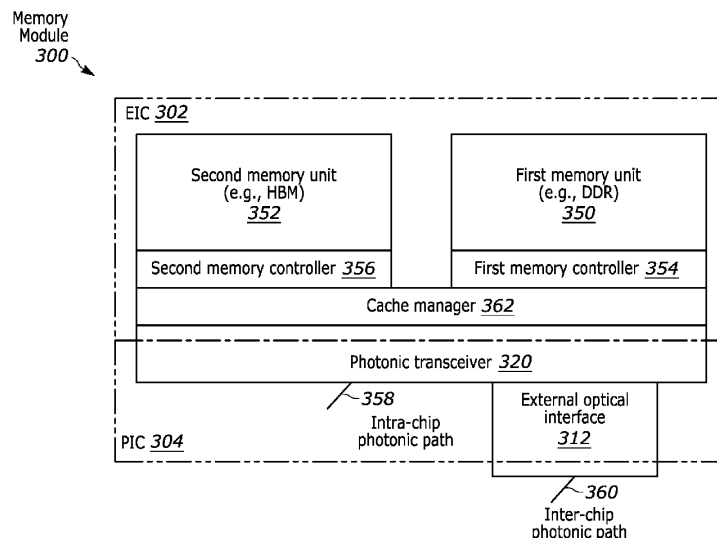


FIG. 3

(57) **Abstract:** Systems and methods that include an optical memory module and cache manager for an optical memory module are disclosed. In an example, a memory module includes a photonic integrated circuit (PIC), an electric integrated circuit (EIC) stacked on the PIC and having a first memory interface and a second memory interface, photonic transceivers optically coupled to the PIC and electrically coupled to the EIC, first memory electrically coupled to the first memory interface of the EIC, second memory electrically coupled to the second memory interface of the EIC, the EIC including a cache manager between the first memory interface and the second memory interface, and a memory controller between the first memory and the photonic transceivers, and the PIC, EIC, photonic transceivers, first memory, and second memory are co-packaged.

[Continued on next page]

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