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(54) **ARITHMETIC UNIT FOR DEEP LEARNING ACCELERATION**

(57) Embodiments of a device include an integrated circuit, a reconfigurable stream switch formed in the integrated circuit, and an arithmetic unit (700) coupled to the reconfigurable stream switch. The arithmetic unit (700) has a plurality of inputs and at least one output, and the arithmetic unit (700) is solely dedicated to performance of a plurality of parallel operations. Each one of the plurality of parallel operations carries out a portion of the formula: output = AX + BY + C.

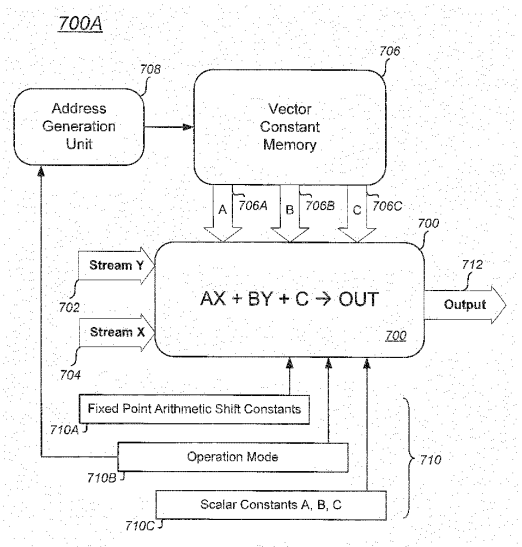

Fig. 7A

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