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(54) Title: SPARSE MODIFIABLE BIT LENGTH DETERMINISTIC PULSE GENERATION FOR UPDATING ANALOG CROSSBAR ARRAYS

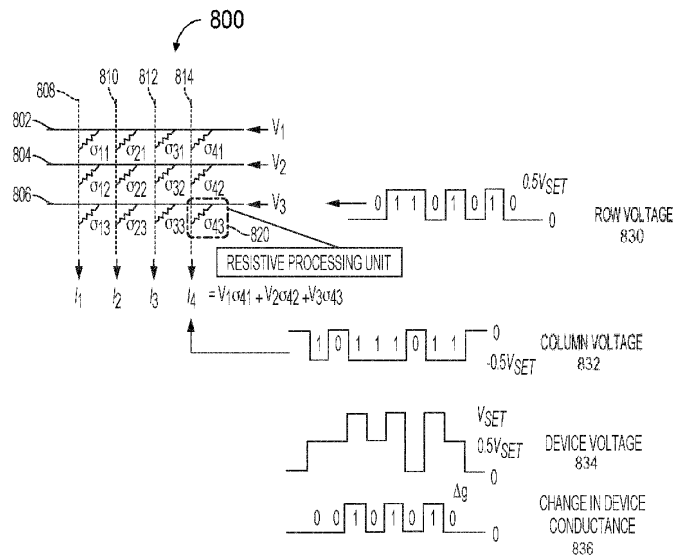


FIG. 8

(57) Abstract: Provided are embodiments for a computer-implemented method, a system, and a computer program product for updating analog crossbar arrays. The embodiments include receiving a number used in matrix multiplication to represent using pulse generation for a crossbar array, and receiving a first bit-length to represent the number, wherein the bit-length is a modifiable bit length. The embodiments also include selecting pulse positions in a pulse sequence having the first bit length to represent the number, performing a computation using the selected pulse positions in the pulse sequence, and updating the crossbar array using the computation.

[Continued on next page]

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