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(54) **Title:** SYSTEM AND METHOD FOR CONTROLLING QUANTUM PROCESSING ELEMENTS

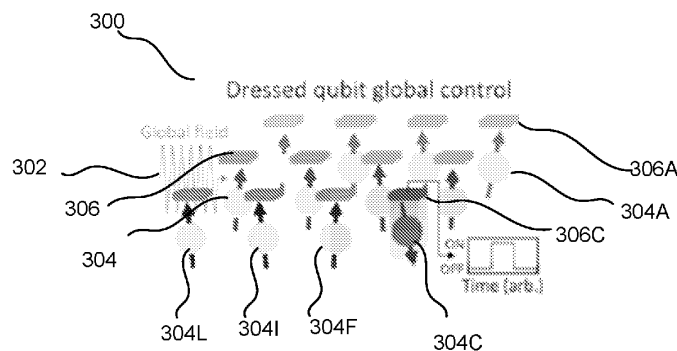


Fig. 3A

(57) **Abstract:** The present disclosure is related to quantum processing systems and more particularly to systems and methods for controlling quantum processing elements. A method for controlling one or more qubits in a quantum processing system, the quantum processing system comprising a plurality of qubits. The method comprises generating an AC electromagnetic field, modulating the amplitude of the AC electromagnetic field to generate an amplitude modulated AC electromagnetic field, applying the amplitude modulated AC electromagnetic field to the quantum processing system, wherein in an idle mode the plurality of qubits are tuned to be on resonance with the amplitude modulated AC electromagnetic field, and individually controlling the Larmor frequency of the one or more qubits to change synchronously with the amplitude modulated AC electromagnetic field to perform an operation on the one or more qubits.

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