



(54) **QUANTUM CONTROLLER ARCHITECTURE**

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(57) **ABSTRACT**

A system comprises pulse generation and measurement circuitry comprising a plurality of pulse generator circuits and a plurality of ports, and management circuitry. The management circuitry is operable to analyze a specification of a controlled system and controlled elements that comprises a definition of a controlled element of the control system, and a definition of one or more pulses available for transmission by the control system. The management circuitry is operable to configure, based on the specification, the pulse generation and measurement circuitry to: generate the one or more pulses via one or more of the plurality of pulse generator circuits; and output the one or more pulses to the controlled element via one or more of the plurality of ports.

