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(57) **ABSTRACT**

A surface ion trap comprising a plurality of electrodes and DACs, each electrode being controlled by a DAC, wherein a first set of DACs control the electrodes configured to trap an ion in a first area and a second set of DACs control the electrodes configured to trap an ion in a second area wherein the first set of DACs are configured to operate with low noise and low bandwidth and the second set of DACs are configured to operate with a high bandwidth and high noise.

