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P1.42: Design of Nupix-A2, a Monolithic Active Pixel sensor for heavy-ion physics

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A MAPS named Nupix-A2 has been developed in a 130nm High Resistivity CMOS process for particle hit imaging applications. The Nupix-A2 can simultaneously measure particle hits' energy, arrival time, and position. It consists of the pixel array with 128 x 128 pixel array, the digital-to-analog converter (DAC) array and a digital control (DC) module. To adapt to different imaging needs, the Nupix-A2 has two operation mode: full-readout mode and fast-readout mode. This paper will discuss the design and performance of the Nupix-A2.

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