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The Data Acquisition System for the Nab Experiment[1] AARON SPROW, CHRISTOPHER CRAWFORD, SIMON LOVELL, University of Kentucky, NAB COLLABORATION — The Nab experiment will measure the unpolarized electron-neutrino correlation coefficient 'a' in neutron decay with an absolute uncertainty of 10^{-4}. This requires high energy and timing resolution, and a multi-pixel low threshold trigger to efficiently detect 30 keV protons. Digital waveforms must be read out for offline pulse-shape analysis from all neighboring channels of hits in the two 128-pixel ion implanted silicon detectors. We are testing three DAQ candidates based on flash ADC digitizers and FPGA digital pulse processing on a prototype Nab detector mounted in the UCNA apparatus at Los Alamos National Laboratory. We have tested the systems to determine the energy and time resolution, as well as to characterize the noise in each digitizer. We will present the noise level, time and energy resolution, and wave form quality of three systems.

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