

Abstract Submitted
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The trigger card system for the MAJORANA DEMONSTRATOR¹ WILLIAM THOMPSON, Wake Forest University, JOHN ANDERSON, Argonne National Laboratory, MARK HOWE, SAM MEIJER, JOHN WILKERSON, University of North Carolina at Chapel Hill, MAJORANA COLLABORATION — The aim of the MAJORANA DEMONSTRATOR is to demonstrate the feasibility of providing low enough background levels to search for neutrinoless double-beta decay ($0\nu\beta\beta$) in an array of germanium detectors enriched to 87% in ^{76}Ge . Currently, it is unknown if this decay process occurs; however, observation of such a decay process would show that lepton number is violated, confirm that neutrinos are Majorana particles, and yield information on the absolute mass scale of the neutrino. With current experimental results indicating a half-life greater than 2×10^{25} years for this decay, the minimization of background events is of critical importance. Utilizing time correlation, coincidence testing is able to reject multi-detector events that may otherwise be mistaken for $0\nu\beta\beta$ when viewed independently. Here, we present both the hardware and software of the trigger card system, which provides a common clock to all digitizers and the muon veto system, thereby enabling the rejection of background events through coincidence testing. Current experimental results demonstrate the accuracy of the distributed clock to be within two clock pulses (20 ns) across all system components. A test system is used to validate the data acquisition system.

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