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A Test Apparatus for the MAJORANA DEMONSTRATOR Front-end Electronics HARJIT SINGH, JAMES LOACH, ALAN POON, Lawrence Berkeley National Laboratory, MAJORANA COLLABORATION COLLABORATION — One of the most important experimental programs in neutrino physics is the search for neutrinoless double-beta decay. The MAJORANA collaboration is searching for this rare nuclear process in the Ge-76 isotope using HPGe detectors. Each detector is instrumented with high-performance electronics to read out and amplify the signals. The part of the electronics close to the detectors, consisting of a novel front-end circuit, cables and connectors, is made of radio-pure materials and is exceedingly delicate. In this work a dedicated test apparatus was created to benchmark the performance of the electronics before installation in the experiment. The apparatus was designed for cleanroom use, with fixtures to hold the components without contaminating them, and included the electronics necessary for power and readout. In addition to testing, the station will find longer term use in development of future versions of the electronics.

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