



Contribution ID: 227

Type: Sectional

Raspberry Pi 3 based software and hardware system for Radiation Hardening testing of electronic components

Electronic base, designed for use in high radiation fields, such as particle accelerators, should be radiation hardened. To study the radiation resistance of such electronic components, various sources of ionizing radiation are used, with the use of which the components of the systems under study are subjected to prolonged exposure to fluxes of high-energy particles. This process often takes a long time, which also ensures the high cost of such research. The study of radiation resistance requires the creation of specialized research complexes. Such systems make it possible to assess the quality of the components' performance depending on the radiation dose and weed out elements that do not meet the radiation resistance criteria for specific tasks at the equipment design stage.

The system designed to test the radiation hardening of electronic components. It is based on Raspberry Pi 3 microcomputer. Provides web-interface to acquire and express analysis of data taken. System tested in CHARM facility test area.

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Track Classification: Detector & Nuclear Electronics