

Low Background Readout Electronics for Large Area Silicon Photomultipliers

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In this work we present a low noise high speed readout electronics for large area Silicon Photomultipliers (SiPMs) to be used in a cryogenic environment. The board is able to manage the signals coming from a $\sim 25 \text{ cm}^2$ SiPM tile, showing $<10\%$ SPE resolution and wide dynamic. The sub-nanosecond timing properties make them suitable to work with the typical mixtures of Liquid Scintillators currently being used in particle and astroparticle physics experiments. The boards have been tested with several types of SiPMs from room temperature down to -70 C showing excellent single photo-electron resolution in all the environment. The board's PCBs have been developed with ultra low background material in order to be used in rare event searches.

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