

Abstract Submitted  
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**Readout and Monitoring Electronics Development for a Prototype Photon Detector** TOM CUMMINGS, NORM BUCHANAN, DAVE WARNER, Colorado State University — Current silicon photomultiplier devices require specialized interfacing hardware. We have developed electronics to accommodate these devices for the use of photon detection. These electronics are designed to isolate ambient noise, trim bias voltages for individual silicon photomultiplier devices, and amplify signals from photon activity. A dedicated voltage trimmer is being developed to reduce noise introduced into the system from a power source. This device also has the capability of digitally controlling the output to each silicon photomultiplier device, with a resolution of 50mV. The amplifier being developed uses two, high-speed operational amplifiers to amplify photon signals. Additionally, this board contains a discriminated pulse generator (NIM), triggered on photon events. Both trigger level and pulse width are digitally controlled via LabVIEW software. We have also developed methods of remotely monitoring fill levels of cryogenic liquid. The system designed utilizes a capacitive controller to monitor the liquid level, by detecting an increase in capacitance, due to an increase in liquid volume. The measurements of this controller are fed directly into LabVIEW software via USB. The current status of these electronics will be discussed.

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