

Adaptation of MINOS photomultipliers for low cost, large scale applications in contemporary particle physics experiments

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The conclusion of the MINOS neutrino experiment created the availability of hundreds of Hamamatsu Multi-anode Photomultiplier tubes. This talk will detail a new electronics system encompassing power and readout for the R5900-00-M64 model tailored to the updated requirements of contemporary and future experimental particle physics. It comprises exclusively low voltage input requirements, low power consumption and ease of manufacture, for economical large scale deployment.

The design encompasses two custom made PCBs; a Cockcroft-Walton powerbase constructed from standard commercially available components, and a DAQ board centered around the WEEROC MAROC 3A chip, from which readout is performed via FPGA and computer system. This apparatus is envisioned to provide a light detection system with proven particle physics credentials for a modern day application.

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