

Abstract Submitted  
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**Using an ARM Processor to boost data acquisition rates** ANTHONY BROWN, Abilene Christian University, SEAQUEST COLLABORATION — It has been proposed, Fermilab E-1067, to use the SeaQuest (E906/E1039/1037) dimuon spectrometer to do a search for the dark photon and dark Higgs. The concept is that it would run in a parasitic mode with only minor upgrades to the spectrometer. There are various requirements for the upgrades but one of them is to increase the DAQ rates and one minimal cost approach to do this will be discussed. The currently running SeaQuest (E906) experiment has modest rate requirements of around 1 kHz. Since the dark particle search would involve recording particles originating in the first magnet used as a beam dump, the data rate will be higher than recording events just from the target. Thus the DAQ rate capability will need to be increased to around 10 kHz. There exists a possible very low cost solution as the Academia Sinica designed TDCs contains an ARM processor that was not needed to meet the original SeaQuest (E906 needs). Since the 120 GeV beam from the Main Injector is delivered in a 4 second spill, once per minute and the ARM processor on the TDC has two dual-ported memory chips, these could be used to store data during each spill and then read the data out in the time between spills.

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