

Multiple Signal Channel Read Out by a Single FADC

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For the read out of very fast processes measured by multichannel detectors one often uses flash amplitude to digital converters (FADC) of very high sampling rate for every single channel. For example, it is planned to use FADCs for the read out of imaging cameras of the MAGIC and the VERITAS gamma ray air Cherenkov telescopes. The imaging camera of the new generation gamma telescope includes typically 500-1000 channels. For the time being the FADCs providing a sampling rate of one Gigasample or even more are quite expensive. We propose here a scheme which will allow one to use a single FADC module in the multiplexing mode for the read out of multiple signal channels in common trigger mode. This solution can allow one to reduce the total number of necessary FADCs by an order of magnitude compared to the number of read out signal channels.