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A Front-End Electronics Board for MaPMT Single Photoelectron Signals

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A Front-End design based on Commercial Operational Amplifiers for current sensitive amplifier has been developed to read-out signals from MaPMT. The overall design has been optimized for Single Photo-Electron Signal from the Hamamatsu H8500. The board has been developed in the framework of the PID detector of SuperB experiment to study in details the characteristic of the MaPMT chosen for the final integration. The signal collected by the current sensitive preamplifier is then fed into a ECL fast discriminator and a shaper for differential output. Performances in terms of channel sharing, gain and timing resolution will be discussed, presenting results obtained on a test bench and with the board plugged into the H8500 MaPMT illuminated by a picosecond laser.

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