

## Calibration System with Notched Fibres

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Modern detectors with significantly increasing number of active channels require new approach for calibration systems. The calibration system on the first prototype of scintillation tile AHCAL in CALICE used one optical fibre for each of 7608 channels for calibration light distribution. As the proposed analogue hadronic calorimeter for ILC should have around  $10^6$  channels, the former system is inapplicable due to spatial needs and manufacture difficulties. Now two ways of light distribution system are considered. The first one uses one LED for every SiPM channel and is placed directly on PCB. The second one is focused on a simplification of the light distribution system using one fibre with notches for more channels and will be presented here. This system allows to calibrate one row of 72 scintillating tiles read by SiPMs using one driver with one LED and three subsequent notched fibres. We will present principals, parameters of the current system and requirements for future development to allow reliable manufacturing. Benefits and drawbacks of notched fibre system in comparison to the system with embedded LED for each SiPM channel will be discussed. We also report on the latest version of the electronics for the calibration and monitoring system developed for single UV-LED. The system is based on original fast (3 ns pulse-width) and precise LED driver called QMB. Due to its high dynamic range of precise a few nanosecond pulses it is flexible to all necessary monitoring and calibration task for SiPM like detectors.