Measurement of the Mean Radial Position of a Lead Ion Beam in the CERN PS, J. BELLEMAN, V. CHOHAN, J.L. GONZALEZ, E. SCHULTE, E. THIVENT, CERN - The intensity of the lead ion beam in the PS, nominally 4 10 8 charges of Pb 53+ per bunch, is too low for the closed orbit measurement system. However, for successful acceleration it is sufficient to know the mean radial position (MRP). A system was thus designed for simultaneous acquisition of revolution frequency and magnetic field. The frequency measurement uses a direct digital synthesiser (DDS), phase-locked to the beam signal from a special high sensitivity pick-up. The magnetic field is obtained from the so-called B-train. From these two values, the MRP is calculated. The precision depends on the frequency measurement and on the correctness of the value for the magnetic field. Furthermore, exact knowledge of the transition energy is essential. This paper describes the hardware and software developed for the MRP system, and discusses the issue of calibration, with a proton beam, of the B measurement.