16 Electronic

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In order to study cells of the central nervous system of testpersons at the Neurologische Klinik of the Universitäts-Spital Zürich (NF-Exp. B.Weber), we have successfully modified a commercial stimulus machine (Made in Japan).

For test and control measurements of micro-strip-gas-chambers (MSGC's) at the PSI Villigen (HERA-B Collaboration), we have constructed and built an X-Y position readout system. It consists of two solid-state display units and two low impedance signal outputs (for ADC/PC readout). We have also been asked by the H1 group (Prof. P. Truöl) to help in the realization of the H1 CIP upgrade (new MWPC).

In the report period 1998/99 we have been involved in much modification and repairwork of electronic equipement for different groups at our institute.

16.1 Current Detection Amplifiers for Plasma Traps

We have built eight low noise preamplifiers for the Penning traps to be used in the ATHENA Experiment at CERN (Prof. C. Amsler). The spacial distribution of the positron (or antiproton) plasma will be measured by dumping the charged particle clouds into concentric ring electrodes around the trap axis and by measuring the currents. The amplifiers will be used in spring 1999 for preliminary measurements with an electron plasma. Their main properties are a high input impedance (200 MOhm), very low noise, wide bandwidth and a good linear response.

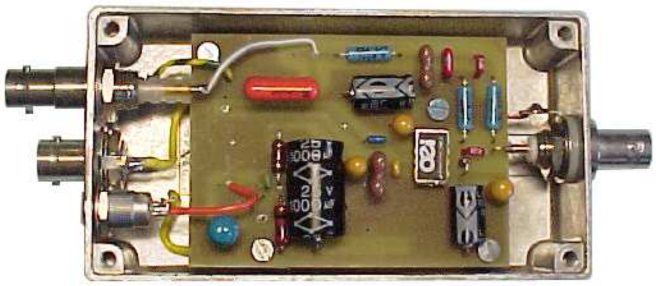

Figure 16.1: *Low Noise Amplifier for the ATHENA apparatus*