

STATUS OF LONGITUDINAL FEEDBACK SYSTEM FOR THE PLS STORAGE RING*

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The higher order modes of RF cavities at the Pohang Light Source (PLS) storage ring make longitudinal coupled bunch mode instabilities (CBMIs). Because of this instabilities, the current stored at the PLS is about 200 mA which is less than the designed value of 400 mA. To cure CBMIs, the longitudinal feedback system (LFS) is introduced at the PLS storage ring. The LFS is composed of a phase error pickup, a LFS kicker, and a DSP farm which includes a VXI crate, two VME crate where fifteen DSP boards (4x15 DSP chips) and three MOTOROLA MVME-166 VME controllers are housed. EPICS is based to make the control operator interface (OPI) for the LFS. All control panels can be edited with the EPICS OPI display editor (EDD). With the OPI panels and the programmed codes with MATLAB, it is possible that the operator controls the LFS and obtains the data for beam diagnostics such as the growth and damping rates of CBMIs generated by the higher order modes (HOMs) of RF cavities from the dual port memory (DPM) located on the DSP boards.